SOLAR ENERGY SYSTEMS

DRAFT ORDINANCE - Durham, New Hampshire

Revised draft presented for new public hearing at Planning Board meeting on September 12

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

. 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 or heat, including a solar photovoltaic system and 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.

~~Roof- or~~ Building-Mounted Solar Energy System - A solar energy system attached to a roof or other part of a building ~~and completely supported by a building and~~ that does not extend~~ing~~ more than 5 feet beyond the building footprint ~~more than 5 feet~~. The system may include limited accessory equipment that is ground mounted. Electric lines, conduit, transformers or poles that are required to connect a solar energy system to the electrical distribution system are not included in this definition. A single-family or duplex residential solar energy system or a multiunit residential or nonresidential solar energy system that is installed on a carport is considered a roof- or building-mounted solar energy system.

Comment [MD1]: Does this include a storage unit, inverter, etc?

Comment [MD2]: These sound like types of "solar energy systems", which is already defined. Given that these are not referenced in the rest of the ordinance, I'm not sure why the further detail is required.

Comment [MD3]: Removing the word 'roof' from the term makes the ordinance read much more smoothly.

Comment [MD4]: "Limited" how? Maybe a better word than 'accessory'?

Comment [MD5]: I think it's important that we recognize these systems may have overhead lines that get them to the distribution system at the road, and that these cannot be regulated by the setbacks, height limitations, etc. I'm not sure this is the right language.

Comment [MD6]: This was at issue in public hearings. I agree that a definition of carport that does not allow for creative interpretations is called for.

Freestanding Solar Energy System - A ground-mounted solar energy system, including a stationary or tracking system (either single axis or dual axis). ~~An enterprise solar energy system that is installed on a carport is considered a freestanding solar energy system.~~

Single-Family or Duplex Residential Solar Energy System – An accessory use solar energy system designed exclusively for use by the single family or duplex home on which property it is located~~n accessory use that is designed to provide energy for the principal use.~~

Multiunit Residential or Nonresidential Solar Energy System ~~–~~ An accessory use solar energy system designed for use exclusively by a 3-unit or greater residential, or nonresidential building, on which property it is located~~n accessory use that is designed to provide energy for the principal use.~~

Enterprise Solar Energy System – A solar energy system whose principal use is to generate energy for buildings or other uses on a different property from the one in which the system is sited (this does not preclude use of a portion of the energy generated by buildings or facilities on the same site). ~~principal use designed to generate energy for use off site.~~

Shared Solar Energy System – An accessory use solar energy system that generates energy for use ~~serves houses and/or developments situated~~ on two or more separate lots. The system is considered accessory to the property on which it is located~~uses on each of the lots that it serves~~.

. 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.

. 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:

. 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 A.:

8. Roof- or building-mounted solar energy system.

Comment [MD7]: This is confusing. I would put this under the definition of "enterprise solar system" not here.

Comment [MD8]: If 'accessory use' is defined elsewhere in codes, it should be referenced her.

Comment [MD9]: There was a new definition of this, which made it less likely for someone to build a carport solely for the purpose of getting around the ground mounted definition.

Comment [MD10]: I would recommend being very careful about outright prohibiting ground mounted solar in *any district*. Special exceptions can always be made, or denied.

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

9. ~~Roof- or~~ building-mounted solar energy system.

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

7. Freestanding solar energy system.

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

6. Freestanding solar energy system.

. 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~~energy self-sufficiency and sustainability while respecting ~~the aesthetics and the landscape of~~ Durham's ~~and the use of productive~~ scenic vistas and agricultural lands; 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.

3. Applicability. Solar installations that ~~use~~ generate less than one kilowatt of energy and that 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).

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

b. Placement. ~~For a~~No part of 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, no part of ~~for~~ a freestanding solar energy system that exceeds 10 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.

c. Special Exception. A proposed system that does not conform with b. above, may be approved by a special exception ~~provided it is not practical to place the system as specified in b., above~~ (See Section 175-26 Special Exceptions).

5. Multiunit or Nonresidential Solar Energy System (accessory use). This type of solar energy system provides an accessory use ~~serves all uses other than~~ to buildings other than single-family or duplex residences ~~–~~including, but not limited to:
3 or more ~~multiunit~~ unit developments, on-site commercial or industrial uses, other nonresidential uses, mixed use developments,
and shared systems, including ~~systems~~ those serving residential subdivisions.

A ~~roof- or~~ 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 f~~Freestanding multiunit residential or nonresidential systems must comply with the following standards and procedures:~~.~~

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

~~b. The maximum allowed rated nameplate capacity for the system is the~~

Comment [MD11]: The precise terms defined above should be consistent with what is used in this section.

Comment [MD12]: Are in-law units clearly covered by this?

Comment [MD13]: This is a bit gratuitous. Wrap around porches would not fall under this definition.

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Comment [MD14]: This is so loose as to be not worth stating.

Comment [MD15]: What would this be?

~~capacity that is needed to serve the estimated annual on-site requirements of the property.~~

c. 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, no part ~~for~~ of a system that exceeds 10 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.

d. 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.

Comment [MD16]: This has been noted by others as being awkward and open to misinterpretation

Comment [MD17]: What if you have a barn closer to the street than the house, are you still stuck going back as far as the house? What is a 'principal building'?

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e. A proposed system that does not conform with c. or d., above, may be ~~approved~~ allowed by a special exception (separate from the special exception ~~if one is needed~~that may be required for the accessory use.) ~~provided: 1) it is not practical to place the system as specified in c. or d., above; and 2) the system is screened from the road and from neighbors in accordance with a plan submitted by the applicant and approved by the Planning Board.~~

~~f. 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~~ generate electricity ~~to uses~~or thermal energy for off site utilization. The following standards and procedures apply to enterprise solar energy systems.

a. Site plan review and approval is required ~~for~~ prior to the installation of all systems, including ~~roof- or~~ building-mounted systems.

b. The system shall ~~be set back 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.

~~b. The applicant shall submit an analysis about potential glare at the Planning Board's request.~~

d. Where a solar energy system is allowed by conditional use, the conditional use permit shall be granted only if the Planning Board determines that: a) the proposal conforms to the general conditional use criteria contained in Article VII; and b) the location, topography, site conditions, design, and proposed

Comment [MD18]: It seems to me that if it is already buffered by landscape or natural growth that the 100' requirement is just silly. Can't we leave this to the discretion of the PB? Running electrical line 100' to the road / interconnection spot will add potentially unnecessary expense (and wasted resources) to a project, and dampen interest.

Think about Town system in Lee – it's close to the road, but you don't see it driving by because the trees block the view.

Comment [MD19]: Included below…

Comment [MD20]: I recognize that there should be some limit here, but I think an arbitrary 100' setback is unnecessarily restrictive.

Can this be framed as the front property line requirement is above? That 100' is the standard unless there are special circumstances (like it's already buffered, it's out in the middle of nowhere, etc.)?

Comment [MD21]: Reference?

Comment [MD22]: Included below

screening for the proposed project ~~are~~are reasonable and do not unduly interfere with the use or enjoyment of the community, abutters and along scenic roads and gateways. ~~such that it will not be prominently visible from Bay Road, Bennett Road, Durham Point Road, Mast Road, or Packers Falls Road.~~

Comment [MD23]: There must be some standard planning language that could be used here.

Comment [MD24]: I am very uncomfortable including specific roads (and not others) in a zoning ordinance. If we want to signal a higher bar for certain parts of town, then include that the PB will be particularly sensitive to systems proposed along scenic roadways and gateways, but to outright disallow them sends a very chilling message to property owners and developers

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

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

Comment [MD25]: This has already been covered.

b. Setbacks. Every part of a freestanding system, including components elevated above the ground and ~~moving~~ components that track or move, shall conform to required setbacks for the zoning district.

Comment [MD26]: Doesn't this potentially conflict with the specifics of setbacks in this ordinance? Which prevails?

c. Maximum Height. For ~~roof- or~~ building-mounted systems located in any of the four residential zoning districts, 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. For ~~roof- or~~ building-mounted systems not located in one of the residential zoning districts, there is no height limit. 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 review shall submit all pertinent information to the Planning Board as specified in the Site Plan Regulations and all elements specified by the Zoning Board of Adjustment.
, including

- ~~specifications for the equipment~~ to be installed, ~~to the Planning Board, as specified in the Site Plan Regulations.~~
- Distance from road, including justification for placing closer than 100' if such placement is proposed
- Siting and description of interconnection to the electrical grid and/or on-site storage
- Screening and/or buffering plans
- Description of potential glare visible from roadways or abutting properties, and plan to address, if present
- Intended utilization of the energy generated and whether the energy shall be used by properties within Durham
- Decommissioning Plan for freestanding systems that serve more than two residential units,
- Any other relevant site and project specific details regarding the removal of the structures and reclamation of the site when the system is no longer in use.

~~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 freestanding Enterprise 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.

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Comment [MD27]: For Enterprise systems, I wonder if we want to encourage the use of energy generated by Enterprise systems by Durham residents and businesses, rather than simply selling it as a commodity like hydro. Not sure if we can / want to interfere in that way or not, but it's a thought.

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h. 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.

i. 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.

Comment [MD28]: 'Solar skyspace' should be defined in the definitions section – is there a State definition?

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

Type of use	Roof- or Building-mounted	Freestanding
Single family or duplex residential system (accessory use)	Permitted as accessory use to any single family or duplex residence Building permit only	Permitted as accessory use to any single family or duplex residence Building permit only
Multiunit residential or nonresidential system (accessory use) including shared systems	Permitted in all zones Building permit only	Special exception if system does not meet placement requirement Permitted in all commercial core and research-industry zones (except for Central Business District, below)

Special exception in CB, R, RA, RB, and RC zones

Site plan review

Enterprise solar system (principal use)

Permitted use in R, RC, and all Commercial Core and Research-Industry zones

Site plan review

Conditional use in R, RC, all Commercial Core zones except for CB, and all Research-Industry zones

Site plan review