

16.5 General Performance Standards

§16.5.20 Solar Energy System, Ground-Mounted

A. Purpose:

- (1) Pursuant to the land use and coastal community resilience goals of the Town of Kittery's Comprehensive Plan, it is deemed to be in the public interest to promote, integrate and regulate sustainable, renewable, non-polluting energy systems that foster the generation, usage and distribution of clean energy; offset demand from the regional power system, and eliminate fossil fuel dependency and emissions.
- (2) The purpose of this section is to encourage the development of ground-mounted solar energy systems while protecting the health, safety and welfare of the public. The standards herein shall include, but not limited to the site location, development, construction, operation, monitoring, modification and removal of such installations that address public safety, minimize impacts on scenic, natural and historic resources, protect residential neighborhoods and properties, and secure as applicable adequate financial assurance for the eventual decommissioning of installations.

B. Applicability and Standards

(1) Applicability:

- a. Notwithstanding the provision of 1 M.R.S.A section 302 or any other law to the contrary, the requirements under §16.5.20 shall apply to all 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 local, state and federal 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 §16.7.13.C

(2) General Standards:

- a. Small-, medium- and large-scale (>20,000-sf.) solar energy systems shall comply with the following:
 - i. Emergency services: The applicant shall provide, at the minimum, a copy of the project summary, electrical schematic, and site plan to

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the Code Enforcement Officer and Fire Chief. Upon request, the applicant shall cooperate with the Fire Department in developing an emergency response plan. All means of shutting down the system shall be clearly marked.

ii. Fencing: Where fencing is used, fences shall be constructed to the dimensional standards of a Solid Lock Game Fence that consists of 8-inch x 12-inch openings at the fence's base with progressively small openings at the top. An alternative fence may be use that is elevated at a minimum of 5-inches from the ground with the purpose of allowing the passage of small terrestrial animals. Additionally, at least one (1) corner of the fence's perimeter shall have the placement of five-inch or larger diameter wooded escape poles as an alternative means for wildlife escape.

iii. Glare: Solar panels are designed specifically to absorb only sun light and are by their very nature less reflective than other varnished or glass exterior housing pieces. Nevertheless, all solar panels shall contain an anti-reflective coating and a copy of the solar panel's design specification shall be provided, which shall include at the minimum data on the amount of glare intended to project from the solar panels. Moreover, the applicant shall submit information demonstrating meaningful consideration to the orientation and location of the solar panels for the purpose of averting the encroachment of solar glare onto abutting properties or roadways to the maximum extent practicable.

iv. 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 Title 16. 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 is prohibited, unless demonstrated by the applicant as unequivocally necessary to manage vegetation growth. No prime agricultural soil or significant volume of topsoil shall be removed from the site to install the

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- 68 ground-mounted system or its appurtenant infrastructure.
- 69 v. Laws, Ordinances, and Regulations: The construction and operation
70 of ground mounted solar energy systems in conjunction with their
71 appurtenant structures shall adhere to all applicable local, state, and
72 federal regulations and requirements, including but not limited to
73 safety, construction, electrical, and communication requirements.
- 74 vi. Natural Resources and Wildlife: No large-scale solar energy system
75 shall be located within areas identified as “Significant Wildlife
76 Habitats” under Maine’s Natural Resources Protection Act nor
77 within critical habitat areas as designated by Maine Department of
78 Inland Fisheries and Wildlife.
- 79 vii. Safety: If storage batteries are located on site as part of the solar
80 energy system, they shall adhere to the requirements of any
81 applicable fire prevention and building code provision when in use
82 and, when no longer used, shall be disposed of in accordance with
83 applicable federal, state and local laws and regulations.
- 84 viii. Utility connections: All on-site utility lines, excluding the main
85 service connection at the utility right-of-way shall be underground
86 within the facility unless demonstrated by the applicant to be
87 physically impracticable.
- 88 b. Large-scale solar energy systems (<20,000-sf.) shall comply with the
89 following:
- 90 i. Emergency services: The applicant proposing a large-scale ground-
91 mounted solar energy system larger shall provide, at a minimal, a
92 copy of the project summary, electrical schematic, and site plan to
93 the Code Enforcement Officer and Fire Chief. Upon request, the
94 applicant shall cooperate with the Fire Department in developing an
95 emergency response plan. All means of shutting down the system
96 shall be clearly marked. The applicant shall provide to the Code
97 Enforcement Officer the name and contact information of a
98 responsible person for public inquires throughout the life of the
99 installation.
- 100 ii. Financial surety: The deposit, executions, or filing with the Town
101 Clerk of cash, bond, or other form of security reasonably acceptable

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to the Town of Kittery, shall be in an amount sufficient to ensure the good faith performance of the terms and conditions of the permit issued pursuant hereto and to provide for the removal and restorations of the site subsequent to removal. The amount of the bond or security shall be 125 % of the cost of removal of the large-scale solar energy system and restoration of the property with an escalator of [2] % annually for the life of the solar energy system. The decommissioning amount shall be reduced by the amount of the estimated salvage value of the solar energy system. In the event of default upon performance of such conditions, after proper notice and expiration of any cure periods, the cash deposit, bond, or security shall be forfeited to the Town of Kittery, which shall be entitled to maintain an action thereon. The cash deposit, bond, or security shall remain in full force and effect until restoration of the property as set forth in the decommissioning plan is completed. In the event of default or abandonment of the solar energy system, the system shall be decommissioned as set forth in §16.5.20.B(2)(d) herein.

iii. Fencing: Where fencing is used, fences shall be constructed to the dimensional standards of a Solid Lock Game Fence that consists of 8-inch x 12-inch openings at the fence's base with progressively small openings at the top. Alternatively, the Planning Board may modify this standard by permitting a different type of fence that is elevated at a minimum of 5-inches from the ground with the purpose of allowing the passage of small terrestrial animals. Additionally, at least four (4) corners of the fence's perimeter shall have the placement of five-inch or larger diameter wooded escape poles as an alternative means for wildlife escape.

iv. Glare: Solar panels are designed specifically to absorb only sun light and are by their very nature less reflective than other varnished or glass exterior housing pieces. Nevertheless, all solar panels shall contain an anti-reflective coating and a copy of the solar panel's design specification shall be provided, which shall include at the minimum data on the amount of glare intended to project from the solar panels. Moreover, the applicant shall submit information demonstrating meaningful consideration to the orientation and location of the solar panels for the purpose of averting the

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encroachment of solar glare onto abutting properties or roadways to the maximum extent practicable.

- v. Land clearing and erosion control: 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 standards within Title 16. Herbicide and pesticide use is prohibited, unless demonstrated unequivocally as necessary to manage vegetation growth. No prime agricultural soil or significant volume of topsoil shall be removed from the site to install the ground-mounted system or its appurtenant infrastructure. Removal of mature trees is discourage and the imposition of mitigation measures or restrictions on tree clearing may be prescribed by the Planning Board in order to prevent habitat fragmentation of existing forested landscapes and to protect hydrological regimes and other essential ecosystem functions. In the instance a site's vegetation is disturbed or must be remove to provide for solar access during the construction of the project, a vegetation management plan is required, demonstrating the creation of a beneficial habitat by using native or naturalized vegetation in all disturbed areas of the site not used to achieve operational efficacy of the solar energy system. Nevertheless, the Planning Board may approve an alternative vegetation plan that uses native or naturalized vegetation, but does not necessarily establish a beneficial habitat.

- vi. Laws, Ordinances, and Regulations: The construction and operation of ground mounted solar energy systems in conjunction with their appurtenant structures shall adhere to all applicable local, state, and federal regulations and requirements, including but not limited to safety, construction, electrical, and communication requirements.

- vii. Natural Resources and Wildlife: No large-scale solar energy system shall be located within areas identified as "Significant Wildlife Habitats" under Maine's Natural Resources Protection Act nor within critical habitat areas as designated by Maine Department of Inland Fisheries and Wildlife. Moreover, no

- viii. Operation and Maintenance Plan: A large-scale ground mounted

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173 application shall include a plan for the operation and maintenance
174 of the proposed large-scale ground-mounted solar energy system,
175 which shall include, but not limited to measures for maintaining safe
176 access to the installation, stormwater controls, general procedures
177 for operational maintenance of the installation and a vegetation
178 management plan.

- 179 ix. Safety: The solar energy system owner or project proponent shall
180 provide a copy of the site plan review application to the Fire Chief
181 for review and comment. The Fire Chief shall base any
182 recommendations of the application upon review of the fire safety
183 of the proposed system. The solar energy systems shall be
184 maintained in good working order and in accordance with industry
185 standards. Site access shall be maintained, including snow removal
186 at a level acceptable to the Fire Department. If storage batteries are
187 located as part of the solar energy system, they shall meet the
188 requirements of any applicable fire prevention and building code
189 when in use and, when no longer used, shall be disposed of in
190 accordance with applicable federal, state and local laws or
191 regulations.

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

- 195 xi. Utility connections: All on-site utility lines, excluding the main
196 service connection at the utility right-of-way, shall be underground
197 within the facility unless demonstrated by the applicant to be
198 physically impracticable or as prescribed by the public utility
199 provider.

- 200 xii. Use type: Large-scale ground-mounted solar energy systems greater
201 than 20,000-sf. shall not be considered as an accessory use unless
202 designated as a dual-use system, pursuant to §16.5.20.B.ii.c

- 203 xiii. Visual Impact: Reasonable effort, as determined by the Planning
204 Board, shall be made to minimize undue visual impacts by
205 preserving native vegetation, screening abutting properties, or other
206 appropriate measures, including adherence to height standards and
207 setback requirements. To demonstrate compliance with this

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standard, an analysis of the potential visual impacts from the project including solar panels, roads and fencing along with measures used to avoid, minimize or mitigate inappropriate visual effects is required. Furthermore, all appurtenant structures, including but not limited to equipment, shelters, storage facilities, transformers, and substations, shall be architecturally compatible with each other.

c. Additional standards for dual-use solar energy systems:

i. In addition to the standards under §16.5.20.B(2) the following standards shall be followed for dual-use systems:

a. Dual-use solar energy systems shall be designed with the objective of prioritizing primary agricultural activity and constructed in a manner that avoids, to the extent practicable, the discontinuance of agricultural land identified by the Natural Resources Conservation Services as “Prime Farmland” or “Farmland of Statewide Importance”, or otherwise cause productive farmland to be removed from production.

b. In the instant the applicant satisfactorily demonstrates that prime agricultural land is incapable for dual-use purposes, a vegetation management plan shall be provided to the Planning Board for approval.

d. Change of ownership, decommissioning, and abandonment of large-scale solar energy systems:

i. Ownership change: If the owner or operator of the solar energy system changes or the owner of the property changes, the approved site plan shall remain in effect, provided that the successor owner or operator assumes in writing all of the obligations of the site plan approval. A new owner or operator of the solar energy system shall notify the Code Enforcement Officer of such change in ownership or operator within 30 days of the ownership change.

ii. Decommissioning: Solar energy systems that have reached the end of their useful life or are abandoned shall be removed. The owner or operator shall physically remove the installation no more than 180 days after the date of discontinued operations. The owner or operator

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shall notify the Code Enforcement Officer by certified mail of the propose date of discontinued operations and plans for removal. Notification of discontinuance shall be no less than 180-days prior to the anticipated date of discontinuance. Decommissioning shall consist of the following:

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 for the site as necessary to minimize erosion and restore disturbed habitat in accordance with the site's vegetation management plan.

iii. Absent notice of 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 (1) year without having first obtained the written consent of the Code Enforcement Officer.

iv. If the owner or operator of the solar energy system fails to remove the installation within 180 days of abandonment or the proposed date of decommissioning, the Town of Kittery 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.

(3) Dimensional Standards:

a. Small- and medium-scale solar energy systems shall comply with the following dimensional standards:

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

a. Minimal front yard:

1. Residential Zones:

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- 274 a. For residential zoning districts, no part of the
275 ground-mounted solar energy system may be
276 placed closer to the front property line (and
277 side property line in a case of a corner lot)
278 than the principal structure to the street.
- 279 b. In the instance no building nor distinct
280 principal building is present on the lot or
281 multiple lots, the ground mounted solar
282 energy system shall adhere to the base zone
283 setback and buffered from the road.
- 284 2. Commercial, Business and Mixed-Use Zones:
- 285 a. Whatever the front yard setback for the
286 zoning district, but no less than 10 ft.
- 287 b. Minimum rear yard:
- 288 1. Whatever the back yard setback for the zoning
289 district, but no less than 10 ft.
- 290 c. Minimum side yard:
- 291 1. Whatever the side setback for the zoning district, but
292 no less than 10 ft.
- 293 ii. Lot coverage: Solar energy systems that have vegetation or pervious
294 materials underneath are exempt from lot coverage standards.
- 295 iii. Height: No taller than 10-ft. in height or a height equal to $\frac{1}{2}$ the
296 distance to the nearest lot line, to a maximum of 20-ft.
- 297 iv. Additional setbacks may be required to mitigate visual and
298 functional impacts.
- 299 b. Large-scale solar energy systems shall comply with the following
300 dimensional standards:
- 301 i. Setbacks: Notwithstanding any other provision in this title to the
302 contrary, the setbacks for ground-mounted solar energy systems
303 shall be as follows:
- 304 a. Minimal front yard:

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1. For residential zoning districts, no part of the ground-mounted solar energy system may be placed closer to the front property line (and side property line in a case of a corner lot) than the principal structure to the street.

2. In the instance no building nor distinct principal building is present on the lot or multiple lots, the ground mounted solar energy system shall be setback at least 100-ft and buffered from the road.

b.Mixed-Use Zone:

1. No part of the ground-mounted solar energy system may be placed closer to the front property line (and side property line in a case of a corner lot) than the principal structure to the street.

2. In the instance no building nor distinct principal building is present on the lot or multiple lots, the ground mounted solar energy system shall be setback at least 75-ft and buffered from the road.

c.Minimum rear yard: 50-ft.

d.Whatever the rear side: 50-ft.

e.Minimum side yard: 50-ft.

ii. Lot coverage: Solar energy systems that have vegetation or pervious materials underneath are exempt from lot coverage standards.

iii. Height: Shall not exceed 20-ft. in height. The height of any solar panel from the ground level shall not exceed 20-ft.

iv. Additional setbacks may be required to mitigate visual and functional impacts.

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§16.5.21 Solar Energy System, Roof-Mounted and Building-Integrated

A. Applicability

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

- (a) Weight load;
- (b) Wind resistance;
- (c) Ingress or egress in the event of fire or other emergency; or
- (d) Proximity of a ground-mounted system relative to buildings.

B. General requirements

- (1) All solar energy systems installations shall be installed in compliance with the photovoltaic systems standards of the latest addition of the National Fire Protection Association (NFPA1) and of the National Electrical Code (NEPA 70), as adopted pursuant to §16.2.8.F.v.c.
- (2) Roof-mounted solar energy systems shall not extend more than 10-ft. above the highest point of the roof.

C. Inspections

- (1) Prior to operation, electrical connections must be inspected and approved by the Code Enforcement Officer, or designee.