



# City of Auburn, Maine

Economic & Community  
Development

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**DRAFT: AS OF THE DELIVERY DATE OF THE PACKETS (12/2/20), THIS STAFF REPORT IS STILL IN DRAFT FORM. SEE QUESTIONS HIGHLIGHTED IN YELLOW THROUGHOUT THE STAFF REPORT. THESE WERE SENT IN AN EMAIL ON 11/25 TO THE APPLICANT.**

**Staff wanted to give the PB adequate time to review the materials while waiting for responses.**

**To:** Auburn Planning Board  
**From:** Megan Norwood, City Planner II  
**Re:** Proposed 18.9 acre, 4.995mw solar array at 1040 Perkins Ridge Road (PID 295-004), Borrego Solar Systems, Inc. on a parcel split between the Agriculture and Resource Protection and Low Density Country Residential Zoning Districts.  
**Date:** December 8, 2020



**I. PROPOSAL:** Borrego Solar Systems, Inc. on behalf of 978 Solar Development, LLC is seeking Site Plan/Special Exception pursuant to Sec. 60-45 of the Auburn Code of Ordinances to construct a 4.995MW solar array on approximately 18.9 acres at 1040 Perkins Ridge Road. The parcel is split between the Agriculture and Resource Protection and Low Density Country Residential Zoning Districts.

One item to discuss up front, Solar Energy Generating Systems are permitted as Special Exception uses in the Ag-Zone, the ordinance takes a tiered approach to uses in the various zoning districts which affects this project. The Low Density Country Residential Zoning

District allows all uses permitted by Special Exception in the Ag-Zone. The Planning Board did not consider solar projects in the residential zoning district at the time of creating/adopting the solar ordinance. Most of the Low Density Country Residential properties abut the Ag-Zone and are used for residential purposes with agricultural uses in the rear but this is something to consider for future solar projects.

The Planning Board offered a recommended ordinance on Solar Energy Generating Systems for the Agriculture and Resource Protection District, which was approved by the City Council on June 1, 2020. Below are the standards the Planning Board created for Solar Energy Generating Systems in the Agriculture and Resource Protection District and the information the Applicant provided on each.

**Chapter 60, Article XVIII. – Solar Energy Generating Systems. Section 60-1430 (Approval):**

- I. *Yard Requirements.* The requirements in this section are not applicable to solar arrays in the Ag-Zone, they have their own set of requirements for setbacks (see below).
- II. *Lot Coverage.* The standards apply to the paved, mounting block, or otherwise impervious areas of the site. Photovoltaic cells, panels, arrays, and inverters are not considered impervious areas provided the soil underneath the collector is not compacted and remains vegetated in accordance with the permanent stabilization standards in Chapter 500 (**see below**) for the 30% lot coverage requirement specific to solar arrays in the Ag-Zone.
- III. *Height Regulations.* The total height of solar arrays including accessory structures cannot exceed 30 feet. **The maximum height of the proposed solar array is 12 feet.**
- IV. *Technical and Safety.* A copy of the as-built site plan for the solar array is required to be provided to the Fire Prevention Officer with all means of shutting down the solar array clearly marked. **This will happen after the solar array has been constructed, the Applicant has been in contact with the Fire Prevention Officer.**
- V. *Maintenance.* The facility is required to be maintained in good condition throughout the life of the project, this includes both infrastructure and access ways. **This is something the City will monitor after the solar array has been constructed, if there are issues, the City will cite this provision and request the issues be resolved. An Operation and Maintenance Plan has been provided.**
- VI. *Glare.* This section requires solar arrays to minimize or negate solar glare that could impact nearby properties or roadways, it also has specific requirements for solar arrays in the Airport Overlay. **This parcel is not located within a 2 nautical mile radius of the Auburn Lewiston Municipal Airport so a glare study is not required. The Applicant did provide a Solar Glare Hazard Analysis tool report which finds that there will not be any glare impacts at the airport. The residence to the southeast of the solar project would see minimal glare during the year, existing vegetation will help minimize glare. The modules are also coated with an anti-glare material. A notice was also filed with the FAA.**
- VII. *Visual Impact.* This section requires the applicant to make a reasonable effort (determined by the Planning Board) to minimize any visual impacts associated with the solar project. In making this determination, the board shall consider the size, location and topography of the site, characteristics of the surrounding property and the amount of type of development on the properties in determining how much screening and buffering is appropriate. **The project itself is set back over 300 feet from Perkins Ridge Road. A tree-line and wetland area abuts the property in the rear. Where the area is used for an apple orchard, there are no tree-lines on the sides or front of the property (aside from the apple trees).** EMAIL TO APPLICANT: To address the visual impact requirements of the ordinance, I understand you are preserving the existing tree line and currently it is an apple orchard which doesn't necessarily provide a lot of buffering like a forested area would but is there anything proposed for the residences on the sides that abut the project? Thinking Albrecht/Finnerty properties here. It looks like the Naum property is set back quite a ways from the project and may already be buffered. The ordinance requires that the Planning Board determine the applicant has made a reasonable effort to minimize any visual impacts. As part of that determination, you should also consider the characteristics of the surrounding properties. It looks like most of this area is open apple

orchard land so buffering doesn't really exist between the properties anyways but it's something I want to make sure you are prepared to discuss with the Planning Board if it comes up.

- VIII. *Lighting*. This section requires that lighting be limited to that required for safety and operation and that it be shielded from abutting properties and directed downward. **Two 10-foot tall motion-activated lights are provided at the electrical equipment areas, they are directed downward and away from the abutting residential uses.**
- IX. *Clearing*. When possible, in unbuilt areas, requires that Solar Energy Generating Systems maintain the permeability of the ground and that clearing of natural vegetation be limited to what is necessary for the construction, operation and maintenance of the Solar Energy Generating System. **(See below).**
- X. *Operation and Maintenance Plan*. Requires the submission of an Operation and Maintenance Plan for the Solar Energy Generating System. **An Operations and Maintenance Plan has been provided (Appendix Q). The plan has proper measures to ensure the facility will be maintained and kept in safe working order (see below for O&M Plan requirements specific to the Ag-Zone).** **EMAIL TO APPLICANT: I think the O&M Plan you provided is fine and addresses the ordinance requirement but the way it's presented (as a pricing summary) may be troublesome to the board. Can the format be changed to a more formal O&M Plan either before the meeting or as a condition of approval for before construction begins?**
- XI. *Fire & Electrical Codes*. Requires all Solar Energy Generating Systems to be installed in compliance with the photovoltaic systems standards of the National Fire Protection Association and National Electrical Code. **EMAIL TO APPLICANT: I reached out to the City Electrician and David O'Connell with the FD on applicable codes. I noticed you listed them on the title sheet but I didn't see the NFPA standards listed. The second part of the Staff Report (staff comments), includes Davids breakdown of the NFPA standards as they apply to solar projects and I thought it would be good to go through those and make sure they've been addressed (or can be addressed with conditions) before the meeting.**

**Sec. 60-1431. Abandonment or Decommissioning standards, including the requirement of a financial surety to cover the cost of facility removal in the future.**

The Applicant has provided a decommissioning estimate and plan that appropriately describes how the project will be removed and the site restored at the end of the project. It is important to note that the ordinance has requirements for decommissioning of solar arrays specific to projects in the Ag-Zone. **EMAIL TO APPLICANT: I noted that the decommissioning plan includes an estimate for seeding disturbed areas and removing the gravel road but I didn't see any figures for plantings or the means necessary to reestablish prime farmland (however that may look in the future).**

**Chapter 60, Article IV, Division 2, Agriculture and Resource Protection District, Sec. 60-145. – Use Regulations.**

**(B) Special Exception Uses. Ground-Mounted and Dual-Use Solar Energy Generating Systems greater than one acre in total land area as defined in Sec. 60-1425, subject to the following conditions:**

- a) Must comply with all of the standards in the Solar Energy Generating Systems ordinance (see above).
- b) *Setback Requirements*. Solar arrays are required to comply with the same setback requirements for buildings in the Agriculture/Resource Protection District, which are Rear/Front: 25 Feet and Side 15 Feet. **The project meets the setback requirements, at the**

**closest point, 242 feet is provided in the front, 164 feet is provided for the side and 103 feet is provided for the rear setback.**

- c) *Lot Coverage* cannot exceed 30% as defined above (the standards apply to the paved, mounting block, or otherwise impervious areas of the site. Photovoltaic cells, panels, arrays, and inverters are not considered impervious areas provided the soil underneath the collector is not compacted and remains vegetated in accordance with the permanent stabilization standards in Chapter 500). **The area of the site considered impervious coverage is 24,332 square feet (gravel) with 2,600 square feet for concrete equipment pads. The site is 57 acres, making the impervious lot coverage about 1.1%. EMAIL TO APPLICANT: For lot coverage, can you please confirm that the impervious figure also includes the augured screw foundations? I saw the breakdown for the equipment pads and gravel roads but not the foundations.**
- d) *Total Land Area*. This standard requires the Planning Board look at the total amount of land area in the Ag-Zone that is proposed and currently used for solar and make a recommendation that a new solar array will not materially alter the stability of the overall land use pattern of the Ag-Zone. In making this determination, the Planning Board will also consult with the Ag-Committee and Conservation Commission. **This provision will become applicable once 1% of the Ag-Zone is consumed by solar which would be about 200 acres. It does not apply to this project.**
- e) *Existing Grid Infrastructure*. This provision considers the location of existing grid infrastructure and limits the need to extend additional infrastructure in the Ag-Zone. **The project is proposed to connect to an existing CMP line on Perkins Ridge Road. A CMP Interconnection Agreement has been included in your packets.**
- f) *Clearing*. These standards allow clearing for solar arrays under certain conditions:
1. 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. **The Applicant has stated that minimal grading will be necessary to construct the gravel access roads and electrical equipment areas. Topsoil that is removed for the road construction will be used elsewhere on the parcel. The area to be cleared is an existing apple orchard, not forested area.**
  2. At the time of decommissioning of any Solar Energy Generating System approved by the Planning Board, the current sitting Planning Board shall review the site and proposed decommissioning plan for the conversion of the parcel into prime farmland or forestland, as applicable under the current ordinance standards. **A decommissioning estimate has been provided in the packet (see discussion above).**
  3. A survey of critical wildlife habitat is 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, an IF&W recommendation shall be secured before a Planning Board ruling. **The Applicant reached out to the Maine Department of Inland Fish and Wildlife and they have not mapped any essential habitats in the area of the project. They did recommend a survey be conducted of any significant vernal pools associated with the project. Where the project itself is not located in any wetland areas and is an existing apple orchard currently, it is unlikely the project will affect any vernal pools. A letter from the Maine Department of Agriculture, Conservation and Forestry was also provided which states there are no rare botanical features documented within the project area. The ME Historic Preservation also provided a letter which was attached separately stating that there are no historical features in the area.**
- g) A Vegetative Cover Plan is provided that demonstrates, where feasible, the replanting of forested areas disturbed during construction and preservation of prime soils throughout the life of the project. **A Vegetative Cover Plan was not specifically provided, however, the**

**Applicant has indicated the areas will be re-seeded with a pollinator seed mix. EMAIL TO APPLICANT:** In response to your question about the vegetative cover plan. The ordinance does not specifically require a written plan per se, it requires some mechanism of demonstrating that you will replant any forested areas disturbed **and preserve prime farm soils** throughout the life of the project. You indicated re-seeding with a pollinator seed mix - is there anything else proposed to ensure the prime soils aren't disturbed? My concern is removing the stumps and root systems of all the apple trees, causing a loss of topsoil and likely some erosion. What measures will be in place to ensure the prime farmland remains on the site for the next 20 years and it isn't degraded? See below for the topsoil maintenance plan question.

- These kind of go hand in hand, can you please talk through your process for siting the installation where you did to address the standard that the least productive ag-soils be considered first for solar? I think it is pretty obvious that you are removing the apple orchard which is not growing well and did not want to have to clear forested areas for the solar installation. The PB is also very interested in this idea of "land banking" and I think this project is a good example of it where you are opening up an area of prime farmland to be farmed in the future that is not currently being used to its full potential. You could include this in that discussion.
  - Can you also outline the process for how topsoil will be preserved/maintained? The ordinance requires a plan for topsoil maintenance, I think this can be included in the O&M Plan or under a separate cover as a brief paragraph.
  - The ordinance requires a plan prioritizing the ability to co-mingle agriculture and energy generation uses. You indicated that you don't have a plan currently but can you speak to the use of other areas of the property to address this? Are other areas being farmed currently, are there apple trees that are still producing well, etc.
- h) *Prime Soils.* These standards are considerations for prime soils and a soil analysis requirement. It stipulates that the least productive ag-soils be considered first for development unless there is non-prime farmland available on the site. **About half of the site contains prime soils. The parcel is not being farmed currently and the existing apple trees are older and not growing well. The solar installation is proposed to be located almost entirely on the area of prime farmland. A large portion of the least productive soils is forested and would require clearing to accommodate the solar installation, whereas the apple trees are already not thriving and will likely be removed for an agricultural use in the future. When the Planning Board was discussing the creation of a solar ordinance, one of the ideas discussed was this concept of land banking, essentially preserving prime farmland to be used once again in the future. In this case, the apple orchard which is not being used is sitting on top of prime farmland that could be used for farming in the future if the area was cleared. EMAIL TO APPLICANT: See (G) Above**
- i) Additional requirements that ensure the following:
1. Siting of the overall facility and individual panels shall keep with the existing contours of the land, and
  2. Only pile driven, or ballast block footing shall be used so as to minimize the disturbance of soils during installation, and
  3. To the extent possible, infrastructure shall not be located on steep slopes, and
- The project has met these requirements. Only minimal grading is proposed for the access road and electrical equipment areas, augured screw foundation is proposed so no excavation is required and they are not proposing to construct on any steep slopes.**
4. A plan for topsoil maintenance shall be provided at the time of application to the Planning Board.



**A topsoil maintenance plan was not included in the materials provided, the Applicant is proposing to maintain the existing topsoil except for removing the portions required for the access road.**

**EMAIL TO APPLICANT: See (G) Above**

- j) Operations and Maintenance Plan. There are also two additional requirements to be included in the Operations and Maintenance Plan including:
  - 1. A plan prioritizing the ability to co-mingle agricultural and energy generation land uses including but not limited to: apiaries, grazing or handpicked crops. **They do not have a plan for prioritizing the co-mingling of agricultural and energy generation land uses. EMAIL TO APPLICANT: See (G) Above**
  - 2. A plan that provides habitat for native plants and animals and native pollinators. **The Applicant agrees to a Condition of Approval that exclude the use of herbicides, pesticides and insecticides as part of the project. They are also maintaining existing vegetative buffers in the rear of the project.**

## **II. DEPARTMENT REVIEW:**

- a. *Police* – No comments received.
- b. *Auburn Water and Sewer* – No comments received.
- c. *Fire Department* – Comments were not provided specifically for this project, below are comments that were provided for previous solar projects listing the NFPA requirements for the Applicant to address.

### **NFPA 1, Edition 2018, adopted by the city on 01/01/2018**

- 1. A vegetation Management Plan or noncombustible base needs to be added. Has a vegetation management plan been submitted? If not what will the surface be finished with? This is to prevent forest fires from damaging the system, or the system causing a forest fire. Damage from weeds and plants can also cause damage to the photovoltaic system, which in turn could create a fire.

**11.12.3.2\* Vegetation Management Plan.** A vegetation management plan or noncombustible base acceptable to the AHJ shall be approved and maintained under and around the installation where required by the AHJ (Authority having Jurisdiction).

- 2. Clearance around the installation shall be 10 ft.

**11.12.3.1\* Clearances.** A clear area of 10 ft (3048 mm) around ground-mounted photovoltaic installations shall be provided.

- 3. Road access is too narrow (14-18 ft), requires 20 ft. If there was a forest fire we would not be able to gain access to the site. Also the road would need to support vehicles.

**18.2.3.5.1.1\* Fire department access roads** shall have an unobstructed width of not less than 20 ft (6.1 m).

- 4. A turnaround or hammerhead would be required that meets the following:

**18.2.3.5.4 Dead Ends.** Dead-end fire department access roads in excess of 150 ft (46 m) in length shall be provided with approved provisions for the fire apparatus to turn around.

- d. *Code Enforcement (Electrical)* – Comments were not provided specifically for this project, below are comments that were provided for previous solar projects addressing the electrical code.
  1. Large-Scale (PV) Power Production Facilities is covered under the National Electrical Code Article 691 and requires a engineered designed. Will the project have plans submitted by an electrical PE?
  2. Who is the PE/ firm providing the electrical drawings?
  3. All applicable sections of the NEC shall be followed including listing/marketing of all solar equipment Nationally Recognized Testing Laboratory (NRTL).
  4. Who is the installing electrical contractor?

The state will most likely adopt the 2020 NEC on Jan. 1, 2021. The city would require drawings and installation reflecting the 2020 NEC when Maine finally adopts the new code. I will send out a notice once the state has adopted the 2020 NEC. If permits are obtained prior to the state's adoption I will allow the use of the 2017 NEC for this project.

- e. *Engineering* – Requires a performance bond for erosion controls and site access (see condition below).
- f. *Addressing* – **EMAIL TO APPLICANT:** I believe I mentioned this to you already but the Addressing Officer, Rosemary Mosher will need to create an E-911 plan with you for the solar project to differentiate that portion of the parcel from the residence and fruit barn.

**II. PLANNING BOARD ACTION** – Sec. 60-1277. – Objective. In considering a site plan, the Planning Board shall make findings that the development has made provisions for:

- (1) Protection of adjacent areas against detrimental or offensive uses on the site by provision of adequate surface water drainage, buffers against artificial and reflected light, sight, sound, dust and vibration; and preservation of light and air;
- (2) Convenience and safety of vehicular and pedestrian movement within the site and in relation to adjacent areas;
- (3) Adequacy of the methods of disposal for wastes; and
- (4) Protection of environment features on the site and in adjacent areas.

Sec. 60-1336. – As conditions prerequisite to the granting of any special exceptions, the board shall require evidence of the following:

- (1) That the special exception sought fulfills the specific requirements, if any, set forth in the zoning ordinance relative to such exception.
- (2) That the special exception sought will neither create nor aggravate a traffic hazard, a fire hazard or any other safety hazard.
- (3) That the special exception sought will not block or hamper the master development plan pattern of highway circulation or of planned major public or semipublic land acquisition.
- (4) That the exception sought will not alter the essential characteristics of the neighborhood and will not tend to depreciate the value of property adjoining and neighboring the property under application.
- (5) That reasonable provisions have been made for adequate land space, lot width, lot area, stormwater management in accordance with section 60-1301(14), green space, driveway layout, road access, off-street parking, landscaping, building separation, sewage disposal, water supply, fire safety, and where applicable, a plan or contract for perpetual maintenance of all the common green space and clustered off-street parking areas to ensure all such areas will be maintained in a satisfactory manner.
- (6) That the standards imposed are, in all cases, at least as stringent as those elsewhere imposed by the city building code and by the provisions of this chapter.

- (7) That essential city services which will be required for the project are presently available or can be made available without disrupting the city's master development plan.

**III. STAFF RECOMMENDATIONS** – The Staff Report discusses the standards required by both the Solar Energy Generating Systems ordinance and the Special Exception requirements for solar installations in the Ag-Zone. There are a few questions listed in the Staff Report for the Planning Board to consider as part of your review of this project. Staff recommends the Applicant answer the questions in yellow before a decision is made.

If the questions have been answered to the satisfaction of the Planning Board, Planning Staff recommends the Planning Board find that the application meets the requirements of Article VI, District Regulations and that the application meets the requirements of Sec. 60-1277 (Site Plan Objectives) and Sec. 60-1336 (Special Exception Conditions) with the following conditions:

1. All bonding and inspection fees shall be paid and a notice to proceed issued by the Engineering Department before the start of construction.
2. An Addressing Plan shall be provided for the area of the property that will be used for the solar project.
3. No herbicides, pesticides and insecticides shall be used as part of the project.
4. Any other conditions that arise from the questions.

***Suggested Motion:*** I make a motion to approve the Site Plan/Special Exception by Borrego Solar to construct an 18.9 acre, 4.995MW solar array at 1040 Perkins Ridge Road (PID: 295-004) on a parcel split between the Agriculture and Resource Protection and Low Density Country Residential Zoning Districts, with the following conditions:

1. All bonding and inspection fees shall be paid and a notice to proceed issued by the Engineering Department before the start of construction.
2. An Addressing Plan shall be provided for the area of the property that will be used for the solar project.
3. No herbicides, pesticides and insecticides shall be used as part of the project.
4. Any other conditions that arise from the questions.

Megan Norwood

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City Planner II