City of Biddeford
Mayor's Sustainability Committee

July 15, 2024 at 5:30 PM
City Hall Second Floor Conference Room & Zoom

Join Zoom Meeting Online
Or call in by phone: +1 312 626 6799
Meeting ID:
Passcode:

1. Discussion/Review

1.a

1. Update – EPA grant by UNE and HOB - Will

1.b Update – New ordinance for Sustainability Commission

1.c

1. Discussion – New Solar Ordinance

Resources:

1. Southern Maine Planning and Development Commission's Solar Development page:

Solar Development - Southern Maine Planning and Development Commission (smpdc.org)

1. Ordinances from other towns – see agenda packet
    1. Fryeburg
    2. South Portland
    3. Sanford

1. Maine Audubon's Model Site Plan Regulations (link below and in packet)

ModelSolarOrdinnce-Feb2020-FINAL.pdf (maineaudubon.org)

1. Other Things to Consider:
    1. Allowing in locations such as the City Dump and unused gravel pits.
    2. Plans should begin with an environmental impact (wetlands identification threatened / endangered species, steep slopes, etc.)

3. Visual impacts (screening etc.)
4. Setbacks (particularly from roadways / developed properties).

2. Adjourn

use marijuana operation that is the subject of such approval. Furthermore, by accepting a permit issued pursuant to this ordinance, all adult use marijuana operators, agree to indemnify, defend and hold harmless the Town, its officers, elected officials, employees, volunteers and agents, insurers and self- insurance pool from and against all liabilities of any kind that result from any arrest or prosecution of business owners, operators, employees, clients or customers for a violation of federal, state or local laws and regulations. This obligation to indemnify, defend and hold harmless shall include the obligation to reimburse the party so indemnified, defended and held harmless for any and all attorney's fees reasonably incurred by that party in defense of such liabilities, claims and demands.

A.A. Solar Energy Systems

1. Purposes:

    a. Solar energy is a local, renewable energy resource that can reduce fossil fuel dependence and emissions. Energy generated from Solar Energy Systems can be used to offset energy demand on the utility grid, with benefits for system owners and electricity consumers.

    b. The use of solar energy for the purpose of providing electricity and energy for heating and or cooling is an important part of the Town of Fryeburg's sustainability goals.

    c. The standards herein enable the accommodation of Solar Energy Systems in appropriate locations and in a manner that protects the public health, safety, and welfare while still allowing the quiet enjoyment of property and supporting the goals of the Comprehensive Plan, including goals related to natural resources and historical and archeological preservation.

2. Applicability: Notwithstanding the provisions of 1 M.R.S.A. Section 302 or any other law to the contrary, the requirements of this Section 17.AA shall apply to (a) all Roof-Mounted Solar Energy Systems installed on or any time after the date that the legislative body of the Town adopted this Section 17.AA, and (b) all proceedings and applications for the construction or installation of any other Solar Energy Systems (including any expansion, upgrade, modification, or structural change that materially alters the size, placement, or output of such systems) that are pending before any municipal reviewing authority on or any time after the date that the legislative body of the Town adopted this Section 17.AA.

3. Permitting Requirements:

    a. Roof-Mounted Solar Energy Systems and Small-Scale Solar Energy Systems must comply with the Dimensional Requirements applicable to structures within the zoning district in which such systems are to be located and the standards in Section 16 of this Ordinance. Small-Scale Solar Energy Systems must also comply with the standards in Section 17.AA.5 of this Ordinance. Roof-Mounted Solar Energy Systems and Small-Scale Solar Energy Systems must obtain a Building Permit from the Code Enforcement Officer in accordance with the procedures set forth in Section 2.C of this Ordinance.

b. Medium-Scale Solar Energy Systems and Large-Scale Solar Energy Systems must obtain Land Use Authorization from the Planning Board in accordance with the procedures set forth in Section 2.F of this Ordinance.

4. Additional Application Submissions Required for Medium-Scale Solar Energy Systems and Large-Scale Solar Energy Systems:

   An application for Land Use Authorization for a Medium-Scale Solar Energy System or a Large-Scale Solar Energy System must be submitted in accordance with Section 2.D of this Ordinance. In addition to the submission requirements in Section 2.D, the applicant must submit the following:

   a. Written confirmation from the public utility to which the Solar Energy System will be connected confirming that the solar operator has conditional or final approval to interconnect the Solar Energy System to the utility grid.

   b. Evidence of financial capacity to construct, operate, and decommission the Solar Energy System.

   c. Erosion and sedimentation control narrative and plans with details.

   d. Site plans showing all proposed construction and alteration of the project site, including changes to the landscape of the Solar Land Area, filling, grading, earthmoving, vegetation clearing and planting, screening, fencing, Solar Energy System components, utilities (above and/or below ground), and all other aspects of the project.

   e. Site plans showing water bodies, wetlands, flood hazard areas, and vernal pools.

   f. A description of the major components of the Solar Energy System (including arrays) proposed to be used, including manufacturers' specifications and cut sheets if available.

   g. A landscaping plan, prepared by a licensed forester, landscape architect, or arborist, demonstrating compliance with all applicable landscaping and vegetated buffering requirements. At minimum, the landscaping plan must specify the locations, elevations, and height above finished grade of all vegetation, berms and plantings, and must identify the plant species and other materials that will comprise the elements used to establish any vegetated buffers and substantially screen the Solar Energy System from view from abutting residential properties, public roads, and Public Vantage Points.

   h. A long-term operations and maintenance plan providing for ongoing monitoring and inspections of all site improvements. The plan must provide a method for maintaining sufficient financial resources for performing ongoing maintenance and repair of the Solar Energy System.

i. A proposed decommissioning plan for the removal of the Solar Energy System, disposal of system components, and stabilization of the site, which meets the requirements in Section 17.AA.8 of this Ordinance, and a written statement of the applicant's intent concerning the following:

i. Physical removal of any Solar Energy System components, structures, foundations, supports, fencing, or security barriers from the site.

ii. Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal laws and rules.

iii. Stabilization or re-vegetation of the site as necessary to minimize erosion and return the site to substantially its pre-construction state.

j. A description of any proposed dual-use or co-location of the property, including but not limited to agrivoltaics. If no dual-use is proposed or intended on the property, an explanation as to why such dual-use or co-location is not practicable.

k. A visual impact assessment prepared by a landscape architect or other professional with expertise in evaluating visual impacts, which identifies the visual impacts of the Solar Energy System on any Public Vantage Point within a one-mile radius of the project area, and on abutting properties. At minimum, the assessment must include a line-of-sight profile analysis that illustrates what is visible and what is obstructed along a straight line running from the Solar Energy System and each Public Vantage Point. The Planning Board may require additional visual impact assessments, including digital viewshed maps, if it determines in its sole discretion that such assessments are necessary for the Planning Board to evaluate the Solar Energy System's compliance with the scenic impact standards in Section 17.AA.6.f of this Ordinance.

5. Additional Standards for Small-Scale, Medium-Scale, and Large-Scale Solar Energy Systems:

In addition to the standards in Section 16, a Small-Scale, Medium-Scale, or Large-Scale Solar Energy System must comply with the following standards:

a. The Solar Energy System shall be less than 25 feet in Height.

b. The Solar Energy System shall be operated and located such that no disruptive electromagnetic or radio frequency interference with signal transmission or reception is caused beyond the property lines of the site.

c. The Solar Energy System shall be located and designed to avoid, minimize, or mitigate any glare onto abutting properties or roadways.

6. Additional Standards for Medium-Scale and Large-Scale Solar Energy Systems:

In addition to the standards in Section 16 and Section 17.AA.5, a Medium-Scale or Large-Scale Solar Energy System must comply with the following standards:

a. Minimum Setbacks: The following minimum setback requirements must be met, regardless of the zoning district in which the Solar Energy System is located,

unless the minimum setback requirement in the applicable zoning district is more restrictive, in which case the more restrictive requirement shall apply:

Front Lot Line	75 feet
Side and Rear Lot Line	75 feet
Street Right-of-Way	100 feet

b. Wildlife Habitat: The Solar Energy System shall have no undue adverse effect on any portion of the property designated by the Maine Department of Inland Fisheries and Wildlife as Rare, Threatened, or Endangered Wildlife, Essential Wildlife Habitat, or Significant Wildlife Habitat. The applicant shall assess the potential impacts of the Solar Energy System on any such designated species or habitat, including any adjacent areas that are important to the maintenance of the affected species or habitat, and shall take measures to avoid, minimize, or mitigate impacts of the Solar Energy System on the habitat and the species that the area supports. The Planning Board may require the applicant to consult with the Maine Department of Inland Fisheries and Wildlife or a wildlife biologist preapproved by the Board in conducting such an assessment.

c. Natural Areas: The Solar Energy System shall have no undue adverse effect on any portion of the property designated as a unique natural area or a Rare or Exemplary Plant and Natural Community in the Town's Comprehensive Plan or by the Maine Natural Areas Program. The applicant shall assess the potential impacts of the Solar Energy System on any such designated natural area or community, including any adjacent areas that are important to the maintenance of the affected area or community, and shall take measures to avoid, minimize, or mitigate impacts of the Solar Energy System on the natural area or community. The Planning Board may require the applicant to consult with the Maine Natural Areas Program in conducting such an assessment.

d. Historic or Archaeological Resources: The Solar Energy System shall have no undue adverse effect on any portion of the property that has been identified as containing a significant historic or archaeological resource in the Town's Comprehensive Plan or on the National Register of Historic Places, or is considered by the Maine Historic Preservation Commission or other pertinent authority as likely to contain a significant historic or archaeological resource. The applicant shall assess the potential impacts of the Solar Energy System on any such resource, including any adjacent areas that are important to the preservation of the resource, and shall take measures to protect these resources, including but not limited to, modification of the proposed location and design of the Solar Energy System, timing of construction, limiting the extent of excavation, physical or legal protection, or by archaeological excavation or mitigation. The Planning Board may require the applicant to consult with the Maine Historic Preservation Commission in conducting such an assessment.

e. Agricultural Resources: The Solar Energy System shall have no undue adverse effect on any portion of the property containing prime agricultural soils or soils of statewide importance. The applicant shall assess the potential impacts of the Solar Energy System on any such soils, and shall take measures to avoid or minimize impacts to such soils. The Planning Board may require the applicant to consult

with the Department of Agriculture, Conservation, and Forestry, Agricultural Resource Development Division, in conducting such an assessment. No topsoil or prime agricultural soil shall be removed from the site for installation of the Solar Energy System. All stockpiled topsoil shall be retained on site and reused in the landscaping plan for the site.

f. Revegetation: Any disturbed ground cover on the site shall be revegetated with pollinator friendly, native, and non-invasive vegetation.

g. The Solar Energy System must be located and designed for minimal visual impact on the surrounding area, particularly when viewed from abutting residential properties or any Public Vantage Point.

h. A vegetated buffer that is at least half the width of the minimum setback requirement in Section 17.AA.6.a of this Ordinance shall be maintained along any property boundary line of a Solar Energy System that abuts a residential dwelling or a public road, except where necessary to accommodate a driveway entrance to the site. Existing vegetation must be used to the greatest practical extent. If there is insufficient existing vegetation to create a vegetated buffer, the applicant shall plant and maintain native species of conifers and evergreens to adequately screen the Solar Energy System from view.

i. Security Fencing: All components of the Solar Energy System, excepting overhead utility and communication lines and poles, shall be completely enclosed by a minimum 6-foot-high fence. The fence shall be elevated an minimum of 6 inches above the ground to accommodate crossings by small terrestrial animals. Functional alternatives to chain-link style fencing is encouraged.

j. Utility Connections: All on-site utility transmission lines and piping associated with the Solar Energy System shall be placed underground to the greatest extent practicable. The Planning Board may waive this requirement if the applicant can demonstrate that satisfying this requirement is not practicable based on requirements of the utility provider or specific site conditions.

k. Operations and Maintenance: The applicant must provide for the long-term operation of the Solar Energy System and maintenance of the Solar Land Area, including ensuring that vegetation buffers are maintained, inspections are performed as needed, and the site is accessible to emergency responders in the event of an emergency.

7. Additional Performance Standards for Large-Scale Solar Energy Facilities:

   a. Greenhouse Gas Assessment: The Large-Scale Solar Energy System shall not result in a net increase of greenhouse gas emissions over a 20-year period. The Planning Board may request an independent greenhouse gas assessment including an analysis of on-site, upstream, and downstream emissions from the project.

8. Post-Approval Requirement for Medium-Scale Solar Energy Systems and Large-Scale Solar Energy Systems: Prior to the start of construction of a Medium-Scale Solar Energy System or Large-Scale Solar Energy System, the permit holder must submit to the Code Enforcement Officer a decommissioning plan and financial assurance approved by the Maine Department of Environmental Protection, in accordance with the requirements of

35-A M.R.S.A. Sections 3491-3496, as may be amended, for all costs associated with decommissioning the Solar Energy System.

9. Post-Construction Requirements for Medium-Scale Solar Energy Systems and Large-Scale Solar Energy Systems:

After completion of construction and prior to commercial operation of a permitted Medium-Scale Solar Energy System or Large-Scale Solar Energy System, the permit holder must:

a. Submit to the Code Enforcement Officer as-built drawings prepared by a Maine licensed professional land surveyor or engineer. The as-built drawings shall include the actual locations of the Solar Energy System and its components, any structures and their components, above and underground utilities, roads, swales, ditches, detention/retention facilities, areas of filling and grading, vegetated buffers, fencing, land and landscaping alterations, and any other infrastructure and facilities, all as actually constructed on the site. The as-built drawings must be accompanied by a letter signed by the surveyor or engineer certifying that the Solar Energy System had been constructed in accordance with all Planning Board approvals, including any conditions of approval and any accompanying plans and specifications.

d. Provide a written manual to the Fryeburg Fire Department and Code Enforcement Officer, which provides clear response information and instructions, including lock box details and disconnection locations necessary for a fire/emergency response at the site.

§ 280-15-12. Solar energy system. [Added 3-7-2017 by Order No. 17-31.07; amended 4-7-2020 by Order No. 19-772-01]

A. Purpose. The purpose of these provisions is to regulate a solar energy system, allow the City to be informed of the placement of a solar energy system, preserve and protect public health and safety, allow for orderly development of land, and protect property values.

B. Standards.

(1) A residential solar system (RSS) shall:

(a) Comply with the setback and height requirements of the zoning district in which the system is to be installed.

(b) Comply with the provisions of all applicable requirements of the City's building, electrical, fire, and other health safety and technical codes, including but not limited to Chapters 90: Building and Building Regulation and 128: Fire Prevention.

(c) Be installed so as not to cause any wire or wireless communication signal disturbance.

(d) Be sited to prevent glare onto abutting properties, structures, and roadways.

(e) Be removed if it has not produced power for a period of twelve (12) consecutive months.

(2) Standards. A commercial solar system (CSS) and utility solar system (USS) shall:

(a) Comply with the requirements of Article XVI: Site Plan Review.

(b) Comply with the setback and height requirements of the zoning district in which the system is to be installed; however, the Planning Board may require additional setbacks and buffers from existing abutting residential uses to minimize impacts from the project.

(c) Comply with the provisions of all applicable requirements of the City's building, electrical, fire, and other health safety and technical codes, including but not limited to Chapters 90: Building and Building Regulation and 128: Fire Prevention.

(d) Comply with the industrial performance standards specified in § 280-15-3.

(e) Ground-mounted system.

[1] Secure all ground-mounted electrical and control equipment to prevent unauthorized access. The system shall be enclosed within a minimum seven (7) foot tall fence with locking gate and Knox-Box®

to provide emergency access. The type of fence shall be appropriate for security, screening, and/or other purposes and shall be similar to and/or compatible with the style of fences used within one-thousand (1,000) feet of the property boundary.

[2] A ground-mounted system in the Rural Residential Zone (RR) shall comply with the standards specified in § 280-15-12B(2)(l).

[3] A ground-mounted system in the Residential Development Overlay Zone shall comply with the standards specified in § 280-15-12B(2)(m). **[Added 5-3-2022 by Order No. 21-494-01]**

(f) Install all electrical wire and utility connections, except for transformers and controls, underground to the greatest practical extent. The Planning Board shall consider prohibitive costs and site limitations if asked to waive this standard.

(g) Limit exterior lighting to that required for safety and operational purposes.

(h) All signs shall meet the specifications of § 280-14-13.

(i) Be appropriate to the surroundings and minimize environmental and visual impacts on adjoining properties, including:

[1] Screening ground-mounted installations from view by abutting residential properties, using vegetation, topography, and/or fencing.

[2] Using a manufactured finish appropriate to and compatible with the surroundings, with reflective characteristics that minimize negative visual impacts to the greatest practical extent.

(j) Shall plant native, non-invasive groundcover, which is low-maintenance, drought resistant, and non-fertilizer dependent, under and between rows of solar panels to prevent soil erosion. **[Added 5-3-2022 by Order No. 21-494-01[1]]**

(k) Be removed if it has not produced power for a period of twelve (12) consecutive months. In the event of a natural disaster, act of violence, or other event which results in the absence of electrical generation for twelve (12) months, by the end of the twelfth (12th) month of nonoperation the applicant shall demonstrate to the City that the project shall be substantially operational and producing electricity within twenty-four (24) months of the event. If such demonstration is not made to the City's satisfaction, the decommissioning shall be initiated eighteen (18) months after the event.

(l) A performance guarantee in compliance with Article XVII shall be

1. **Editor's Note: This order also redesignated former Subsection B(2)(j) through (l) as Subsection B(2)(k) through (m), respectively.**

provided prior to initiating construction. The performance guarantee shall provide adequate funds to cover the total cost of decommissioning. Every five (5) years after the start of construction, updated proof of the cost of decommissioning shall be submitted to the City Engineer. If the amount of the current performance guarantee is inadequate to cover the total cost of decommissioning, the applicant shall provide a new performance guarantee to the Planning Department in an amount which is adequate to cover the total cost of decommissioning.

(m) A USS in the Rural Residential Zone (RR) shall require conditional use approval by the Planning Board in accordance with Articles XIII and XVI and the following standards:

[1] Shall not be sited on active farmland.

[2] Shall minimize impacts on active farmland including, but not limited to, fencing, use of waterways, obstructions created by placement of structures and/or overhead collection lines, division of larger fields into smaller or irregularly shaped fields, need for extensive areas of cut and fill, among other factors that create a burden or unreasonable impact on active farming activities.

[3] Shall encourage siting on unproductive land and previously disturbed land to the greatest extent possible. All topsoil disturbed during construction shall be stockpiled and returned to the site.

[4] Shall locate access roads and overhead collection lines along the edge of agricultural fields in areas next to field boundaries and hedgerows and in nonagricultural portions of the site. The width of access roads shall be no larger than that required to meet the fire code. Access roads that are proposed to be constructed through agricultural fields shall be level with the adjacent field surfaces, where possible.

[5] Shall demonstrate how the site shall be restored to its original state, including surface grade, soil, and vegetation, as part of removal of infrastructure and decommissioning.[2]

(n) A USS in the Residential Development Overlay Zone (RDO) shall require conditional use approval by the Planning Board in accordance with Articles XIII and XVI and the following standards: **[Added 11-23-2021 by Order No. 21-494-01; amended 5-3-2022 by Order No. 21-494-01]**

[1] Shall not be sited on properties where public sewer and water services can be extended and a compact pattern of residential

2. Editor's Note: Former Subsection B(2)(m)[5], which required the planting of certain kinds of plants between rows of solar panels, was repealed 5-3-2022 by Order No. 21-494-01. For current provisions, see Subsection B(2)(j) of this section. Order No. 21-494-01 also renumbered former Subsection B(2)(m)[6] as Subsection B(2)(m)[5].

development can feasibly be developed in conformance with the purpose of the RDO Zone.

[2] Shall minimize impacts on nearby existing residential development and/or residential zones, including, but not limited to siting, fences, buffers, and/or screens.

[3] Shall locate access roads and overhead collection lines to minimize impacts on nearby existing residential development and/or residential zones.

[4] Shall demonstrate that stormwater, erosion control, and landscape plans maintain water quality and minimize export of sediment, phosphorus, and other contaminants from the site in support of the City's efforts to restore Goodall Brook by protecting the headwaters of Goodall Brook and vulnerable water bodies in its watershed.

ARTICLE XVIII. SOLAR ENERGY SYSTEMS

Sec. 27-1801. Purpose.

(a) Solar energy is a renewable and non-polluting energy resource that can prevent fossil fuel emissions and reduce energy load. Energy generated from solar energy systems can be used to offset energy demand on the grid where excess solar power is generated.

(b) The use of solar energy equipment for the purpose of providing electricity and energy for heating and/or cooling is a priority and is a necessary component of the City's current and long-term sustainability agenda.

(c) The standards that follow enable the accommodation of solar energy systems and equipment in a safe manner with minimal impacts on the quiet enjoyment of property.

Sec. 27-1802. Definitions.

The following definitions pertain to terms used in this Article:

Building-Integrated Photovoltaic (BIPV) Systems. A solar energy system that consists of integrating photovoltaic modules into the building structure, such as the roof or the façade and which does not alter the relief of the roof.

Electricity Generation (production, output). The amount of electric energy produced by transforming other forms of energy, commonly expressed in kilowatt-hours (kWh) or megawatt-hours (MWh).

Electrical Equipment. Any device associated with a solar energy system, such as an outdoor electrical unit/control box, that transfers the energy from the solar energy system to the intended location.

Mounting. The manner in which a solar PV system is affixed to the roof or ground (i.e., roof mount, ground mount, pole mount).

Photovoltaic (PV) System. A solar energy system that produces electricity by the use of semiconductor devices, called photovoltaic cells, which generate electricity when exposed to sunlight. A PV system may be roof-mounted, ground-mounted, or pole-mounted.

Pole-Mount System. A solar energy system that is directly installed on specialized solar racking systems, which are attached to pole, which is anchored and firmly affixed to a foundation in the ground, and wired underground to an attachment point at the building's meter. Pole-mounted systems can be designed to track the sun (with single-axis or dual-axis tracking motors) and maximize solar output throughout the year.

Power. The rate at which work is performed (the rate of producing, transferring, or using energy). Power is measured in Watts (W), kilowatts (kW), Megawatts (MW), etc.

Solar Array. Multiple solar panels combined together to create one system.

Solar Collector. A solar PV cell, panel, or array, or solar thermal collector device, that relies upon solar radiation as an energy source for the generation electricity or transfer of stored heat.

Solar Energy System. See Sec. 27-201.

Solar Energy System, Active. See Sec. 27-201.

Solar Energy System, Grid-Intertie. A photovoltaic system that is connected to an electric circuit served by an electric utility.

Solar Energy System, Ground-Mounted. See Sec. 27-201.

Solar Energy System, Large-Scale. See Sec. 27-201.

Solar Energy System, Medium-Scale. See Sec. 27-201.

Solar Energy System, Roof-Mounted. See Sec. 27-201.

Solar Energy System, Small-Scale. See Sec. 27-201.

Solar Glare: The potential for solar panels to reflect sunlight, with an intensity sufficient to cause annoyance, discomfort, or loss in visual performance and visibility.

Solar Photovoltaic (Solar PV) System. Solar systems consisting of photovoltaic cells, made with semiconducting materials, that produce electricity (in the form of direct current (DC)) when they are exposed to sunlight. A typical PV system consist of PV panels (or modules) that combine to form an array; other system components may include mountain racks and hardware, wiring for electrical connections, power conditioning equipment, such as an inverter and/or batteries.

Solar Panel (or module). A device for the direct conversion of sunlight into useable solar energy (including electricity or heat).

Solar Thermal System (Solar Hot Water or Solar Heating Systems). A solar energy system that directly heats water or other liquid, or air, using sunlight.

Tilt. The angle of the solar panels and/or solar collector relative to horizontal. The optimal tilt to maximize solar production is perpendicular, or 90 degrees, to the sun's rays at true solar noon. True solar noon is when the sun is at its highest during its daily east-west path across the sky (this is also known as 0° Azimuth). Solar energy systems can be manually or automatically adjusted throughout the year. Alternatively, fixed-tilt systems remain at a static tilt year-round

Sec. 27-1803. Applicability.

(a) Notwithstanding the provisions of 1 M.R.S.A. § 302 or any other law to the contrary, the requirements of this Article shall apply to all roof-mounted,

small-, medium-, and large-scale ground-mounted solar energy systems modified or installed after January 1, 2017.

(b) All solar energy systems shall be designed, erected and installed in accordance with all applicable codes, regulations and standards.

(c) Any upgrade, modification or structural change that materially alters the size, placement or output of an existing solar energy system shall comply with the provisions of this Article.

(d) For purposes of this Article, the City's zoning districts are categorized as follows:

(1) ***Residential Zoning Districts***. Residential zoning districts include: RF, AA, A, G, VR, RT, A-1, S-1, G-1, G-2, G-3, and G-4.

(2) ***Mixed-Use Zoning Districts***. Mixed-use zoning districts include: LB, VC, VCW, SP, CS, PO, C, I, MSCC, VE, BC, and MCC.

(3) ***Non-Residential Commercial/Industrial Zoning Districts***. Non-residential commercial/industrial districts include: CG, CCRT, CCR, S, IL, INR, CAZ, CPCCR, INR-MSW-1.

Sec. 27-1804. Permitting.

(a) No solar energy system or device shall be installed or operated in the City except in compliance with this Article Ordinance.

(b) Solar-thermal, building-integrated, roof-mounted, and small-scale ground-mounted solar energy systems are permitted in all zoning districts subject to the dimensional standards of Sec. 27-1805. All such systems must obtain building permits.

(c) Medium- and large-scale ground-mounted solar energy systems are permitted or special exception uses in some of the City's zoning districts, as found in the regulations for the individual zoning districts, subject to the requirements of this Article.

Sec. 27-1805. Dimensional Standards.

(a) Height

(1) In residential zoning districts, building integrated and roof-mounted solar energy systems shall be included in the building height measurement, and the height of the building shall not exceed the maximum building height. In mixed-use and non-residential commercial/industrial zones, notwithstanding and other provision of this ordinance to the contrary, building integrated and roof-mounted solar energy systems shall not be included in the building height measurement.

(2) Ground-mounted solar energy systems in residential and mixed-use zoning districts shall not exceed twelve (12) feet in height when oriented at maximum tilt, except that the maximum height is twenty (20) feet for systems set back at least thirty (30) feet from any property line. Ground-mounted solar energy systems in all other zoning districts shall conform to the building height requirements of the zoning districts in which they are located.

(b) Setbacks for Ground-Mounted Solar Energy Systems

Notwithstanding any other provision in this Ordinance to the contrary, the setbacks for ground-mounted solar energy systems shall be as follows:

Minimum front yard: In residential zoning districts, one hundred (100) feet. In mixed use and non-residential zoning districts, whatever the front yard setback is for that zoning district, but in no event less than thirty (30) feet.

Minimum rear yard: Whatever the rear yard setback is for accessory buildings in that zoning district.

Minimum side yard: Thirty (30) feet.

(c) Lot Coverage

Only the paved or otherwise impervious areas of sites on which ground-mounted solar energy systems are installed shall be counted in the lot coverage calculation.

(Ord. No. 14 16/17, 3/6/17 [Fiscal Note: Less than $1,000])

Sec. 27-1806. Standards for Roof-Mounted and Small-Scale Ground-Mounted Solar Energy Systems.

(a) Roof-mounted and building-mounted solar energy systems and equipment shall be permitted only if they are determined by the Code Enforcement Officer, with input from the City Engineer and the Fire Chief, not to present any unreasonable safety risks, including, but not limited to, the following:

(1) Weight load;
(2) Wind resistance;
(3) Ingress or egress in the event of fire or other emergency; and
(4) Proximity of a ground-mounted system relative to buildings.

(b) All solar energy system installations shall be installed in compliance with the photovoltaic systems standards of the latest edition of National Fire Protection Association (NFPA) 1, Fire Prevention Code.

(c) All wiring shall be installed in compliance with the photovoltaic systems standards of the latest edition of the National Electrical Code (NFPA 70).

(d) Prior to operation, electrical connections must be inspected and approved by the Electrical Inspector.

(e) Any connection to the public utility grid must be inspected and approved by the appropriate public utility.

(f) Notwithstanding any other provision of this Article to the contrary, any solar energy system installation on non-residential or multi-family properties completed prior to January 1, 2017 shall be required to comply with the photovoltaic system "marking" requirements contained in the latest edition of NFPA 1, Fire Prevention Code, on or before April 1, 2018. The Code Enforcement Officer shall endeavor to notify all affected property owners of this requirement on or before April 1, 2017, but failure of an affected property owner to receive such notice shall not relieve the property owner from compliance with this subsection.

(g) If a solar collector ceases to perform its originally intended function for more than 12 consecutive months, the property owner shall remove the collector, mount and associated equipment by no later than 90 days after the end of the twelve-month period.

(h) Each solar energy installation shall be maintained as necessary to ensure that it is operating safely and as designed over its useful lifetime.

Sec. 27-1807. Additional Standards for Medium- and Large-Scale Ground-Mounted Solar Energy Systems.

In addition to the standards in Sec. 27-1806, medium- and large-scale ground-mounted solar energy systems shall comply with the following:

(a) 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.

(b) Safety – The solar system owner shall provide a copy of the site plan review application to the Fire Chief for review and comment. The Fire Chief shall base any recommendation for approval or denial of the application upon review of the fire safety of the proposed system.

(c) 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.

(d) Glare - Solar panels are designed to absorb (not reflect) sunlight; and, as such, solar panels are generally less reflective than other varnished or glass exterior housing pieces. However, solar panel placement should be prioritized to minimize or negate any solar glare onto nearby properties or roadways, to the extent practical.

(e) Additional Standards for Large-Scale Solar Energy Systems

(1) Operations & Maintenance Plan – the project proponent shall submit a plan for the operation and maintenance of the large-scale ground-

mounted solar energy system, which shall include measures for maintaining safe access to the installation as well as other general procedures for operational maintenance of the installation.

(2) Signage – Signs on large-scale ground-mounted solar energy systems shall comply with the regulations in Sec. 27-1561 *et. seq.* of this Chapter. A sign meeting those regulations shall be required to identify the owner and provide a 24-hour emergency contact phone number.

(3) Emergency Services – The large-scale ground-mounted solar energy system owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to the Fire Chief. Upon request the owner or operator shall cooperate with the Fire Department in developing an emergency response plan. All means of shutting down the system shall be clearly marked. The owner or operator shall provide to the Code Enforcement Officer the name and contact information of a responsible person for public inquiries throughout the life of the installation.

(4) Installation Conditions – The large-scale ground-mounted 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 Fire Chief. The owner or operator shall be responsible for the cost of maintaining the solar energy system and any access road(s), unless accepted as a public way.

(5) Removal – Any large-scale ground-mounted solar energy system which has reached the end of its useful life or has been abandoned consistent with this ordinance shall be removed. The owner or operator shall physically remove the installation no more than 150 days after the date of discontinued operations. The owner or operator shall notify the Code Enforcement Officer by certified mail of the proposed date of discontinued operations and plans for removal. Decommissioning shall consist of:

(a) Physical removal of all solar energy systems, structures, equipment, security barriers and transmission lines from the site.

(b) Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.

(c) Stabilization or re-vegetation of the site as necessary to minimize erosion. The Code Enforcement Officer may allow the owner or operator to leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation.

(6) Abandonment, Guarantee.

(a) Absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, a large-scale ground-mounted solar energy system shall be considered abandoned when it fails to operate for more than one year

without having first obtained the written consent of the Code Enforcement Officer.

(b) At the time of approval, the applicant for a new large-scale ground-mounted solar energy system shall submit to the City an evergreen performance guarantee, to be approved by Corporation Counsel, in the amount of 150% of the estimated demolition cost of the system, such cost to be determined by the City Engineer or other duly designated person. The owner may apply to the Planning Board for release of the guarantee at such time that it or its assigns remove the system and associated abandoned structures, and such completed removal is found to be satisfactory by the City Engineer.

(c) If the owner or operator of the solar energy system fails to remove the installation in accordance with the requirements of this section within 150 days of abandonment or the proposed date of decommissioning, the City retains the right to use the performance guarantee and all other available means to cause an abandoned, hazardous, or decommissioned large-scale ground-mounted solar energy system to be removed.

(Ord. No. 12-16/17, 2/6/17 [Fiscal Note: Less than $1,000])

Secs. 27-1808 – 27-1900. Reserved.

Model Site Plan Regulations and Conditional Use Permits to Support Solar Energy Systems in Maine Municipalities

This document describes and models two land-use tools Maine municipalities may use to permit small-, medium-, and large-scale solar energy systems, including both ground-mounted and roof-mounted solar installations. The purpose of this document is to assist Maine municipalities in supporting development of solar energy systems in ways that address the needs of their community. Communities will need to carefully consider how model language may be modified to suit local conditions and where it should be inserted into an existing zoning ordinance, if applicable. Further, it is highly recommended that any language adapted from these models be reviewed by municipal counsel prior to adoption.

Selecting a Land-Use Tool

Several land-use tools are available to accommodate solar energy systems, including overlay zones, floating zones, conditional-use permits, and site plan regulations. The two land-use tools addressed here, site plan regulations and conditional-use permits, were selected to respond to the variations in planning resources across Maine municipalities. Site-plan regulation may be more appropriate for municipalities that do not have a zoning ordinance in place; a combination of Site Plan Review and conditional-use permits may be appropriate for municipalities that have an existing zoning ordinance. That said, municipalities with an existing zoning ordinance that wish to allow solar may not need to amend their ordinance in advance of development; the model site-plan regulation standards may be sufficient to meet a community's needs in the short-term as they consider amending their ordinance for development over the long-term.

Furthermore, roof-mounted and small-scale ground-mounted solar energy systems may not require any regulatory or permitting changes, or additional oversight by a municipal planning authority, at all. Many communities allow these land uses as-of-right, for example, if they meet standards such as accessory structure requirements in the case of small ground-mounted systems. This means that development may proceed without the need for a conditional use permit, variance, amendment, waiver, or other discretionary approval. These projects cannot be prohibited, and can be built once a building permit has been issued by the inspector of buildings, building commissioner, or local inspector. See page 7 for model definitions (including square footage) for small-, medium-, and large-scale solar energy systems, as well as definitions for roof- and ground-mounted solar energy systems.

Navigating This Document

The document contains model site plan regulations and conditional use permit language. Model site plan regulation language begins on page 3 and model conditional use language begins on page 7. Content in the yellow boxes includes additional context and information for readers to consider as they contemplate how the model language may suit their municipality. Content in brackets should be modified to fit a municipality's particular resources and nomenclature. This content, a long with the model language, may also provide municipalities the information they need to create different land use tools to guide solar development in their community.

Readers may also want to consider a Maine-based Frequently Asked Questions document that addresses solar power development from a community and municipal perspective and recommended Best Practices for Low Impact Siting, Design, and Maintenance from some of Maine's leading natural resource and agricultural organizations. These documents can be found at maineaudubon.org/solar.

For More Information

Please contact Eliza Donoghue, Director of Advocacy and Staff Attorney for Maine Audubon, at edonoghue@maineaudubon.org.

I. MODEL SITE PLAN REGULATION LANGUAGE

Site Plan Review and Performance Standards

Site Plan Review may be appropriate when medium-scale ground-mounted systems are sited within natural resource protection districts. Site Plan Review may be appropriate for large-scale ground-mounted systems when they are sited anywhere within the community.

Site Plan Review procedures and requirements may stand alone or as a separate section of a municipality's zoning ordinance. There are also instances when communities that have a zoning ordinance have separate Site Plan Review provisions and procedures pertaining to a particular use or development type.

As discussed previously (see 'Selecting a Land-Use Tool', above), performance standards are generally sufficient for roof-mounted and small-scale ground-mounted solar energy systems.

Standards for Roof-Mounted and Small-Scale Ground-Mounted Solar Energy Systems

(a) Roof-mounted and building-mounted solar energy systems and equipment are permitted by right, unless they are determined by the [Code Enforcement Officer, with input from the Town Engineer and the Fire Chief] to present one or more unreasonable safety risks, including, but not limited to, the following:

  (i) Weight load;

  (ii) Wind resistance;

  (iii) Ingress or egress in the event of fire or other emergency; or

  (iv) Proximity of a ground-mounted system relative to buildings.

(b) All solar energy system installations shall be installed in compliance with the photovoltaic systems standards of the latest edition of the National Fire Protection Association (NFPA1) adopted by [Town].

(c) All wiring shall be installed in compliance with the photovoltaic systems standards of the latest edition of the National Electrical Code (NFPA 70) adopted by [Town].

(d) Prior to operation, electrical connections must be inspected and approved by the Electrical Inspector.

Additional Standards for Medium- and Large-Scale Ground-Mounted Solar Energy Systems

In addition to the standards in [Sec. __], medium- and large-scale ground-mounted solar energy systems shall comply with the following:

(a) Utility Connections: Overhead or pole-mounted electrical wires shall be avoided to the extent possible within the facility.

(b) Safety: The solar system owner or project proponent shall provide a copy of the Site Plan Review application to the [Fire Chief] for review and comment. The [Fire Chief] shall base any recommendation for approval or denial of the application upon review of the fire safety of the proposed system.

(c) Visual Impact: Reasonable efforts, as determined by the [Planning Board], shall be made to minimize undue visual impacts by preserving native vegetation, screening abutting properties, or other appropriate measures, including adherence to height standards and setback requirements.

(d) 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 bylaws/ordinances. Ground-mounted facilities shall minimize mowing to the extent practicable. Removal of mature trees shall be avoided to the extent possible. Native, pollinator-friendly seed mixtures shall be used to the extent possible. Herbicide and pesticide use shall be minimized. No prime agricultural soil or significant volume of topsoil shall be removed from the site for installation of the system.

Solar Energy System Fencing

The National Electric Code requires fencing for certain sized, ground-mounted solar energy systems. To allow for wildlife passage, fences should be elevated by a minimum of 5 inches. To maximize wildlife's ability to permeate fencing, municipalities may consider requiring the use of 'Solid Lock Game Fences'. Such fencing would start with 8 by 12-inch openings at the bottom (ground) with progressively smaller openings at the top of the fence. This type of fencing meets the National Electric Code for human safety. Additionally, municipalities may consider requiring the placement of five-inch or larger diameter wooden escape poles in two or more corners of the perimeter fence as an alternative means for wildlife to escape the enclosed area.

(e) Fencing: Where fencing is used, fences should be elevated by a minimum of 5 inches to allow for passage of small terrestrial animals.

(f) Removal: Solar energy systems that have reached the end of their useful life or that has been abandoned consistent with this ordinance shall be removed. The owner or operator shall physically remove the installation no more than 365 days after the date of discontinued operations. The owner or operator shall notify the [Code Enforcement Officer] by certified mail of the proposed date of discontinued operations and plans for removal. Decommissioning shall consist of:

(i) Physical removal of all solar energy systems, structures, equipment, security barriers, and transmission lines from the site.

(ii) Disposal of all solid and hazardous waste in accordance with local, state, and federal waste disposal regulations.

(iii) Stabilization or re-vegetation of the site as necessary to minimize erosion. Native, pollinator-friendly seed mixtures shall be used to the maximum extent possible.

(g) Abandonment:

(i) Absent notice of a proposed date of decommissioning or written notice of extenuating circumstances, a large-scale ground-mounted solar energy system shall be considered abandoned when it fails to operate for more than one year.

(ii) If the owner or operator of the solar energy system fails to remove the installation within 365 days of abandonment or the proposed date of decommissioning, the [Town] retains the right to use all available means to cause an abandoned, hazardous, or decommissioned large-scale ground-mounted solar energy system to be removed.

Additional Standards for Large-Scale Solar Energy Systems

(a) Large-scale ground-mounted solar energy systems shall not be considered accessory uses.

(b) Operations and Maintenance Plan: The project proponent shall submit a plan for the operation and maintenance of the large-scale ground-mounted solar energy system, which shall include measures for maintaining safe access to the installation as well as other general procedures for operational maintenance of the installation.

(c) Signage: A sign shall be placed on the large-scale solar energy system to identify the owner and provide a 24-hour emergency contact phone number.

(d) Emergency Services: The large-scale ground-mounted solar energy system owner or operator shall provide a copy of the project summary, electrical schematic, and site plan to the [Fire Chief]. Upon request, the owner or operator shall cooperate with the [Fire Department] in developing an emergency response plan. All means of shutting down the system shall be clearly marked. The owner or operator shall provide to the [Code Enforcement Officer] the name and contact information of a responsible person for public inquiries throughout the life of the installation.

Site Plan Application and Review

(a) Applicability:

(i) Roof-mounted systems and small-scale ground- mounted systems are not subject to Site Plan Review.

(ii) Medium-scale ground-mounted solar energy systems are not subject to Site Plan Review, except in natural resource protection districts and as may be required if conditional use permits are needed.

(iii) Large-scale ground-mounted solar energy systems are subject to Site Plan Review.

(b) In addition to the [Town's] site plan application requirements, the Applicant shall submit the following supplemental information as part of a site plan application:

(i) A site plan showing:

(1) Property lines and physical features, including roads, for the project site;

(2) Proposed changes to the landscape of the site, grading, vegetation clearing and planting, exterior lighting, screening vegetation or structures;

(3) 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 collector;

(4) Documentation of the major system components to be used, including the panels, mounting system, and inverter(s);

(5) Name, address, and contact information of the proposed system installer, the project proponent, project proponent agent, and all co-proponents or property owners, if any; and

(6) A one- or three-line electrical diagram detailing the solar photovoltaic installation, associated components, and electrical interconnection methods.

If the following are not addressed in existing Site Plan Review regulations, then the community may wish to include them:

(7) Locations of important plant and animal habitats identified by the Maine Department of Inland Fisheries and Wildlife or [Town of], or rare and irreplaceable natural areas, such as rare and exemplary natural communities and rare plant habitat as identified by the Maine Natural Areas Program.

(8) Locations of wetlands and waterbodies.

(9) Locations of "Prime Farmland" and "Farmland of Statewide Importance".

(10) Locations of floodplains.

(11) Locations of local or National Historic Districts.

(12) A public outreach plan, including how the project proponent will inform abutters and the community.

Review Processes

(a) For projects that are subject to permitted uses, [Town staff] will review the application and make final determination within 5 days of receipt.

(b) For all projects that require Site Plan Review, the following administrative procedures shall take effect:

(i) Prior to submitting an application and the start of the review process, a pre-application conference is recommended. The conference is initiated by the Applicant and is scheduled with the Applicant and a member of the planning staff to discuss pertinent requirements.

(ii) The Applicant shall submit the required number of copies of their application at least seven days in advance of the meeting when the project is scheduled for a [Planning Board] agenda.

(iii) Applications are processed in the order in which they are received.

(iv) Within 10 days of receipt of the application in the [Department of Planning and Development], the Applicant will be notified if their application is complete or incomplete. If it is incomplete, a list of outstanding items will be included in the notification letter. Each time revisions are submitted on an incomplete application, the [Town] has another 10 days to review the revised materials to make a determination of completeness.

(v) Once an application is deemed to be complete, the project will be reviewed by [Town staff] for compliance with the ordinance standards. The Applicant will be notified of staff comments regarding the project and the Applicant may make revisions to address these comments.

(vi) When the project is scheduled for a [Planning Board] agenda, the planning staff will prepare a written report that discusses the project and makes a recommendation to the [Planning Board] as to a decision. The report is available to the Applicant on the [___ day] preceding the [Planning Board] meeting. The [Board] will hold the public hearing on the application within 30 days of receipt of a complete application and make a decision within 10 days of that hearing. A decision may be postponed, with agreement of the applicant, to allow time for revisions to a plan.

(vii) The applicant or a duly authorized representative should attend the [Planning Board] meeting to discuss the application.

II. MODEL CONDITIONAL-USE PERMIT LANGUAGE

Purpose

(a) Solar energy is a local, renewable and non-polluting energy resource that can reduce fossil fuel dependence and emissions. Energy generated from solar energy systems can be used to offset energy demand on the grid, with benefits for system owners and other electricity consumers.

(b) The use of solar energy equipment for the purpose of providing electricity and energy for heating and/or cooling is an important component of the [Town's] sustainability goals.

(c) The standards that follow enable the accommodation of solar energy systems and equipment in a safe manner while still allowing the quiet enjoyment of property.

(d) This ordinance is intended to balance the need for reasonable standards and expedited and streamlined development review procedures.

Within a Zoning Ordinance the definition section usually stands alone, but may be included in a subsection within other sections of the Zoning Ordinance.

Definitions

Electrical Equipment: Any device associated with a solar energy system, such as an outdoor electrical unit/control box, that transfers the energy from the solar energy system to the intended location.

Electricity Generation (production, output):
The amount of electric energy produced by transforming other forms of energy, commonly expressed in kilowatt-hours (kWh) or megawatt-hours (MWh).

Height of building: The vertical measurement from grade to the highest point of the building, except that utility structures such as chimneys, TV antennae, HVAC systems, and roof-mounted solar energy systems shall not be included in this measurement, nor shall any construction whose sole function is to house or conceal such structures.

Mounting: The manner in which a solar PV system is affixed to the roof or ground (i.e., roof mount, or ground mount.

Power: The rate at which work is performed (the rate of producing, transferring, or using energy). Power is measured in Watts (W), kilowatts (kW), Megawatts (MW), etc. in Alternative Current (AC).

Solar Array: Multiple solar panels combined together to create one system.

Solar Collector: A solar PV cell, panel, or array, or solar thermal collector device, that relies upon solar radiation as an energy source for the generation of electricity or transfer of stored heat.

Solar Energy System: A solar energy system whose primary purpose is to harvest energy by transforming solar energy into another form of energy or transferring heat from a collector to another medium using mechanical, electrical, or chemical means. It may be roof-mounted or ground-mounted, and may be of any size as follows:

1. Small-scale Solar Energy System is one whose physical size based on total airspace projected over a roof or the ground is less than 15,000 square feet (approximately one-third of an acre);
2. Medium-scale Solar Energy System is one whose physical size based on total airspace projected over a roof or the ground is equal to or greater than 15,000 square feet but less than 87,120 square feet (two acres); and
3. Large-scale Solar Energy System is one whose physical size based on total airspace projected over a roof or the ground is equal to or greater than 87,120 square feet (two acres).

Solar Energy System, Ground-Mounted: A Solar Energy System that is structurally mounted to the ground and is not roof-mounted; may be of any size (small-, medium- or large-scale).

Solar Energy System, Roof-Mounted: A Solar Energy System that is mounted on the roof of a building or structure; may be of any size (small-, medium- or large-scale).

Tilt. The angle of the solar panels and/or solar collector relative to horizontal. Tilt is often between 5 and 40 degrees. Solar energy systems can be manually or automatically adjusted throughout the year. Alternatively, fixed-tilt systems remain at a static tilt year-round.

Use Regulations

Within a Zoning Ordinance, the Use Regulations describe which land uses are allowed within different zoning districts of the community, as well as which permits are required. The Use Regulations typically include a Use Table and/or narrative description of the principal and accessory uses that are allowed, prohibited, and/or allowed only through a conditional use permit or are subject to Site Plan Review within each zoning district.

The example provided in this section demonstrates how roof-mounted, small-scale ground-mounted, medium-scale ground-mounted, and large-scale ground-mounted solar energy systems can be incorporated into a municipality's Use Regulations as a Use Table. A town may elect instead to list uses.

In this model, roof-mounted solar energy systems, regardless of size, are allowed as-of-right throughout the community. This means that development may proceed without the need for a conditional-use permit, variance, amendment, waiver, or other discretionary approval. These projects cannot be prohibited, and can be built once a building permit has been issued by the inspector of buildings, building commissioner, or local inspector.

Ground-Mounted Systems

For ground-mounted systems, there is a distinction between how small-scale, medium-scale and large-scale systems are treated and where each are allowed as-of-right, via Site Plan Review, or by conditional use permit. The model zoning allows small-scale ground-mounted systems as-of-right throughout the community except for in natural resource protection zones, in which a conditional use permit is required. These are of a size that would service a house, small businesses, or small municipal building. The model zoning allows medium-scale ground-mounted systems in all districts except as a principal use in natural resource protection zoning districts; in these or similar districts, medium-scale ground-mounted systems are only allowed as an accessory use through Site Plan Review.

As drafted, the model zoning requires Site Plan Review for all large-scale ground-mounted systems and prohibits such systems in natural resource protection districts. Alternatively, a municipality may choose to prohibit large-scale ground-mounted systems in residential districts, due to housing or other growth or land use needs. Site Plan Review is discussed in more detail earlier in this document (see page 3), but in general it establishes criteria for the layout, scale, appearance, safety, and environmental impacts of certain types and/or scales of development. Typically, site plan approval must be obtained before the building permit is issued.

Siting Best Practices

"Low Impact Solar Siting, Design, and Maintenance", a resource created by Maine-based environmental and agricultural NGOs, describes how Maine communities can realize solar energy systems' climate and economic benefits while avoiding or significantly reducing undue impacts to wildlife, farming, and critical natural resources. This resource can be found at maineaudubon.org/solar. The practices described in the resource, coupled with the standards outlined in the model site plan regulation language, can ensure that solar energy systems are thoughtfully sited within a community.

Applicability

(a) Notwithstanding the provisions of 1 M.R.S.A section 302 or any other law to the contrary, the requirements of this [Chapter] shall apply to all roof-mounted and ground-mounted solar energy systems modified or installed after the date of its enactment.

(b) All solar energy systems shall be designed, erected, and installed in accordance with all applicable codes, regulations and standards.

(c) Any upgrade, modification or structural change that materially alters the size, placement or output of an existing solar energy system shall comply with the provisions of this [Chapter].

(d) For the purpose of this [Chapter], the [Town's] zoning districts are mapped and categorized as follows:
[see Use Table on next page].

Permitting

(a) A solar energy system or device shall be installed or operated in the [Town] provided it is in compliance with this ordinance.

(b) Permitting shall be determined by the locational zone within the [Town], type of solar system, and proposed size. The [Town] has designated the proper permitting process for each solar system in the attached matrix entitled "Permitting Required for Solar Energy Systems."

(c) Permitted Use: Roof-mounted solar energy systems are permitted in all zoning districts, subject to the dimensional standards of [Sec. 5] and the additional standards outlined in [Sec. 5] and [Sec. 6].

Permitting Required for Solar Energy Systems

	Commercial	Industrial	Residential	Rural Residential	Rural Farm and Forest	Natural Resource Protection
Principal Use						
Medium-scale Ground-mounted SES	**Y**	**Y**	**CU**	**CU**	**CU**	**N**
Large-scale Ground-mounted SES	**SPR**	**SPR**	**SPR or N**	**SPR**	**SPR**	**N**
Accessory Use						
Rooftop SES	**Y**	**Y**	**Y**	**Y**	**Y**	**Y**
Small-scale Ground-mounted Solar	**Y**	**Y**	**Y**	**Y**	**Y**	**CU**
Medium-scale Ground-mounted Solar	**Y**	**Y**	**Y**	**CU**	**CU**	**SPR**

Y = Allowed; N = Prohibited; CU = Conditional Use; SPR = Site Plan Review

Dimensional Regulations

In most cases, the existing dimensional standards in a Zoning Ordinance will allow for the development of small-, medium-, and large-scale solar energy systems. However, if a municipality finds alternate dimensional standards are necessary to allow solar energy energy systems while protecting public health, safety, and welfare, it may impose them.

Height

It is recommended that for purposes of height, roof-mounted solar energy systems should be considered similar to chimneys, television antennae, roof-top mechanical equipment and other appurtenances that are usually either allowed a much higher maximum height (e.g., 100 feet instead of 35 feet) or are exempted altogether from building height requirements. Such an exemption can be stated in the definition of "Building Height" or through language similar to that provided in the following example.

Dimensional Standards

(a) Height: In mixed-use and non-residential commercial/industrial zones, solar energy systems shall be considered to be mechanical devices and, for purposes of height measurement, are restricted only to the extent consistent with other building-mounted mechanical devices.

(b) Height standards for ground-mounted solar energy systems are dependent on location and zoning district:

(i) In residential and mixed-use zoning districts, such systems shall not exceed twelve (12) feet in height when oriented at maximum tilt, except that the maximum height is twenty-two (22) feet for systems set back at least thirty (30) feet from any property line.

(ii) In all other zoning districts, such systems shall conform to the building height requirements of the zoning districts in which they are located.

Setbacks

It is recommended that small- and medium-scale ground-mounted solar energy systems that are accessory to a primary building or structure on a lot be provided with more flexible setback requirements than those that would typically apply to a primary structure. Many communities already provide some flexibility for "accessory structures" like sheds, allowing these to be closer to the lot line than the primary structure. For example, where a front/side/rear yard setback for the primary structure may be 50 feet, setbacks of 20 feet may be allowed for accessory structures. When ground-mounted solar energy systems are developed as accessory structures to a home, business or other building or structure, they should be afforded at least the same flexibility.

If a community does not have this type of reduced setback already built into the Zoning Ordinance, a provision could be added that effectively reduces the setback distance just for this use.

(c) Setbacks for Ground-Mounted Solar Energy Systems

(i) Notwithstanding any other provision of this ordinance to the contrary, the setbacks for ground-mounted solar energy systems shall be as follows:

(1) Minimum front yard: In residential zoning districts, fifty (50) feet. In mixed use and non-res idential zoning districts, whatever the front yard setback is for that zoning district, but in no event less than ten (10) feet.

(2) Minimum rear yard: Whatever the rear yard setback is for accessory buildings in that zoning district.

(3) Minimum side yard: Whatever the rear yard setback is for accessory buildings in that zoning district.

(ii) Additional setbacks may be required to mitigate visual and functional impacts.

Lot Coverage

A number of communities use "maximum lot coverage" or "maximum impervious surface" as one of their dimensional standards. While it is clear that such features as driveways or buildings would be included in any calculation of lot coverage, many other features may be more ambiguous depending on how clearly the definition in the Zoning Ordinance is written. Regardless of the definition, it is recommended that solar energy systems with grass or another pervious surface under them be exempted from lot coverage or impervious surface calculations. However, if the area is to be paved or otherwise rendered impervious then this land area should in fact count toward any coverage or impervious surface limit. For the purposes of municipal stormwater regulations, panels could have the effect of altering the volume, velocity, and discharge pattern of stormwater runoff, however, vegetated cover beneath arrays should not be considered fully impervious.

Example:

Solar energy systems shall not be included in calculations for lot coverage or impervious cover as defined in [Sec. __].

Created by

Maine Audubon, with significant review, feedback, and support from Maine-based solar developers, municipal planners, agricultural organizations, and solar advocates.

Please contact Eliza Donoghue at edonoghue@maineaudubon.org with questions.