



TOWN OF KITTERY

200 Rogers Road, Kittery, ME 03904

Kittery Land Issues Committee

AGENDA

Tuesday, February 16, 2021

5:00pm

ONLINE MEETING via ZOOM

1. Solar code amendments
 - a. Second review of Title 16 amendments for the regulation of solar energy installations
2. Stormwater code amendments introduction
 - a. Title 16 amendments to provide for 100-year storm standard
3. Next Meeting: March 15, 2021, 4pm
 - a. Confirm non-Town Council meeting Mondays through 2021:
3/15; 4/5; 5/17; 6/21; 7/19; 8/16; 9/20; 10/18; 11/15; 12/20
4. Adjourn

You may register in advance to attend this webinar:

https://us02web.zoom.us/webinar/register/WN_xziyrcRCRfqmBzVh31z1_Q

After registering, you will receive a confirmation email containing information about joining the webinar.

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems
Prepared for: Climate Adaptation Committee, Town of Kittery
Prepared by: Department of Planning and Development, Town of Kittery
Date: February 10, 2021
Draft Edition: 2.0

16.3 Definitions

1 **EXISTING DEFINITIONS AMENDED**

2 **PUBLIC UTILITY FACILITY**

3 Buildings, structures, and facilities, including generating and switching stations, poles,
4 lines, pipes, pumping stations, repeaters, antennas, transmitters and receivers, valves, and
5 all buildings and structures relating to the furnishing of utility services, such as electric,
6 gas, telephone, water and sewer, to the public. **This definition excludes solar energy**
7 **system facilities.**

8 **DEFINITIONS TO BE ADDED**

9 **BENEFICIAL HABITAT**

10 An area of land that provides native perennial vegetation and foraging habitat fitting for
11 game birds, songbirds, pollinators and other symbiotic species.
12

13 **POLLINATOR**

14 Bees, birds, bats, and other insects or wildlife that pollinate flowering plants, and
15 includes both wild and managed insects.
16

17 **SOLAR ACCESS**

18 Space open to the sun and clear of overhangs or shade so as to permit the use of active
19 and/or passive solar energy systems on individual properties.
20

21 **SOLAR COLLECTOR**

22 A solar photovoltaic cell, panel, or array or solar thermal collector device, that relies upon
23 solar radiation as an energy source for the generation of electricity or transfer of stored
24 heat.
25

26 **SOLAR ENERGY**

27 Radiant energy received from the sun that can be collected in the form of heat or light by
28 a solar collector.
29

30 **SOLAR ENERGY SYSTEM**

31 A device or structural design feature, a substantial purpose of which is to provide daylight
32 for interior lighting or provide for the collection, storage and distribution of solar energy
33 for space heating or cooling, electricity generation, or water heating.

34 **SOLAR ENERGY SYSTEM, ACTIVE**

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems
Prepared for: Climate Adaptation Committee, Town of Kittery
Prepared by: Department of Planning and Development, Town of Kittery
Date: February 10, 2021
Draft Edition: 2.0

16.3 Definitions

35 A solar energy system whose primary purpose is to harvest energy by transforming solar
36 energy into another form of energy or transferring heat from a collector to another medium
37 using mechanical, electrical, or chemical means.

38 **SOLAR ENERGY SYSTEM, BUILDING-INTEGRATED**

39 Photovoltaic materials that are used to replace conventional building materials in parts of
40 a building envelope

41 42 **SOLAR ENERGY SYSTEM, DUAL-USE**

43 The integration of agricultural production with a photovoltaic system that allows for solar
44 energy production while maintaining agricultural activities in such a manner that primary
45 agricultural undertakings including animal grazing, crop or vegetable production can
46 continue simultaneously on that farmland.

47 48 **SOLAR ENERGY SYSTEM, EQUIPMENT**

49 Electrical material, hardware, inverters, conduit, storage devices, or other electrical and
50 photovoltaic apparatuses associated with the production of electricity.

51 52 **SOLAR ENERGY SYSTEM, GLARE**

53 The effect by reflections of light with intensity sufficient ~~as determined in a commercially~~
54 ~~reasonable manner~~ to cause annoyance, discomfort, or loss in visual performance and
55 visibility in any material respects.

56 57 **SOLAR ENERGY SYSTEM, GROUND-MOUNTED**

58 An active solar energy system that is structurally mounted to the ground and is not roof-
59 mounted nor a component of a building; may be of any size (small-, medium-or large-
60 scale).

61 **SOLAR ENERGY SYSTEM, LARGE SCALE**

62 An Active Solar Energy System whose physical size based on total airspace projected over
63 the ground is greater than 5,000 square feet.

64 **SOLAR ENERGY SYSTEM, MEDIUM-SCALE**

65 An Active Solar Energy System whose physical size based on total airspace projected over
66 the ground is greater than 1,000 square feet but less than or equal to 5,000 square feet.

67 **SOLAR ENERGY SYSTEM, ROOF-MOUNTED**

68 An Active Solar Energy System that is mounted on the roof of a building or structure.

69

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems
Prepared for: Climate Adaptation Committee, Town of Kittery
Prepared by: Department of Planning and Development, Town of Kittery
Date: February 10, 2021
Draft Edition: 2.0

16.3 Definitions

70 **SOLAR ENERGY SYSTEM, SMALL-SCALE**

71 An Active Solar Energy System whose physical size based on total airspace projected over
72 the ground is equal to or less than 1,000 square feet

73 **VEGETATION, NATIVE**

74 Vegetation that is native to Maine and does not include invasive species.

75 **VEGETATION, NATURALIZED**

76 Vegetation that is not native to Maine, but is now considered to be well established and
77 part of Maine flora. Naturalized vegetation does not include invasive species.

78 **VEGETATION MANAGEMENT PLAN**

79 A written document that includes short-and long-term site management practices that will
80 provide and maintain native and naturalized vegetation, and in the instances of a dual-use
81 applications, the reestablishment of prime agricultural land in the instance fertile land
82 becomes discontinued from agricultural production to accommodate the solar energy
83 system.

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems
Prepared for: Climate Adaptation Committee, Town of Kittery
Prepared by: Department of Planning and Development, Town of Kittery
Date: February 10, 2021
Draft Edition: 2.0

16.5 General Performance Standards

1 *§16.5.20 Solar Energy System, Ground-Mounted*

2 A. Purpose:

3 (1) Pursuant to the land use and coastal community resilience goals of the Town of
4 Kittery’s Comprehensive Plan, it is deemed to be in the public interest to promote,
5 integrate and regulate sustainable, renewable, non-polluting energy systems that
6 foster the generation, usage and distribution of clean energy; offset demand from
7 the regional power system, and eliminate fossil fuel dependency and emissions.

8 (2) The purpose of this section is to encourage the development of ground-mounted
9 solar energy systems while protecting the health, safety and welfare of the public.
10 The standards herein shall include, but **are** not limited to the site location,
11 development, construction, operation, monitoring, modification and removal of
12 such installations that address public safety, minimize impacts on scenic, natural
13 and historic resources, protect residential neighborhoods and properties, and
14 secure as applicable adequate financial assurance for the eventual
15 decommissioning of installations.

16 B. Applicability

17 (1) Notwithstanding the provision of 1 M.R.S.A section 302 or any other law to the
18 contrary, the requirements under §16.5.20 shall apply to all ground-mounted solar
19 energy systems modified or installed after the date of its enactment.

20 (2) All solar energy systems shall be designed, erected, and installed in accordance
21 with all applicable local, state and federal codes, regulations and standards.

22 (3) Any upgrade, modification or structural change that materially alters the size,
23 placement or output of an existing solar energy system shall comply with the
24 provisions of §16.7.13.C

25 B. General Standards:

26 (1) **Area calculation:**

27 a. **Small-, medium- or large-scale solar energy system’s square footage**
28 **shall be calculated by measuring the total surface area of the solar**
29 **collector at maximum tilt to the vertical that occupies a given space or**
30 **mounting surface.**

31 (2) Small-, medium- and large-scale (<20,000-sf.) solar energy systems shall comply
32 with the following:

16.5 General Performance Standards

- 33 a. Emergency services: The applicant shall provide, at the minimum, a copy
34 of the project summary, electrical schematic, and site plan to the Code
35 Enforcement Officer and Fire Chief. Upon request, the applicant shall
36 cooperate with the Fire Department in developing an emergency response
37 plan. All means of shutting down the system shall be clearly marked.
- 38 b. Fencing: Where fencing is used, fences shall be constructed to the
39 dimensional standards of a Solid Lock Game Fence that consists of 8-inch
40 x 12-inch openings at the fence’s base with progressively small openings at
41 the top. An alternative fence may be **used** that is elevated at a minimum of
42 5-inches from the ground with the purpose of allowing the passage of small
43 terrestrial animals. Additionally, at least one (1) corner of the fence’s
44 perimeter shall have the placement of five-inch or larger diameter **wooden**
45 escape poles as an alternative means for wildlife escape.
- 46 c. Glare: Solar panels are designed specifically to absorb only sun light and
47 are by their very nature less reflective than other varnished or glass exterior
48 housing pieces. Nevertheless, all solar panels shall contain an anti-reflective
49 coating and a copy of the solar panel’s design specification shall be
50 provided, which shall include at the minimum data on the amount of glare
51 intended to project from the solar panels. Moreover, the applicant shall
52 submit ~~information~~ **documentation** demonstrating ~~meaningful~~
53 ~~consideration~~ **that no glare will unreasonably** ~~to the orientation and~~
54 ~~location of the solar panels for the purpose of averting the~~ ~~encroachment of~~
55 ~~solar glare~~ onto abutting properties or roadways to the maximum extent
56 practicable.
- 57 d. Land clearing, soil erosion, and habitat impacts: Clearing of natural
58 vegetation shall be limited to what is necessary for the construction,
59 operation and maintenance of ground-mounted solar energy systems or as
60 otherwise prescribed by applicable laws, regulations, and Title 16. Ground-
61 mounted facilities shall minimize mowing to the extent practicable.
62 Removal of mature trees shall be avoided to the extent possible. Native,
63 pollinator-friendly seed mixtures shall be used to the extent possible.
64 Herbicide and pesticide use is prohibited, unless demonstrated by the
65 applicant as unequivocally necessary to manage vegetation growth. No
66 prime agricultural soil or significant volume of topsoil shall be removed
67 from the site to install the ground-mounted system or its appurtenant

16.5 General Performance Standards

- 68 infrastructure.
- 69 e. Laws, Ordinances, and Regulations: The construction and operation of
70 ground mounted solar energy systems in conjunction with their appurtenant
71 structures shall adhere to all applicable local, state, and federal regulations
72 and requirements, including but not limited to safety, construction,
73 electrical, and communication requirements.
- 74 f. Natural Resources and Wildlife: No large-scale solar energy system shall
75 be located within areas identified as “Significant Wildlife Habitats” under
76 Maine’s Natural Resources Protection Act nor within critical habitat areas
77 as designated by Maine Department of Inland Fisheries and Wildlife.
- 78 g. Safety: If storage batteries are located on site as part of the solar energy
79 system, they shall adhere to the requirements of any applicable fire
80 prevention and building code provision when in use and, when no longer
81 used, shall be disposed of in accordance with applicable federal, state and
82 local laws and regulations.
- 83 h. Utility connections: All on-site utility lines, excluding the main service
84 connection at the utility right-of-way shall be underground within the
85 facility unless demonstrated by the applicant to be physically impracticable.
- 86 (3) Large-scale solar energy systems (>20,000-sf.) shall comply with the following:
- 87 a. Emergency services: The applicant proposing a large-scale ground-mounted
88 solar energy system larger shall provide, at a minimal, a copy of the project
89 summary, electrical schematic, and site plan to the Code Enforcement
90 Officer and Fire Chief. Upon request, the applicant shall cooperate with the
91 Fire Department in developing an emergency response plan. All means of
92 shutting down the system shall be clearly marked. The applicant shall
93 provide to the Code Enforcement Officer the name and contact information
94 of a responsible person for public inquires throughout the life of the
95 installation.
- 96 b. Financial surety: The deposit, executions, or filing with the Town Clerk of
97 cash, bond, or other form of security reasonably acceptable to the Town of
98 Kittery, shall be in an amount sufficient to ensure the good faith
99 performance of the terms and conditions of the permit issued pursuant
100 hereto and to provide for the removal and restorations of the site subsequent
101 to removal. The amount of the bond or security shall be 125 % of the cost

16.5 General Performance Standards

- 102 of removal of the large-scale solar energy system and restoration of the
103 property with an escalator of [2] % annually for the life of the solar energy
104 system. The decommissioning amount shall be reduced by the amount of
105 the estimated salvage value of the solar energy system. In the event of
106 default upon performance of such conditions, after proper notice and
107 expiration of any cure periods, the cash deposit, bond, or security shall be
108 forfeited to the Town of Kittery, which shall be entitled to maintain an
109 action thereon. The cash deposit, bond, or security shall remain in full force
110 and effect until restoration of the property as set forth in the
111 decommissioning plan is completed. In the event of default or abandonment
112 of the solar energy system, the system shall be decommissioned as set forth
113 in §16.5.20.B(2)(d) herein.
- 114 c. Fencing: Where fencing is used, fences shall be constructed to the
115 dimensional standards of a Solid Lock Game Fence that consists of 8-inch
116 x 12-inch openings at the fence's base with progressively small openings at
117 the top. Alternatively, the Planning Board may modify this standard by
118 permitting a different type of fence that is elevated at a minimum of 5-inches
119 from the ground with the purpose of allowing the passage of small terrestrial
120 animals. Additionally, at least four (4) corners of the fence's perimeter shall
121 have the placement of five-inch or larger diameter wooded escape poles as
122 an alternative means for wildlife escape.
- 123 d. Glare: Solar panels are designed specifically to absorb only sun light and
124 are by their very nature less reflective than other varnished or glass exterior
125 housing pieces. Nevertheless, all solar panels shall contain an anti-reflective
126 coating and a copy of the solar panel's design specification shall be
127 provided, which shall include at the minimum data on the amount of glare
128 intended to project from the solar panels. Moreover, the applicant shall
129 submit information documentation demonstrating meaningful
130 consideration that no glare will unreasonably ~~to the orientation and~~
131 ~~location of the solar panels for the purpose of averting the encroachment of~~
132 ~~solar glare~~ onto abutting properties or roadways to the maximum extent
133 practicable.
- 134 e. Land clearing and erosion control: Clearing of natural vegetation shall be
135 limited to what is necessary for the construction, operation and maintenance
136 of ground-mounted solar energy systems or as otherwise prescribed by

16.5 General Performance Standards

- 137 applicable laws, regulations, and standards within Title 16. Herbicide and
138 pesticide use is prohibited, unless demonstrated unequivocally as necessary
139 to manage vegetation growth. No prime agricultural soil or significant
140 volume of topsoil shall be removed from the site to install the ground-
141 mounted system or its appurtenant infrastructure. Removal of mature trees
142 is **discouraged** and the imposition of mitigation measures or restrictions on
143 tree clearing ~~may be prescribed~~ **may be required** by the Planning Board in
144 order to prevent habitat fragmentation of existing forested landscapes and
145 to protect hydrological regimes and other essential ecosystem functions. In
146 the instance a site’s vegetation is disturbed or must be removed to provide
147 for solar access during the construction of the project, a vegetation
148 management plan is required, demonstrating the creation of a beneficial
149 habitat by using native or naturalized vegetation in all disturbed areas of the
150 site not used to achieve operational efficacy of the solar energy system.
- 151 f. Laws, Ordinances, and Regulations: The construction and operation of
152 ground mounted solar energy systems in conjunction with their appurtenant
153 structures shall adhere to all applicable local, state, and federal regulations
154 and requirements, including but not limited to safety, construction,
155 electrical, and communication requirements.
- 156 g. Natural Resources and Wildlife: No large-scale solar energy system shall
157 be located within areas identified as “Significant Wildlife Habitats” under
158 Maine’s Natural Resources Protection Act nor within critical habitat areas
159 as designated by Maine Department of Inland Fisheries and Wildlife.
160 ~~Moreover, no~~
- 161 h. Operation and Maintenance Plan: ~~A large-scale ground-mounted~~ **The**
162 application shall include a plan for the operation and maintenance of the
163 proposed large-scale ground-mounted solar energy system, which shall
164 include, but not limited to measures for maintaining safe access to the
165 installation, stormwater controls, general procedures for operational
166 maintenance of the installation and a vegetation management plan.
- 167 i. Safety: The solar energy system owner or ~~project proponent~~ **applicant’s**
168 **agent** shall provide a copy of the site plan review application to the Fire
169 Chief for review and comment. The Fire Chief shall base any
170 recommendations of the application upon review of the fire safety of the
171 proposed system **to the Planning Board for their consideration**. The solar

16.5 General Performance Standards

- 172 energy systems shall be maintained in good working order and in
173 accordance with industry standards. Site access shall be maintained,
174 including snow removal at a level acceptable to the Fire Department. If
175 storage batteries are located as part of the solar energy system, they shall
176 meet the requirements of any applicable fire prevention and building code
177 when in use and, when no longer used, shall be disposed of in accordance
178 with applicable federal, state and local laws or regulations.
- 179 j. Signage: A sign shall be placed on a large-scale solar energy system to
180 identify the owner and provide a 24-hour emergency contact phone number.
- 181 k. Stormwater: **All large-scale solar energy systems must use LID (Low**
182 **Impact Development) and BMP (Best Management Practices), based**
183 **on Maine DEP’s Maine Stormwater Best Management Practices**
184 **Manual Volumes 1-III as amended from time to time, to manage 100%**
185 **of the total stormwater generated on-site. The stormwater report and**
186 **plan demonstrating that this requirement is met must be included with**
187 **the application at the time of submission. A request for a modification**
188 **may be submitted to the Planning Board but it is incumbent on the**
189 **applicant to prove to the Planning Board’s satisfaction that such a**
190 **modification is necessary. The Town reserves the right to submit such**
191 **modification requests for independent engineering review at the**
192 **applicant’s expense. The Board may also require additional**
193 **landscaping/plantings when granting such concessions.**
- 194 l. Utility connections: All on-site utility lines, excluding the main service
195 connection at the utility right-of-way, shall be underground within the
196 facility unless demonstrated by the applicant to be physically impracticable
197 or as prescribed by the public utility provider.
- 198 m. Use type: Large-scale ground-mounted solar energy systems greater than
199 20,000-sf. shall not be considered as an accessory use unless designated as
200 a dual-use system, pursuant to §16.5.20.B.ii.c
- 201 n. Vegetation management plan: **In the instance a vegetation management**
202 **plan is required, said plan shall be designed by a registered landscape**
203 **architect or, at the Planning Board’s discretion, may be formulated by**
204 **other design professionals. The vegetation management plan shall**
205 **included but not limited to information on the location and type**
206 **vegetation to be disturbed and removed, the location and type of plant**

16.5 General Performance Standards

- 207 species to be planted, a maintenance plan, and information on how a
208 beneficial habitat will be achieved. The Planning Board at its discretion
209 may require the vegetation management plan to be reviewed by its peer
210 reviewer, or designee, at the applicant’s expense in order to determine
211 compliance with this standard. ~~Notwithstanding the aforementioned, the~~
212 ~~Planning Board may approve an alternative vegetation plan that uses native~~
213 ~~or naturalized vegetation, but does not necessarily establish a beneficial~~
214 ~~habitat in the in~~
- 215 o. Visual impact: Reasonable effort, as determined by the Planning Board,
216 shall be made to minimize undue visual impacts by preserving native
217 vegetation, screening abutting properties, or other appropriate measures,
218 including adherence to height standards and setback requirements. To
219 demonstrate compliance with this standard, an analysis of the potential
220 visual impacts from the project including solar panels, roads and fencing
221 along with measures used to avoid, minimize or mitigate inappropriate
222 visual effects is required. Furthermore, all appurtenant structures, including
223 but not limited to equipment, shelters, storage facilities, transformers, and
224 substations, shall be architecturally compatible with each other.
- 225 (4) Additional standards for dual-use solar energy systems:
- 226 a. In addition to the standards under §16.5.20.B(2) the following standards
227 shall be followed for dual-use systems:
- 228 i. Dual-use solar energy systems shall be designed with the objective
229 of prioritizing primary agricultural activity and constructed in a
230 manner that avoids, to the extent practicable, the discontinuance of
231 agricultural land identified by the Natural Resources Conservation
232 Services as “Prime Farmland” or “Farmland of Statewide
233 Importance”, or otherwise cause productive farmland to be removed
234 from production.
- 235 ~~ii. In the instance the applicant satisfactorily demonstrates that prime~~
236 ~~agricultural land is incapable for dual-use purposes, a vegetation~~
237 ~~management plan shall be provided to the Planning Board for~~
238 ~~approval.~~
- 239 (5) Change of ownership, decommissioning, and abandonment of large-scale solar
240 energy systems:

16.5 General Performance Standards

- 241 a. Ownership change: If the owner or operator of the solar energy system
242 changes or the owner of the property changes, the approved site plan shall
243 remain in effect, provided that the successor owner or operator assumes in
244 writing all of the obligations of the site plan approval. A new owner or
245 operator of the solar energy system shall notify the Code Enforcement
246 Officer of such change in ownership or operator within 30 days of the
247 ownership change.
- 248 b. Decommissioning: Solar energy systems that have reached the end of their
249 useful life or are abandoned shall be removed. The owner or operator shall
250 physically remove the installation no more than 180 days after the date of
251 discontinued operations. The owner or operator shall notify the Code
252 Enforcement Officer by certified mail of the proposed date of discontinued
253 operations and plans for removal. Notification of discontinuance shall be no
254 less than 180-days prior to the anticipated date of discontinuance.
255 Decommissioning shall consist of the following:
- 256 i. Physical removal of all solar energy systems, structures, equipment,
257 security barriers, and transmission lines from the site.
- 258 ii. Disposal of all solid and hazardous waste in accordance with local,
259 state and federal waste disposal regulations.
- 260 iii. Stabilization or re-vegetation for the site as necessary to minimize
261 erosion and restore disturbed habitat in accordance with the site's
262 vegetation management plan.
- 263 c. Absent notice of proposed date of decommissioning or written notice of
264 extenuating circumstances, a large-scale ground-mounted solar energy
265 system shall be considered abandoned when it fails to operate for more than
266 one (1) year without having first obtained the written consent of the Code
267 Enforcement Officer.
- 268 d. If the owner or operator of the solar energy system fails to remove the
269 installation within 180 days of abandonment or the proposed date of
270 decommissioning, the Town of Kittery retains the right to use all available
271 means to cause an abandoned, hazardous, or decommissioned large-scale
272 ground-mounted solar energy system to be removed.
- 273 C. Dimensional Standards:

16.5 General Performance Standards

- 274 (1) Small- and medium-scale solar energy systems shall comply with the following
275 dimensional standards:
- 276 a. Setbacks: Notwithstanding any other provision in this title to the contrary,
277 the setbacks for ground-mounted solar energy systems shall be as follows:
- 278 i. Minimum front yard:
- 279 a. Residential Zones:
- 280 1. For residential zoning districts, no part of the ground-
281 mounted solar energy system may be placed closer to
282 the front property line (and side property line in a
283 case of a corner lot) than the principal structure to the
284 street, **unless demonstrated that the principal**
285 **structure is at a minimal 75-ft from the front yard**
286 **property line, in which case a 20-ft setback is**
287 **required.**
- 288 2. In the instance no building nor distinct principal
289 building is present on the lot or multiple lots, the
290 ground mounted solar energy system shall adhere to
291 the base zone setback and **be** buffered from the road.
- 292 b. Commercial, Business and Mixed-Use Zones:
- 293 1. Whatever the front yard setback for the zoning
294 district, but no less than 10 ft.
- 295 ii. Minimum rear yard:
- 296 a. Whatever the rear yard setback for the zoning district, but no
297 less than 10 ft.
- 298 iii. Minimum side yard:
- 299 a. Whatever the side setback for the zoning district, but no less
300 than 10 ft.
- 301 b. **Impervious surface** ~~Lot coverage~~: Solar energy systems that have
302 vegetation or pervious materials underneath are exempt **from the base zone**
303 **impervious surface standard. All appurtenant infrastructure such as**
304 **but not limited to access roads and support pads are not exempt from**
305 **this standard.**

16.5 General Performance Standards

- 306 c. Height: No taller than 10-ft. in height or a height equal to ½ the distance to
307 the nearest lot line, to a maximum of 20-ft.
- 308 ~~d. Additional setbacks may be required to mitigate visual and functional~~
309 ~~impacts.~~
- 310 (2) Large-scale solar energy systems shall comply with the following dimensional
311 standards:
- 312 a. Setbacks: Notwithstanding any other provision in this title to the contrary,
313 the setbacks for ground-mounted solar energy systems shall be as follows:
- 314 i. Minimum front yard:
- 315 a. Residential Zones
- 316 1. For residential zoning districts, no part of the ground-
317 mounted solar energy system may be placed closer to
318 the front property line (and side property line in a
319 case of a corner lot) than the principal structure to the
320 street **unless demonstrated that the principal**
321 **structure is at a minimal 200-ft from the front**
322 **yard property line, in which case a 100-ft setback**
323 **is required.**
- 324 2. In the instance no building nor distinct principal
325 building is present on the lot or multiple lots, the
326 ground mounted solar energy system shall be setback
327 at least 100-ft and buffered from the road.
- 328 b. Commercial, Business, Mixed-Use Zone:
- 329 1. No part of the ground-mounted solar energy system
330 may be placed closer to the front property line (and
331 side property line in a case of a corner lot) than the
332 principal structure to the street, **unless**
333 **demonstrated that the principal structure is at a**
334 **minimal 200-ft from the front yard property line,**
335 **in which case a 100-ft setback is required.**
- 336 2. In the instance no building nor distinct principal
337 building is present on the lot or multiple lots, the

16.5 General Performance Standards

- 338 ground mounted solar energy system shall be setback
339 at least 75-ft and buffered from the road.
- 340 ii. Minimum rear yard, **all zones**: 50-ft.
- 341 iii. Minimum side yard, **all zones**: 50-ft.
- 342 b. **Impervious surface** ~~Lot~~ coverage: Solar energy systems that have
343 vegetation or pervious materials underneath are exempt **from the base zone**
344 **impervious surface standard. All appurtenant infrastructure such as**
345 **but not limited to access roads and support pads are not exempt from**
346 **this standard.**
- 347 c. Height: Shall not exceed 20-ft. in height. The height of any solar panel from
348 the ground level shall not exceed 20-ft.
- 349 ~~d. Additional setbacks may be required to mitigate visual and functional~~
350 ~~impacts.~~

351 *§16.5.21 Solar Energy System, Roof-Mounted and Building-Integrated*

352 A. Applicability

- 353 (1) Roof-mounted, building-mounted and building-integrated solar energy systems
354 and equipment are permitted by-right, unless they are deemed by the Code
355 Enforcement Officer, with input from the Fire Chief, to present one or more
356 unreasonable safety risks, including but not limited to, the following:
- 357 (a) Weight load;
- 358 (b) Wind resistance;
- 359 (c) Ingress or egress in the event of fire or other emergency; or
- 360 (d) Proximity of a ground-mounted system relative to buildings.

361 B. General requirements

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

368 C. Inspections

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems
Prepared for: Climate Adaptation Committee, Town of Kittery
Prepared by: Department of Planning and Development, Town of Kittery
Date: February 10, 2021
Draft Edition: 2.0

16.5 General Performance Standards

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

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems

Prepared for: Climate Adaptation Committee, Town of Kittery

Prepared by: Department of Planning and Development, Town of Kittery

Date: February 10, 2021

Draft Edition: 2.0

Table 16.5.28			
Minimum Setbacks from Wetlands and Water Bodies* [Amended 9-24-2012 by Ord. No. 12-11]			
Structure/Activity	Total Size of Wetland and/or Water Body		
	Less than 501 square feet (feet)	501 square feet to 1 acre and Intermittent Streams (feet)	Greater than 1 acre (feet)
<u>Solar energy system</u>	<u>0</u>	<u>50</u>	<u>100</u>

Table 16.5.28			
Minimum Setbacks from Wetlands and Water Bodies* [Amended 9-24-2012 by Ord. No. 12-11]			
Structure/Activity	Total Size of Wetland and/or Water Body		
	Less than 501 square feet (feet)	501 square feet to 1 acre and Intermittent Streams (feet)	Greater than 1 acre (feet)
Local distribution utility pole, fence, flagpole, signs or drainage structure	0	0	0
Functionally water-dependent uses	0	0	0
Roads and Driveways			
Traveled way of road or driveway of 18 feet or less in width ¹	0	10 from toe of slope	10 from toe of slope
Traveled way of road or driveway greater than 18 feet in width ¹	0	30 or 10 from toe of slope, whichever is greater	30 or 10 from toe of slope, whichever is greater
Parking Areas			
Parking areas for one- and two-family residential uses	0	10	20
1 to 5 stall parking area	0	30	50
6 to 20 stall parking area incorporating BMPs for stormwater management ²	0	40	75
6 to 20 stall parking area without incorporating BMPs for stormwater management ²	0	75	100
21 or more stall parking area ³ incorporating BMPs for stormwater management	0	50	75
Patios, Decks, Accessory Buildings			
Patio or deck area no larger than 500	0	30	50

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems

Prepared for: Climate Adaptation Committee, Town of Kittery

Prepared by: Department of Planning and Development, Town of Kittery

Date: February 10, 2021

Draft Edition: 2.0

Table 16.5.28			
Minimum Setbacks from Wetlands and Water Bodies* [Amended 9-24-2012 by Ord. No. 12-11]			
Structure/Activity	Total Size of Wetland and/or Water Body		
	Less than 501 square feet (feet)	501 square feet to 1 acre and Intermittent Streams (feet)	Greater than 1 acre (feet)
square feet in size			
Detached residential storage shed no larger than 120 square feet in size	0	30	50
Other Buildings and Structures			
Building or structure (including patio or deck area larger than 500 square feet in size)	0	50	100
Solar energy system	0	50	100
Activities and structures permitted within regulated wetlands	0	0	0
Subsurface Sewage Disposal			
Treatment tanks and disposal areas for new subsurface sewage disposal systems with design flows of less than 2,000 GPD	0	50	100
Treatment tanks and disposal areas for new subsurface sewage disposal systems with design flows of 2,000 GPD or more	0	100	100
Recreational Uses and Structures			
Low-intensity recreation	0	0	0
Recreational facility or structure excluding a golf course	0	50	100
Topsoil Removal			
Removal of more than 10 cubic yards of topsoil except for approved projects	0	50	100
Topsoil removal with a Soil Conservation Service-endorsed erosion and sedimentation plan	0	25	25
Special Uses			
Junkyard ¹	0	100	150
Bulk salt storage not in an enclosed structure ¹	0	100	150
Gravel and mineral extraction or	0	100	150

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems

Prepared for: Climate Adaptation Committee, Town of Kittery

Prepared by: Department of Planning and Development, Town of Kittery

Date: February 10, 2021

Draft Edition: 2.0

Table 16.5.28			
Minimum Setbacks from Wetlands and Water Bodies* [Amended 9-24-2012 by Ord. No. 12-11]			
Structure/Activity	Total Size of Wetland and/or Water Body		
	Less than 501 square feet (feet)	501 square feet to 1 acre and Intermittent Streams (feet)	Greater than 1 acre (feet)
processing ¹			
Storage of hazardous chemicals or special wastes other than amounts normally associated with individual households/farms ¹	0	100	150
Commercial painting, wood preserving or furniture stripping ¹	0	100	150
Laundromats, auto wash, printing, dry-cleaning, photographic processing, if not connected to a sanitary sewer ⁴	0	100	150
Metal plating, finishing, polishing ¹	0	100	150
NOTES:			
*	All vernal pools, including those having an area less than 501 square feet, are regulated by MDEP 06-096 Chapter 335.9.		
1	The street setback does not serve to negate a wetland crossing project for which a wetlands permit has been approved by the Planning Board.		
2	Written endorsement by the York County Soil and Water Conservation District (YCSWCD) or the Town's Peer Review Consultant that best management practices (BMPs) for protecting water quality by minimizing pollutants leaving the site in the stormwater runoff are incorporated to the maximum extent practicable is required to satisfy this condition. The Planning Board may waive the requirement for written endorsement by the SWCD or the Town's Peer Review Consultant when it finds a drainage plan has adequately protected the wetland from adverse impacts.		
3	Parking areas with 21 or more stalls must incorporate BMPs.		
4	Wetland setback may be reduced to 100 feet if the YCSWCD or the Town's Peer Review Consultant finds the stormwater management plan incorporates BMPs for protecting water quality by minimizing pollutants leaving the site in the stormwater.		

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems
Prepared for: Climate Adaptation Committee, Town of Kittery
Prepared by: Department of Planning and Development, Town of Kittery
Date: February 10, 2021
Draft Edition: 2.0

16.7 Site Plan Review

§16.7.3 Applicability

- C. Unless subject to a shoreland development plan review or Right of Way Plan per § 16.7.3A, the following do not require Planning Board approval:
1. Single and duplex family dwellings.
 2. Division of land into lots (i.e., two lots), which division is not otherwise subject to Planning Board review as a subdivision.
 3. Business use as provided in § 16.2.6.D.
 4. **Small-scale ground-mounted solar energy systems below or equal to one thousand (1,000) square feet in area.**

16.7.6. Classification of Projects

- (1) Minor Site Plans shall include the following
 - a. The cumulative construction or addition of fewer than five thousand (5,000) square feet of gross nonresidential floor area.
 - b. Any individual or cumulative construction or addition of five thousand (5,000) square feet or more of gross nonresidential floor area within an approved subdivision.
 - c. The establishment of a new nonresidential use even if no buildings or structures are proposed, that involves the Development of more than twenty-five thousand (25,000) square feet but less than one (1) acre of land.
 - d. **Projects that involve ground mounted solar energy systems greater than one thousand (1,000) square feet, but less than or equal to five thousand (5,000) square feet in area.**
- (2). Major Site Plans shall include projects involving:
 - a. The individual or cumulative construction or addition of five thousand (5,000) or more square feet of gross nonresidential floor area on a lot that is not part of an approved subdivision,
 - b. The individual or cumulative Development of one (1) acre or more land, unless the Development is part of a Site Plan application in an approved subdivision,
 - c. Any mixed-use project that contains residential and non-residential uses,
 - d. Projects that involve Wireless Communication System Facilities (WCSF),
 - e. Projects that require any waiver from performance standards.
 - f. Projects that also require subdivision or special exception approval, or
 - g. Other projects requiring review which are not classified as a minor development.

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems
Prepared for: Climate Adaptation Committee, Town of Kittery
Prepared by: Department of Planning and Development, Town of Kittery
Date: February 10, 2021
Draft Edition: 2.0

16.7 Site Plan Review

- h. **Projects that involve ground-mounted solar energy systems above five thousand (5,000) square-feet in area.**

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems
Prepared for: Climate Adaptation Committee, Town of Kittery
Prepared by: Department of Planning and Development, Town of Kittery
Date: February 10, 2021
Draft Edition: 2.0

Table of Uses

BASE ZONING DISTRICTS																		
LAND USE	R-RL	R-S	R-KPV	R-U	R-V	R-RC	CON	B-L	B-L1	C-1	C-2	C-3	IND	MU	MU-BI	MU-KF	MU-N	
Accessory Uses & Buildings																		
Solar Energy System, Building Integrated	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Solar Energy System, Large-Scale (<20,000-sf.)	SE	SE	-	-	-	SE	-	-	-	SE	SE	SE	P	SE	-	-	SE	
Solar Energy System, Medium-Scale	P	P	SE	SE	SE	SE	SE	P	P	P	P	P	P	P	SE	SE	P	
Solar Energy System, Small-Scale	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
Solar Energy System, Roof-Mounted	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
LAND USE																		
Community, Cultural & Educational Uses																		
Solar Energy System, Large-Scale (>20,000-sf.)	SE	-	-	-	-	-	-	-	-	-	-	-	P	SE	-	-	-	
LAND USE																		
Agriculture & Animal Care Uses																		
Solar Energy System, Dual-Use	P	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

P = Permitted use
 SE = Special exception use
 -- = Not permitted

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems
Prepared for: Climate Adaptation Committee, Town of Kittery
Prepared by: Department of Planning and Development, Town of Kittery
Date: February 10, 2021
Draft Edition: 2.0

Table of Uses

Shoreland Overlay Zone (OZ-250-SL)																		
LAND USE	R-RL	R-S	R-KPV	R-U	R-V	R-RC	CON	B-L	B-L1	C-1	C-2	C-3	IND	MU	MU-BI	MU-KF	MU-N	
Accessory Uses & Buildings																		
Solar Energy System, Building Integrated	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Solar Energy System, Large-Scale (<20,000-sf.)	SE	SE	-	-	-	-	-	-	-	SE	SE	SE	P	SE	-	-	SE	
Solar Energy System, Medium-Scale	P	P	SE	SE	SE	SE	SE	P	P	P	P	P	P	P	SE	SE	P	
Solar Energy System, Small-Scale	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
Solar Energy System, Roof-Mounted	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	
LAND USE	R-RL	R-S	R-KPV	R-U	R-V	R-RC	CON	B-L	B-L1	C-1	C-2	C-3	IND	MU	MU-BI	MU-KF	MU-N	
Community, Cultural & Educational Uses																		
Solar Energy System, Large-Scale (>20,000-sf.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
LAND USE	R-RL	R-S	R-KPV	R-U	R-V	R-RC	CON	B-L	B-L1	C-1	C-2	C-3	IND	MU	MU-BI	MU-KF	MU-N	
Agriculture & Animal Care Uses																		
Solar Energy System, Dual-Use	SE	SE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

P = Permitted use
 SE = Special exception use
 -- = Not permitted

Title: Proposed Title 16 Amendments to Regulate Solar Energy Systems
Prepared for: Climate Adaptation Committee, Town of Kittery
Prepared by: Department of Planning and Development, Town of Kittery
Date: February 10, 2021
Draft Edition: 2.0

Table of Uses

Resource Protection Overlay Zone (OZ-RP)																		
LAND USE	R-RL	R-S	R-KPV	R-U	R-V	R-RC	CON	B-L	B-L1	C-1	C-2	C-3	IND	MU	MU-BI	MU-KF	MU-N	
Accessory Uses & Buildings																		
Solar Energy System, Building Integrated	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
Solar Energy System, Large-Scale (<20,000-sf.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Solar Energy System, Medium-Scale	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Solar Energy System, Small-Scale	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Solar Energy System, Roof-Mounted	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
LAND USE	R-RL	R-S	R-KPV	R-U	R-V	R-RC	CON	B-L	B-L1	C-1	C-2	C-3	IND	MU	MU-BI	MU-KF	MU-N	
Community, Cultural & Educational Uses																		
Solar Energy System, Large-Scale (>20,000-sf.)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LAND USE	R-RL	R-S	R-KPV	R-U	R-V	R-RC	CON	B-L	B-L1	C-1	C-2	C-3	IND	MU	MU-BI	MU-KF	MU-N	
Agriculture & Animal Care Uses																		
Solar Energy System, Dual-Use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

P = Permitted use
 SE = Special exception use
 -- = Not permitted

January 11, 2021

TO: Adam Causey, Director, Town of Kittery Planning and Development
Bart McDonough, Kittery Town Planner
FROM: Cameron Wake, Chair, Kittery Climate Adaptation Committee

Update Title 16.8.8.1 Stormwater Drainage

In February of 2020, members of the Kittery Town staff and the Kittery Climate Adaptation Committee jointly completed the Maine Flood Resilience checklist. Action items from that workshop are summarized in a report from [Southern Maine Planning and Development Commission](#) and covered areas related to flooding and shoreland protection. The Climate Adaptation Committee is in the process of evaluating and setting priorities for those actions items and will periodically share our recommendations with you. Below is the first in the series.

We propose an update to Title 16.8.8.1 Stormwater drainage. We recommend that the 16.8.8.1.D.1 twenty-five year, twenty-four-hour standard be revised to one hundred-year, twenty-four-hour, reflecting the past and projected future increase in regional extreme precipitation events. Further, we recommend that language be incorporated to require periodic review of the standard, given NOAA projections of increased extreme precipitation events across New England. We suggest at a minimum every ten years or sooner if research supports updating. It is my understanding that Kathy Connor will be drafting the related Title 16 stormwater section(s) for the Planning Board to review in the near future.

Note that the Town of York, among other Maine communities, requires that calculations be based on 100-year storm events. The Maine Department of Transportation now uses the 100-year storm in its calculations for engineering/infrastructure.

For reference, the NOAA Northeast Regional Climate Center in collaboration with the Natural Resources Conservation Service have created the Extreme Precipitation in New York and New England tool for extreme precipitation analysis (<http://precip.eas.cornell.edu>). Results are for York County:

Current 25-yr, 24-hr design storm: 6.15 inches

Current 100-yr, 24-hr design storm: 8.74 inches.

In recent years, our region has experienced several greater than 8" in twenty-four hours rain events (e.g., October 2005, May 2006, June 2012, October 2015).

c. Kendra Amaral, Town Manager
Dutch Dunkelberger, Chair, Planning Board

**Title 16, Chapter 16.8, Article VIII Surface Drainage – DRAFT Amendments – February 2021
For KLIC 2/16/21**

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

§16.8.8.1 Stormwater drainage.

[Subsections A-C remain unchanged and are left out for brevity]

D. When proposed development does not require Maine Department of Environmental (MDEP) approval under MDEP Chapters 500 and 502, the following applies:

- (1) All components of the stormwater management system must be designed to limit peak discharge to predevelopment levels for the two-year and one hundred-year ~~twenty-five-year~~, twenty-four-hour duration, frequencies, based on the Northeast Regional Climate Center Extreme Precipitation Tables-rainfall data as may be amended from time to time (<http://precip.net>). A periodic review by the Town, at least once every ten years, of this standard will ensure best practices are maintained for public health and safety. for Portsmouth, NH. When the development discharges directly to a major water body, peak discharge may be increased from predevelopment levels, provided downstream drainage structures are suitably sized unless otherwise specified for the zoning district and/or the use in which the development is located.

[Subsections D.(2)-D.(3) remain unchanged and are left out for brevity]