



City of Auburn, Maine

Economic & Community
Development

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To: Auburn Planning Board
From: Megan Norwood, City Planner II
Re: Solar Energy Generating Systems in the Ag-Zone: Review Draft Ordinance
Date: May 12, 2020

I. ORDINANCE OVERVIEW – The Conservation Commission met on March 30th to discuss the draft changes to the Solar Energy Generating Systems ordinance to encompass the Ag-Zone. On March 31st, the Planning Board met to review the Conservation Commission comments. Staff has been working through the Conservation Commission comments and Planning Board thoughts to come up with the ordinance that has been included in your packets this month. Below is a breakdown of the Conservation Commission comments, Planning Board comments and ordinance language.

There are two options for this ordinance:

1. The first is the way the ordinance is presented currently. This format includes all of the requirements specific to solar for the Industrial District and Ag-Zone compiled into one lengthy standalone ordinance (Chapter 60 Article XVIII) (See **Ordinance Format: Option 1**).
2. The second is to include all of the requirements for Solar Energy Generating Systems that are specific to the Ag-Zone, under the Special Exception requirements for the Ag-Zone (Chapter 60, Article IV, Division 2 – Agriculture and Resource Protection District, Sec. 60-145(b)). For example, Sawmills are permitted as Special Exceptions in the Ag-Zone as long as they meet three specific criteria. The solar requirements would be formatted the same way. (See **Ordinance Format: Option 2**).

While there are a lot of Special Exception requirements included in the draft, Staff feels the cleaner way would be to make the necessary edits to the Solar Energy Generating Systems ordinance and include all Ag-Zone specific requirements under the Special Exception standards for the Ag-Zone (Option 2).

As part of the review process, Staff has gone through the ordinance for consistency among the proposed standards and added clarification.

As we have already discussed in prior meetings, there is a little bit of a push to try and have an ordinance in place for Developers to get on the June 9th Planning Board agenda in order to meet the PUC deadline in July for approved, shovel-ready projects. Last year the legislature passed a clean energy package that looks to add 375 megawatts of power through projects of less than 5MW, for commercial, industrial and community use. The Developers would enter into 20-year contracts to sell the energy through CMP. There are 5 procurement rounds, each for 20% of the expected total megawatts. The first round (which has the July deadline) is for projects totaling 25MW in the commercial/industrial sector and 50MW in the community-shared sector, so up to 15 total projects (assuming they are all 5MW). One project that we are aware of in the Ag-Zone would be a community-shared project. Below is a potential timeline for the ordinance process:

- City Council Workshop – April 27, 2020

- Planning Board Ordinance Recommendation to City Council – May 12, 2020
- City Council First Reading – May 18, 2020
- City Council Second Reading/Adoption – June 1, 2020
- Planning Board Review/Project Decision – June 9, 2020
 - NOTE: Applicants would still have to submit materials by the May 8, 2020 deadline to be eligible for the June 9, 2020 agenda.

Questions/Comments from the Planning Board and Conservation Commission at the April Meetings

1. **Lot Coverage Standards.** The current language proposed for the Ag-Zone limits impervious area to 30%. Impervious area does not include the photovoltaic cells, panels, arrays and inverters, provided the soil underneath the collector is not compacted and remains vegetated.
 - a. Conservation Commission Recommendation: Define vegetation and compaction.
 - b. Planning Board Comment: Agreed with defining these items.
 - c. Staff Update: Language has been included under the lot coverage section referencing Chapter 500, Appendix A(6) Permanent Stabilization which states: *If the area will not be worked for more than one year or has been brought to final grade, then permanently stabilize the area within 7 days by planting vegetation, seeding, sod, or through the use of permanent mulch, or riprap, or road sub-base. If using vegetation for stabilization, select the proper vegetation for the light, moisture, and soil conditions; amend areas of disturbed subsoils with topsoil, compost, or fertilizers; protect seeded areas with mulch or, if necessary, erosion control blankets; and schedule sodding, planting, and seeding so to avoid die-off from summer drought and fall frosts. Newly seeded or sodded areas must be protected from vehicle traffic, excessive pedestrian traffic, and concentrated runoff until the vegetation is well-established with 90% cover by healthy vegetation. If necessary, areas must be reworked and restabilized if germination is sparse, plant coverage is spotty, or topsoil erosion is evident. One or more of the following may apply to a particular site.*
 - a. Conservation Commission Recommendation: Perhaps include the surface area of the solar panels in the calculation of impervious area.
 - b. Planning Board Comment: The Board wanted to see what this could look like in the ordinance.
 - c. Staff Update: The standard used currently in the Industrial District does not count the surface areas of panels towards the impervious area percentage. The Ag-Zone itself does not have a specific lot coverage standard for structures or buildings currently. Most communities use 20-30% for lot coverage standards on Ag-land and most reference the paved, mounting block areas in those calculations, not the panel surfaces.

The issue with using panel surfaces for lot coverage is it could require the use of more land. For example, using the 5MW projects currently being sought after by the Maine PUC. Depending on the site features, these projects typically require at least 20 acres. Limit the density to 20 or 30% (measured using the panel surface) projects could instead consume 50 acres because they have to meet the more stringent lot coverage standard.

Staff would not recommend using the panels surfaces as the figure for lot coverage calculations as it could require these projects to consume more land than they would otherwise using just the impervious areas associated with the panels.

2. **Total Land Area Standards.** The standards require the Planning Board to consider other lands within the Ag-Zone that have received approval for solar projects and find that the solar project under application will not materially alter the stability of the overall land use pattern of the Ag-Zone. The mechanism for making this determination is discussed in the ordinance.
 - a. Conservation Commission Recommendation: Thought it may be preferable to have solar installations concentrated in one area of the Ag-Zone to not disturb a larger landscape (this comment was made in response to the originally proposed standard of only allowing up to 50-acres of solar projects over a 1-mile radius).
 - b. Planning Board Comment: The Planning Board did not want to see solar limited to one area of the Ag-Zone as it could become troublesome. Whoever starts will get to decide where it all ends up going. It should be open to anyone in the Ag-Zone regardless of where they are located.
 - c. Staff Update: No ordinance changes. Staff feels the total land area standard leaves it open for the Planning Board to review projects on a case-by-case basis to determine their impact on the Ag-Zone.
 - a. Conservation Commission Recommendation: Consider defining what is meant in the ordinance by the “character of the surrounding area.”
 - b. Planning Board Comment: The Planning Board has to contend with this standard elsewhere in the Site Plan/Subdivision criteria and there are no definitions for “character.” The impetus is on the Planning Board to decide. The Board is wary about adding standards to define character of the neighborhood and how that may affect the review of other projects without those specific standards.
 - c. Staff Update: No ordinance changes. Staff agrees with the Planning Board that adding specific standards describing “character” may have negative consequences when reviewing other Site Plan/Special Exception projects. Any changes would have to be consistent throughout the ordinance.
 - a. Conservation Commission Recommendation: Incorporate involving the Ag-Committee/Conservation Commission in these standards if a project is to be sited in a Resource Protection District.
 - b. Planning Board Comment: Some Planning Board members felt that the best Ag-lands *should not* be considered for solar installations at all. The Planning Board does want to hear from Ag-Zone landowners about what kinds of density would seem reasonable.
 - c. Staff Update: Language has been added to the ordinance that requires the Planning Board to request an assessment of the proposed project by the Agriculture Committee. If the project is located in the Resource Protection District, it also has to be reviewed by the Conservation Commission and both recommendations should be carefully considered. Without the creation of the Ag-Committee at the time of drafting this ordinance, Staff is hopeful that Ag-landowners will attend the Public Hearing on this item to discuss how they feel about the proposed standards.

If the Planning Board does want to move in the direction of not allowing solar installations on prime soils, the ordinance could simply say: “*No Solar Energy Generating System shall be permitted on any site that is prime farmland or which contains prime soils.*”

3. **Height Regulations.** Currently the ordinance limits all solar installations to 30 feet.
 - a. Conservation Commission Recommendation: Suggest also considering a minimum height limit based on solar ability and access to sunlight. The argument being that solar panels too low could change the hydrologic structure of the soil and affect vegetation.
 - b. Planning Board Comment: How would a minimum height limit be measured? The average height of the panel or halfway point? The concern behind this comment is about leaving the ground in the same or better condition than before the solar installation. Is height the correct metric to achieve this? The ordinance already has standards about preserving the land and perhaps those requirements could also include providing open space for air-flow, water and light.
 - c. Staff Update: Under Sec. XII, the ordinance requires that Solar Energy Generating Systems: Keep with the existing contours of the land, only use pile driven or ballast block footings, are not placed on steep slopes, and that a plan for topsoil maintenance be provided to the Planning Board. Sec. X, the ordinance requires the submission of a Vegetative Cover Plan and a survey of critical wildlife habitat. Sec. XIII, Operations & Maintenance Plan requires that the plan include prioritizing the ability to co-mingle agriculture and energy land uses. These standards do not specifically mention open space, air-flow, water and light but Staff feels as if they achieve the result of protecting the land.

5. **Clearing Standards.** The ordinance only allows clearing of natural vegetation that is necessary for the construction, operation and maintenance of a solar installation. If clearing is proposed on forestland or a parcel adjacent to prime farmland currently used for farming, clearing of forestland may be permitted so long as it does not result in unnecessary soil erosion or loss that could limit agricultural productivity on the subject property or abutting properties. The ordinance also requires a decommissioning plan be provided for the conversion of the parcel into prime farmland or forestland (if applicable), this cost shall also be included in the required financial surety.
 - a. Conservation Commission Recommendation: Wanted to ensure consistency with prime farmland vs. forested areas in the decommissioning standards. Suggested the standards be based on the availability of soils in the Ag-Zone and Auburn, the Conservation Commission also wants to ensure an adequate supply of productive soils without an impact.
 - b. Planning Board Comment: Wants the ordinance left open to provide a mechanism to convert forestland to Ag-land after the life of a project. The Board is not in favor of returning previously forested land to forest if it can be used as prime farmland.
 - c. Staff Update: Language was added (# X) requiring a decommissioning plan for the conversion of a parcel into prime farmland or forestland (if applicable), meaning depending on the individual site. The language leaves the decision up to the Planning Board to decide as to what happens in 20-years when the project has reached the end of its useful life.
 - a. Conservation Commission Recommendation: Wanted a requirement ensuring critical wildlife is addressed.
 - b. Planning Board Comment: The Board agreed.
 - c. Staff Update: The following language was added under Sec. X “*A survey of critical wildlife habitat shall be provided at the time of application, if a project is located in an area determined to be essential habitat, as defined by the Maine Department of Inland Fisheries and Wildlife, approval from the Maine Department of Inland*

Fisheries and Wildlife shall be included.” This language is also mirrored under the Chapter 500 Stormwater Management Standards.

On the critical wildlife topic, the Maine Audubon put out a study in November of 2019 about the effects of renewables on wildlife. The primary impact of solar is potential habitat loss and fragmentation. Maine Audubon recommends the following:

- Encouraging solar development within the built landscape to reduce or eliminate new habitat loss.
 - The ordinance has tried to encourage solar development within the built landscape by imposing additional standards associated with clearing for a solar project. However, the Planning Board is wary about directing solar projects to already open areas that could potentially be areas of prime soils.
 - Financial and/or regulatory incentives for utilizing degraded sites and disincentives (i.e. penalties) for developing previously undeveloped land for renewable energy. Recommend pre-identifying areas for solar development and making them available through a bidding process.
 - The disincentive in this case would be the decommissioning plan that would require the conversion of the parcel either back into forestland or prime farmland, depending on the individual sites.
 - For ground-mounted panels, recommend using post or pole-mounted solar panels rather than those imbedded in large impervious foundations. Post or pole-mounted with small “footprint” allow more native vegetation to remain, compared to those embedded in large concrete slabs. This may allow early successional habitats to remain at the base of the panels, providing habitat for certain birds, reptiles, small mammals, and insects. It also allow for easier and more successful decommissioning and restoration at the end of the life of the project.
 - This has been addressed in the ordinance under XII. Pile driven or ballast block footing shall be used to minimize disturbance of soils during installation.
 - Reducing/avoiding the use of herbicides and other pesticides to provide habitat for native plants and animals and native pollinators. Maintenance activities should be timed to protect native wildlife to the greatest degree possible. For example, if mowing is required, avoid mowing during nesting seasons and when most flowers are in bloom. By waiting until plants have gone to seed, pollinators and other species are able to utilize the site longer, and native plants are allowed to reseed.
 - The Operation and Maintenance Plan section (b) has been updated to also require a plan that avoids the use of herbicides and other pesticides on the site to provide habitat for native plants and animals and native pollinators.
- a. Planning Board Comment: Wanted to see Section X(a), clearing standards of the Ordinance extended to also include requirements to protect adjacent properties from erosion.
- b. Staff Update: Language was added also addressing abutting properties and now reads: The presence of the Solar Energy Generating System will not result in unnecessary soil erosion or loss that could limit agricultural productivity on the subject property **or abutting properties**.

- a. Planning Board Comment: Wanted some thought put into what results we do not want to achieve with clearing standards. For example, clearing of land for residential development. There should be project limits and some disincentives for other development. A sunset could be considered to limit developers ability to redevelop the land for another purpose.
 - b. Staff Update: The standards imposed for clearing and for establishing a Solar Energy Generating System in the Ag-Zone are stringent but fair. They are in place to protect the overall landscape of the Ag-Zone while also allowing a use that landowners can take advantage of. The requirements for a vegetative cover plan, critical wildlife survey, decommissioning plan to convert the parcel back into prime farmland or forestland after soil should all serve to prevent other types of development from taking advantage of cleared land for solar projects. They also open the door for the Planning Board to impose end-of-life conditions.
6. **Prime Soils Standards.** The ordinance requires a soil analysis and that the least productive agricultural soils be considered first for development unless certain criteria can be demonstrated to the Planning Board.
- a. Conservation Commission Recommendations: Thoughts that prime soils should be prohibited entirely or discouraged unless absolutely necessary. Language should be tied in allowing to use of prime soils if an investment is made in agriculture/resource protection elsewhere. Use the high intensity soil study requirement to update the map/data on type of land over in the Ag-Zone.
 - b. Planning Board Comments: Prime soils should be allowed to be used if certain needs are demonstrated. Allowing solar may preserve prime farmland if a farmer cannot currently farm, this would essentially land bank it for the future. Prime soils could later be developed into other uses – not necessarily agricultural uses and solar is preferable to other potential projects on the land. Board had concerns that the ordinance did not have a structure directing solar projects away from prime soils.
 - c. Staff Update: The ordinance does allow the use of prime farmlands if:
 - Non-prime farmland is not available on the subject property and/or;
 - The proposed site is better suited to allow continuation of an existing commercial farm on the subject tract than other possible sites also located on the subject tract, including those comprised on non-high-value farmland soils.

It also stipulates that least productive agricultural soils shall be considered first for development. A lot of communities impose tax penalties for using prime farmland as a disincentive. The standards could put a cap on the amount of prime soils that can be occupied per site, for example only 30% of prime soils on the site can be used for Solar Energy Generating Systems.

One other option for language is what they impose in Connecticut by requiring the City Council (in this case it *could* be the Planning Board) find that the project has no adverse environmental effects and that the State Department of Agriculture certifies that the project will not materially affect the status of prime farmland. Having these additional hurdles makes solar development on prime farmland more risky, time-consuming and expensive.
7. **Operation and Maintenance Plan Standards.** Requires the submission of an O&M Plan for all solar installations, also includes requirements for potential impacts to wildlife and ecosystems including Vegetative Cover Plan demonstrating the replanting of forested areas

disturbed during construction. Also prioritizes the ability to co-mingle agricultural and energy generation land uses including: apiaries, grazing or handpicked crops.

- a. Conservation Commission Recommendation: Special consideration should be given to plans that promote the comingling of agricultural uses and solar.
- b. Planning Board Comments: Incentives may take away from the ability of solar projects to be sited in other locations. The standards should not require that all previously forested land be replanted after development.
- c. Staff Update: The Operation and Maintenance Plan section of the document requires a plan prioritizing the comingling of agricultural and energy generation land uses be included. The ordinance has been reviewed for consistency and any language suggesting all previously forested land be replanted after development has been edited.

8. **Miscellaneous Ordinance Components.**

- a. Conservation Commission Recommendation: Wants to ensure the ordinance requires that all Solar Energy Generating Systems comply with other State setbacks such as wetlands and other natural resource buffer requirements.
- b. Staff Update: This is a requirement of all Special Exception projects.
 - a. Conservation Commission Recommendation: Big picture considerations should also be considered and perhaps these should include prioritizing rooftop solar close to the center of the City and in the Industrial District.
 - b. Planning Board Comment: Rooftop solar is already prioritized from a regulatory perspective to the degree it can be by not requiring Planning Board review.

II. **STAFF RECOMMENDATIONS** – Please review the two options for ordinances and decide if the Solar Energy Generating Systems standards should be under Chapter 60, Article XVIII – Solar Energy Generating Systems or if they should be under the Special Exception requirements for the Ag-Zone.

The items in red, track changes on the draft are the items that have been changed/added. Please review and offer final comments/suggestions based on the discussion in the Staff Report.

The main discussion item being that some Planning Board members feel the best agricultural lands should not be considered for solar, while others feel prime soils should be strongly discouraged. The standards could put a cap on the amount of prime soils that can be occupied per site, for example only 30% of prime soils on the site can be used for Solar Energy Generating Systems.

As discussed, a lot of communities impose tax penalties for using prime farmland as a disincentive. In Connecticut, they require the City Council (in Auburn it *could* be the Planning Board) find that a project has no adverse environmental effects and that the State Department of Agriculture certifies that the project will not materially affect the status of prime farmland. Requiring these additional hurdles would make solar development on prime farmland more risky, time-consuming and expensive for potential developers.

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