

Memorandum

To: Michele Gagnon, Town Planner
Town of Bar Harbor

From: William Ferdinand, Jr.

Date: June 22, 2022

Re: SP – 2022-02 Bar Harbor Community Solar Farm

This memorandum addresses the application of the Bar Harbor Land Use ordinance, shoreland districts and standards for clearing of vegetation, to the application for a solar farm in the above-referenced application.

PROTECTED SHORELAND AREAS

The ordinance creates shoreland districts around certain natural resources including freshwater wetlands, defined as follows:

SHORELAND DISTRICT OR ZONE

The land area located within 250 feet, horizontal distance, of the normal high water line of any great pond or river; within 250 feet, horizontal distance, of the upland edge of a coastal wetland, including all areas affected by tidal action; within 250 feet of the upland edge of a freshwater wetland; or within 75 feet, horizontal distance, of the normal high water line of a stream.

[Amended 11-5-1991; 11-4-2008]

The zoning map shows a Shoreland Limited Residential district that covers a small portion of the northeastern side of the property in the application.

The ordinance also applies shoreland protection standards to all activities near certain resources, including freshwater wetlands and significant vernal pools, defined in §125-109 as follows.

WETLAND, FORESTED

A freshwater **wetland** dominated by woody vegetation that is six meters (approximately 19.7 feet) tall or taller.

[Added 5-4-1992; amended 6-13-2006^[26]]

WETLAND, FRESHWATER

Freshwater swamps, marshes, bogs and similar areas, which are of 80,000 contiguous square feet or more or are wetlands adjacent to any surface water body; and inundated or saturated by surface or ground water at a frequency and for a duration sufficient to

support, and which under normal circumstances do support, a prevalence of **wetland** vegetation typically adapted for life in saturated soils. Freshwater wetlands may contain small stream channels or inclusions of land that do not conform to the criteria of this definition.

[Added 11-5-1991; amended 5-4-1992; 6-13-2006^[27]]

WETLAND, UPLAND EDGE

The boundary between upland and **wetland**. For purposes of a coastal **wetland**, this boundary is the line formed by the landward limits of the salt-tolerant vegetation and/or the highest annual tide, including all areas affected by tidal action. For purposes of a freshwater **wetland**, the upland edge is formed where the soils are not saturated for a duration sufficient to support **wetland** vegetation or where the soils support the growth of **wetland** vegetation but such vegetation is dominated by woody stems that are six meters (approximately 20 feet) tall or taller.

[Added 11-5-1991; amended 6-13-2006; 11-4-2008; 6-8-2010]

SIGNIFICANT VERNAL POOL

A naturally occurring temporary to permanent inland body of water that forms in a shallow depression and typically fills during the spring or fall and may dry during the summer. The **vernal** pool contains no viable populations of predatory fish, and it provides the primary breeding habitat for wood frogs, spotted salamanders, blue-spotted salamanders or fairy shrimp. The presence of any one or more of these species is usually conclusive evidence of a **vernal** pool. Only significant **vernal** pools that have been mapped or identified by a Town-authorized agency prior to project approval shall be considered as being within this definition. A significant **vernal** pool further means that there are multiple species present, or that the **vernal** pool is part of a corridor of other **vernal** pools, or that the pool is adjacent to a wetland.

[Added 6-13-2006^[20]]

We note that the definition of “upland edge of wetland” is either where wetland vegetation ends, or where trees over 6 meters in height dominate the wetland (i.e. a forested wetland). This definition is consistent with the Maine DEP minimum guidelines for shoreland zoning ordinances, Chapter 1000.

The application indicates that the wetland edge is delineated where the wetland vegetation ends. However, there appears to be forest vegetation in this wetland area, so the upland edge of the freshwater wetlands on this property may be in a different location, which would move the shoreland area away from the proposed location of the project. The application is thus showing the closest possible edge of the freshwater wetland, which may be more restrictive than the ordinance requires.

The significant vernal pools must have been mapped or identified by the Town or an authorized agency prior to approval of the application. There appear to be 2 such vernal pools on the property.

SHORELAND STANDARDS

The shoreland protection standards in the ordinance **§125-68** (attached) apply to activities within 250 feet, horizontal distance, of the upland edge of a freshwater wetlands, or 75 feet from a significant vernal pool.

The standard in the ordinance for clearing of vegetation provides different requirements based on the distance from the upland edge of the wetland:

- Within 75 feet of the upland edge of a freshwater wetland, and 25 feet from a forested wetland, except to allow for the development of permitted uses: no cleared openings greater than 250 feet in forest canopy, and selective cutting of vegetation according to a point system that results in a well distributed stand of trees. 125-68.B.13(b)
- Between 75 and 250 feet from the upland edge of the freshwater wetland: clearing is limited to 25% of the aggregate lot area within the shoreland district; and selective cutting of 40% of volume (basal area) within 10 years, including areas for development. 125-68.B.13(c)

The property in this application contains multiple resources that have a shoreland zone. The application indicates that some clearing will be done in the shoreland zone of some but not all of the resources in order to install the solar panels, and provide some sunlight for their operation. The proposed clearing is in the area between 75 and 250 feet of the shoreland zone. The application states that less than 25% of the aggregate shoreland area on the property will be cleared, including the area for development.

The application also indicates that less 40% of the basal area in the aggregate shoreland area on the lot will be cut, including the area for the proposed development. However, this standard is less applicable, as the proposed clearing must meet the more stringent standard for clearing above.

CONCLUSION

Based on the information provided in the application, in my opinion the clearing and selective cutting standards are met by this application.

**Bar Harbor Ordinance
Section 125-68**

(13) Clearing or removal of vegetation for activities other than timber harvesting.

All site plans shall demonstrate that clearing of vegetation for purposes of development shall be accomplished in accordance with the following:

(a) In a shoreland area zoned as a resource protection district abutting a great pond, there shall be no cutting of vegetation within the strip of land extending 75 feet, horizontal distance, inland from the normal high water line, except to remove safety hazards. Elsewhere, in any resource protection district, the cutting and removal clearing of vegetation shall be limited to that which is necessary for uses expressly authorized in that district.

(b) Except in areas as described in Subsection B(13)(a) above, and except to allow for the development of permitted uses, within a strip of land extending 100 feet, horizontal distance, inland from the normal high water line of a great pond classified GPA or a river flowing to a great pond classified GPA, 75 feet, horizontal distance, from any other water body, tributary stream, stream, significant vernal pool or the upland edge of a freshwater wetland, and 25 feet from the upland edge of a forested wetland, a buffer strip of vegetation shall be preserved as follows:

[1] There shall be no cleared opening greater than 250 square feet in the forest canopy (or other existing woody vegetation if a forested canopy is not present), as measured from the outer limits of the tree or shrub crown. However, a footpath not to exceed six feet in width, as measured between tree trunks and/or shrub stems, is allowed, provided that a cleared line of sight to the water through the buffer strip is not created.

[2] Selective cutting of trees within the buffer strip is allowed, provided that a well-distributed stand of trees and other natural vegetation is maintained.

[a] For the purposes of this section, a "well-distributed stand of trees" adjacent to a great pond classified GPA, or a river or stream flowing to a great pond classified GPA, shall be defined as maintaining a rating score of 24 or more in each twenty-fivefoot by fifty-foot square (1,250 square feet) area, as determined by the following rating system:

Diameter of Tree at 4 1/2 Feet
Above Ground Level
(inches) Points
2 to less than or equal to 4 1
4 to less than or equal to 8 2
8 to less than or equal to 12 4
12 or greater 8

NOTES:

As an example, adjacent to a great pond, if a twenty-five-foot by twenty-five-foot plot contains five trees between two and four inches in diameter, four trees between four and 12 inches in diameter, and two trees over 12 inches in diameter, the rating score is: $(5 \times 1) + (4 \times 2) + (2 \times 4) = 21$ points. The twenty-five-foot by twenty-five-foot plot contains trees worth 21 points.

Trees totaling nine points ($21 - 12 = 9$) may be removed from the plot provided that no cleared openings are created.

[b] Adjacent to other water bodies, tributary streams, significant vernal pools, and wetlands, a "well-distributed stand of trees" is defined as maintaining a minimum rating score of 16 per twenty-five-foot by fifty-foot rectangular area.

[i] The following shall govern in applying this point system:

[A] The twenty-five-foot by fifty-foot rectangular plots must be established where the landowner or lessee proposes clearing within the required buffer;

[B] Each successive plot must be adjacent to but not overlap a previous plot;

[C] Any plot not containing the required points must have no vegetation removed except as otherwise allowed by this chapter;

[D] Any plot containing the required points may have vegetation removed down to the minimum points required or as otherwise allowed by this chapter; and

[E] Where conditions permit, no more than 50% of the points on any twenty-five-foot by fifty-foot rectangular area may consist of trees greater than 12

inches in diameter.

[ii] For the purposes of this Subsection B(13)(b)[2], "other natural vegetation" is defined as retaining existing vegetation under three feet in height and other ground cover and retaining at least five saplings less than two inches in diameter at 4 1/2 feet above ground level for each twenty-five-foot by fifty-foot rectangle area. If five saplings do not exist, no woody stems less than two inches in diameter can be removed until five saplings have been recruited into the plot.

[c] Notwithstanding the above provisions, no more than 40% of the total volume of trees four inches or more in diameter, measured at 4 1/2 feet above ground level, may be removed in any tenyear period.

[3] In order to protect water quality and wildlife habitats, existing vegetation under three feet in height and other ground cover, including leaf litter and the forest duff layer, shall not be cut, covered, or removed except to provide for a footpath or other permitted uses as described in Subsection B(13)(b)[1] and [2].
[Amended 6-12-2018]

[4] Pruning of tree branches on the bottom 1/3 of the tree is allowed.

[5] In order to maintain a buffer strip of vegetation, when the removal of storm-damaged, diseased, unsafe, or dead trees results in the creation of cleared openings, these openings shall be replanted with native tree species unless existing new tree growth is present.

[6] Subsection B(13)(b)[2] does not apply to those portions of public recreational facilities adjacent to public swimming areas as long as cleared areas are limited to the minimum area necessary.

(c) At distances greater than 100 feet, horizontal distance, from a great pond classified GPA or a river flowing to a great pond classified GPA and 75 feet, horizontal distance, from the normal high water line of any other water body, tributary stream, significant vernal pools, or the upland edge of a wetland, there shall be allowed on any lot, in any ten-year period, selective cutting of not more than 40% of the volume of trees four inches or more in diameter, measured 4 1/2 feet above ground level. Tree removal in conjunction with the development of permitted uses shall be included in the forty-percent calculation. For the purposes of these standards, volume may be considered to be equivalent to basal area. In no

event shall cleared openings for any purpose, including but not limited to principal and accessory structures, driveways, lawns and sewage disposal areas, exceed in the aggregate 25% of the lot area within the shoreland district or 10,000 square feet, whichever is greater, including land previously cleared. This provision shall not apply to the shoreland general development districts.

(d) Legally existing nonconforming cleared openings may be maintained but shall not be enlarged, except as allowed by this chapter.

(e) Fields and other cleared openings which have reverted to primarily shrubs, trees, or other woody vegetation shall be regulated under the provisions of Subsection B(13).