

**SOLAR ENERGY SYSTEMS**

**DRAFT ORDINANCE - Durham, New Hampshire**

***Revised draft endorsed by Planning Board on March 13, 2019 - Amendments proposed by Malcolm Sandberg***

for ~~March 27~~ April 10, 2019 ~~Continued~~ Public Hearing

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Proposed amendments to the Durham Zoning Ordinance to accommodate solar energy systems.

***❖ Revise Article XX – Standards for Specific Uses, Section 175-109, R. to insert before Temporary Sawmill the following:***

***Solar Energy Systems.*** Solar energy systems shall be allowed in conformance with the following standards and procedures (See Definitions for solar energy systems).

1. ***Authority.*** This ordinance is adopted pursuant to RSAs 362-F, 374-G, 477:49, 672:1 III-a, and 674:17 (D)(j).
2. ***Purpose.*** The purpose of this ordinance is to:
  - a. ***encourage, facilitate and regulate the installation of solar energy systems in accordance with the recommendations stated in the Energy Chapter of the 2015 Durham Master Plan;***
  - b. ***promote environmental sustainability while respecting aesthetics, rural character and scenic landscapes of Durham and protecting the of productive agricultural land; and***
  - c. ***comply with and support the State of New Hampshire’s goal of developing clean, safe, renewable energy resources as provided for in the statutes referred to in 1., above.***

***❖ Make the following changes in Article II. Definitions.***

- ***Add this new section for “Solar Energy Systems.” Place this section right before “Solid Waste” and retain the order as shown here.***

SOLAR ENERGY SYSTEMS – Specific definitions pertinent to solar energy systems follow.

***Solar Energy*** – Radiant energy emitted by the sun.

***Solar Energy System*** – A structure and the related components used to transform solar energy into electricity (through a solar photovoltaic system) or heat (through a solar thermal system).

Solar Photovoltaic System – A solar collection, inversion, storage and distribution system that converts sunlight into electricity.

Solar Thermal System – A solar collection system that directly heats a heat-transfer medium.

Buffering: The use of landscaping to create a natural-looking vegetative buffer to mitigate the visual impact of freestanding solar systems from roadways and neighboring properties.

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Building-Mounted Solar Energy System – A solar energy system attached to and completely supported by a building that does not extend more than 5 feet beyond the building footprint. The system may include necessary accessory equipment that is ground mounted. ~~A solar energy system or a multiunit residential or nonresidential solar energy system that is installed on a carport is considered a building-mounted solar energy system.~~

Freestanding Solar Energy System – A ground-mounted solar energy system, including a stationary or tracking system (either single axis or dual axis).

Accessory Use Solar Energy System:

A solar installation designed for on-site energy use.

Principal Use Solar Energy System:

A solar installation specifically designed for off-site energy use

~~Single-Family or Duplex Residential Solar Energy System—An accessory use that is designed to provide energy for the property.~~

~~Multiunit Residential or Nonresidential Solar Energy System—An accessory use that is designed to provide energy for all uses other than single-family or duplex residences—multiunit developments, commercial uses, other nonresidential uses, mixed uses, and shared systems.~~

~~Enterprise Solar Energy System—A principal use designed to generate energy for use off site. An enterprise solar energy system may be structured as a for-profit, not-for-profit, utility, municipal, or community solar operation.~~

~~Community Solar Energy System—A solar energy system shared by multiple subscribers/investors located elsewhere who receive credit on their electric bills for their share of the electricity that is produced.~~

~~Shared Solar Energy System—A solar energy system that serves houses and/or developments situated on two or more separate neighboring lots. The system is considered accessory to the uses on each of the lots that it serves.~~

Carport - A roofed structure for parking motor vehicles that is open on at least two sides.

a. A solar energy system installed on a freestanding carport shall be considered a free-standing solar energy system.

b. A solar energy system installed on an attached carport shall be considered a building-mounted solar energy system.

➤ ~~Add the following new definition for "Carport."~~

~~CARPORT—A roofed structure for parking motor vehicles that is open on at least two sides. A carport may be a freestanding structure or attached to a building.~~

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❖ *Modify the Table of Uses as follows:*

*Add the new uses below in the Table of Uses in Section 175-53 under Subsection VI. Utility & Transportation Uses at the end after Personal Wireless Services Facility:*

*Add the following note at the end of the table under Notes: "2. A freestanding enterprise solar energy system in the Rural or Residence-C District that is located on a lot which is in use as commercial agriculture is a Permitted Use (P)."*

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CATEGORY OF USES	RESIDENTIAL ZONES				COMMERCIAL CORE ZONES					RESEARCH-INDUSTRY ZONES			
	Rural (R)	Residence A (RA)	Residence B (RB)	Residence C (RC)	Central Business (CB)	Professional Office (PO)	Church Hill (CH)	Courthouse (C)	Coe's Corner (CC)	Office Research - Route 108 (OR)	Mixed Use and Office Research (MUDOR)	Office Research Light Industry (ORLI)	Durham Business Park (DBP)
<b>VI. UTILITY &amp; TRANSPORTATION USES</b>													
<i>Single family or duplex residential solar energy system – accessory use (See Article XX)</i>	P	P	P	P	P	P	P	P	P	P	P	P	P
<i>Multiunit residential or nonresidential solar energy system – accessory use (See Article XX)</i>													
<u>Accessory Use Solar Energy System</u>													
• Building-mounted	P	P	P	P	P	P	P	P	P	P	P	P	P
• Freestanding	P	P	P	P	<del>SEX</del>	P	P	P	P	P	P	P	P
<i>Enterprise solar energy system (principal use) (See Article XX)</i>													
<u>Principal Solar Energy System</u>													
• Building-mounted	<del>CUX</del>	X	X	<del>CUX</del>	P	P	P	P	P	P	P	P	P
• Freestanding	<del>CU<sup>2</sup>X</del>	X	X	<del>CU<sup>2</sup>X</del>	X	X	X	X	CU	CU	CU	CU	CU

Comment [MS1]: The allowance for Special Exception is covered in the text and Table 175-109-R. There are no other instances of SE in the Table of Uses.

❖ *Modify the Wetland Conservation Overlay District and Shoreland Preservation Overlay District as follows:*

➤ *Add the following use at the end of Section 175-60. Permitted Uses in the WCOD Subsection A.:*

10. Building-mounted solar energy system ~~as provided for in the Table of Uses, Section 175-53 under Subsection VI. Utility & Transportation Uses.~~

➤ *Add the following use at the end of Section 175-71. Permitted Uses in the SPOD Subsection A.:*

10. Building-mounted solar energy system ~~as provided for in the Table of Uses, Section 175-53 under Subsection VI. Utility & Transportation Uses.~~

➤ *Add the following use at the end of Section 175-61. Conditional Uses in the WCOD:*

6. Freestanding solar energy system ~~as provided for in the Table of Uses, Section 175-53 under Subsection VI. Utility & Transportation Uses.~~

➤ *Add the following use at the end of Section 175-72. Conditional Uses in the SPOD:*

6. Freestanding solar energy system ~~as provided for in the Table of Uses, Section 175-53 under Subsection VI. Utility & Transportation Uses.~~

~~❖ Add the following as a new section in Article XX—Standards for Specific Uses, Section 175-109, and reletter R. Temporary Sawmill (including the table shown at the end).~~

~~R. **Solar Energy Systems.** Solar energy systems shall be allowed in conformance with the following standards and procedures (See Definitions for solar energy systems).~~

~~1. **Authority.** This ordinance is adopted pursuant to RSAs 362:F, 374:G, 477:49, 672:1 III a, and 674:17 (I)(j).~~

~~2. **Purpose.** The purpose of this ordinance is to:~~

~~a. encourage the implementation of solar energy systems in accordance with the recommendations stated in the Energy Chapter of the 2015 Durham Master Plan;~~

~~b. promote environmental sustainability, while respecting aesthetics and the rural character and scenic landscape of Durham, and the use of productive agricultural lands; and~~

e. ~~comply with and support the State of New Hampshire's goal of developing clean, safe, renewable energy resources as provided for in the statutes referred to in 1., above.~~

**Comment [MS2]:** This section was moved to page one.

3. **Applicability.** Solar installations that are designed to produce less than one kilowatt and are not connected to the electrical grid are not covered by this ordinance, though they may be subject to other specific regulations.

4. ~~Single Family or Duplex Residential Solar Energy System~~ accessory use **Accessory Use Solar Energy Systems.** The following provisions apply to residential and non-residential solar energy systems.  
~~The following provisions apply to single family or duplex residential solar energy systems:~~

a. **Basic requirements.** ~~Accessory uses shall be limited in size to serve residences or non-residences (whether private, commercial or municipal), including single or multi-unit dwellings, factories, warehouses, retail sales locations, outbuildings and agricultural operations with barns, outbuildings or farm stands.~~

b. **Building permit:** A building permit is required

c. **Site plan:** Site plan review required for systems other than single/duplex family systems

a. ~~This accessory use serves single family or duplex residences situated on the same lot. Both building mounted and freestanding systems are a permitted accessory use in all zoning districts. Only a building permit is required (except under c. below).~~

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**Comment [MS3]:** This is redundant under the new definition

d. **Placement of Freestanding Accessory Solar Systems.**

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i. ~~No part of a freestanding solar energy system may be placed closer to the front property line (and side property line in the case of a corner lot) than the fully enclosed part of the building closest to the street.~~

ii. ~~a freestanding solar energy system that exceeds 12 feet in height (any part of the system), may not be placed closer to the front property line (and side property line in the case of a corner lot) than the fully enclosed part of the building furthest from the street.~~

iii. ~~In no case shall a freestanding system be less than 50 feet from a property boundary.~~

iv. ~~In no case shall a freestanding system that exceeds 12 feet in height be less than 100 feet from a property boundary abutting a designated scenic road.~~

v. ~~Visual buffering shall be required~~

vi. ~~Site plan review required for systems other than single/duplex family systems~~

vii. ~~Special Exception: A proposed system that can not conform with i.to iv. above may be approved by a Special Exception~~

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**Comment [MS4]:** This change addresses most, if not all, of the positioning concerns previously raised and preserves the possibility of seeking a special exception where required

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~~b. Placement. For a freestanding solar energy system, no part of the system may be placed closer to the front property line (and side property line in the case of a corner lot) than the fully enclosed part of the house closest to the street. In addition, for a freestanding solar energy system that exceeds 12 feet in height (any part of the system), no part of the system may be placed closer to the front property line (and side property line in the case of a corner lot) than the fully enclosed part of the house furthest from the street.~~

~~e. Special Exception. A proposed system that does not conform with b. above, may be approved by a special exception.~~

~~e. The Planning Board may require an analysis of potential glare at its discretion.~~

~~5. Multiunit or Nonresidential Solar Energy System accessory use. The following provisions apply to multiunit or nonresidential solar energy systems:~~

~~A building-mounted system is a permitted accessory use in all zoning districts. Only a building permit is required.~~

~~The following standards and procedures apply to freestanding multiunit residential or nonresidential systems:~~

~~a. Site plan review by the Planning Board is required.~~

~~b. No part of the system may be placed closer to the front property line (and side property line in the case of a corner lot) than the part of the fully enclosed principal building closest to the street. In addition, for a system that exceeds 12 feet in height (any part of the system), no part of the system may be placed closer to the front property line (and side property line in the case of a corner lot) than the fully enclosed part of the principal building furthest from the street.~~

~~e. In cases where there is no building or no distinct principal building on the lot or where there are multiple lots, the system shall be set back at least 100 feet from the front property line and buffered from the road.~~

~~d. A proposed system that does not conform with b. or e., above, may be approved by a special exception (separate from the special exception if one is needed for the accessory use).~~

~~e. The Planning Board may require an analysis of potential glare at its discretion.~~

~~6. Principal Use Solar Energy System Standards and Procedures~~

~~a. Site Plan: Site plan review is required for all systems.~~

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b. Basic requirements: Principal use solar systems shall conform to state statutes and regulations (as from time to time amended) related to solar services agreements and shall provide evidence of such to the planning board.

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c. Placement of Principal Solar Energy Systems.

i. Any freestanding system shall be set back at least 100 feet from property lines abutting a public way.

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ii. The system shall be visually buffered from abutting roads and properties in accordance with the Site Plan Regulations.

d. Special Exception. The Zoning Board of Adjustment may grant a special exception in Zones R or RC for Principal Use Solar Energy Systems designed to provide energy to its specific neighborhood and is scaled to meet the projected energy requirements of that neighborhood

e. The Planning Board may require an analysis of potential glare at its discretion.

6. ~~Enterprise Solar Energy System – principal use. This designation refers to a system that is designed to provide electricity to uses off site. The following standards and procedures apply to enterprise solar energy systems.~~

a. ~~Site plan review is required for all systems, including building mounted systems.~~

b. ~~Any freestanding system shall be set back at least 100 feet from the front property line. The system shall be buffered from neighboring roads and properties in accordance with the Site Plan Regulations and as reasonably determined by the Planning Board.~~

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e. ~~The Planning Board may require an analysis of potential glare at its discretion.~~

7. Other provisions. The following additional provisions apply to all solar energy systems.

a. Building permit. A building permit is required for the installation of any system.

b. Setbacks. Every part of a freestanding system, including components elevated above the ground, components that track and move, and necessary accessory equipment that is ground mounted, shall conform to required setbacks for the zoning district.



- c. ~~e.~~ Maximum height. ~~For building-mounted systems, t~~ The maximum height for any part of the system is ten feet above the ridge of the roof or ten feet above the highest part of the roof where there is no ridge. The maximum height for freestanding systems is 25 feet.
- d. Impervious surface. The maximum impervious surface ratio in the Table of Dimensions does not apply to solar energy systems.
- e. Submission requirements. Applicants for projects that require a site plan shall submit all pertinent information, including specifications for the equipment, to the Planning Board, as specified in the Site Plan Regulations. Applicants for a special exception shall submit plans showing all pertinent aspects of the project and all elements specified by the Zoning Board of Adjustment.
- f. Decommissioning. Applicants for freestanding Multiunit Residential, ~~or~~ Nonresidential ~~Solar Energy System and or~~ freestanding ~~Enterprise Principal Use~~ Solar Energy Systems shall submit a plan as part of site plan review for the removal of the structures and reclamation of the site when the system is no longer in use.
- g. Historic District. Additional procedures and standards for proposed solar energy systems located within the Durham Historic District are contained in Article XVII of this ordinance.
- h. Solar easements. Private property owners may establish solar skyspace easements to preserve access to solar energy at their option pursuant to RSAs 477:49, 50, and 51.

- i. ~~j.~~ Review process. The process for review of proposed solar energy systems is specified in Table 175-109 R below. (In case of any conflict between this table and the text of the ordinance or the Table of Uses, the text of the ordinance and the Table of Uses shall prevail.)

ii.

**TABLE 175-109 R - REVIEW PROCESS FOR SOLAR ENERGY SYSTEMS**

<i>Type of use</i>	<i>Building-mounted</i>	<i>Freestanding</i>
<del>Single family or duplex residential — accessory use</del>  <u>Accessory Use</u>	<del>Permitted as accessory use to any single family or duplex residence</del>  <u>Building permit only</u>  <u>Permitted in all zones</u>	<u>Permitted in all zones. Special exception required in CB zone.</u> <u>Site plan review for systems other than single/duplex family systems</u> <del>Permitted as accessory use to any single family or duplex residence</del>

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		<p>Building permit only</p> <p>Special exception if system does not meet placement requirement</p>
<p>Multiunit residential or nonresidential system – accessory use</p>	<p>Permitted as accessory use in all zones</p> <p>Building permit only</p>	<p>Permitted as accessory use in all zones (except for Central Business District)</p> <p>Special exception in CB zone</p> <p>Site plan review</p>
<p>Enterprise solar system – principal use</p> <p><u>Principal Use</u></p>	<p>Permitted use in all Commercial Core and Research-Industry zones</p> <p>Conditional use in R and RC zones</p> <p>Site plan review</p>	<p>Conditional use <del>Use</del> in R and RC (see below) and C</p> <p><u>Coe’s Corner</u> and all Research-Industry zones</p> <p>Permitted use <u>Special Exception</u> in R and RC zones where <del>located on a lot that is in commercial agricultural use</del> <u>system is scaled for neighbor use may be granted</u></p> <p>Site plan review</p>