



December 1, 2020

Ms. Megan Norwood, City Planner II
City of Auburn Planning Department
60 Court Street
Auburn, ME 04210

RE: **Site Plan Review Application**
1040 Perkins Ridge Road Solar
Auburn, Maine

Dear Megan:

Borrego Solar Systems, Inc., on behalf of 978 Solar Development, LLC, is pleased to submit our responses to the City of Auburn's staff report/comments dated November 25, 2020. Our responses are presented at the end of this letter and are underlined.

We hope this satisfies staff comments and we look forward to the December 8th meeting with the planning board. If there are any more clarifications needed please do not hesitate to contact me at 508-983-4996 or dalbrecht@borregosolar.com.

Sincerely
Borrego Solar Systems, Inc.

David M. Albrecht, P.E.
Principal Civil Engineer

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). Any sort of buffering on Albrecht/Finnerty/Naum (Setback quite a ways) side abutters? We are not proposing any buffering at this time. Existing apple trees will remain that are located outside the fence. We have been successful by constructing the fencing (7-foot high) with wood colored slats. **What about residences on property proposed for solar?** The landowner has reviewed the plans and is ok with the location/proximity to structures. **Characteristics of surrounding properties – open farmland.****
- 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). The O&M Plan is not the typical format we would see, it is prepared as a pricing summary. Staff recommends the O&M Plan be formalized before construction is allowed to begin at the site.** The final O & M plan is not developed until the system owner is determined. At that point we submit an O & M proposal to the system owner based on their requirements. We support a condition where the O & M plan is submitted prior to construction.
- 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. **The applicable codes are listed on the Title Sheet (T-1) for the project with system descriptions and energy storage. The NFPA is not listed, Staff recommends reaching out to the Fire Department to ensure the installation is in compliance with the NFPA codes (emailed building/electrical/fire).** We have contacted David O'Connell and discussed the project. We believe the plans are in order and Mr. O'Connell has accepted them.

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 AgZone. **It requires that the current sitting Planning Board at the time of decommissioning review the plan and determine if the parcel should be converted into prime farmland or forestland, as applicable under the current ordinance standards at the time. The decommissioning plan includes an estimate for seeding disturbed areas and removing the gravel road but does not include any figures for plantings or the means necessary to reestablish prime farmland.** Once the system is removed the disturbed areas are reseeded and allowed to revegetate. The existing topsoil is not removed during construction or decommissioning. See Appendix L.

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%. Confirm this also includes augured screw foundations.** The number of screws is 2,472 and the area associated with the 2 1/2" diameter screws totals 84 sf. This results in a total area considered impervious to be 27,016 sf and is 1.08% impervious lot coverage.
- 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:
 - 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.**
 - 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).**

A survey of critical wildlife habitat is provided at the time of this application, if a project is located in an area to be 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. No response from Historic Preservation Commission? Looking for site plan and photos of buildings 50 years or older located on or adjacent to the site. The site was reviewed for vernal pools and none were found. The MHPC response was emailed to the city on November 25, 2020. There were no historical or archaeological concerns.**

- 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. What about preservation of prime soils throughout life of project?** No topsoil will be removed from the site during construction. The topsoil excavated to construct the gravel roads will be used elsewhere on site to fill in stumped areas. The prime farmland soils will be maintained throughout the life of the system by the following techniques:
- Utilizing drilled augured screws to minimize soil impacts
 - Minimize gravel road width to 14 feet
 - Maintaining the existing grass seed bank by not removing the soil
 - De-compacting the soils prior to the end of construction and allowed to recolonize those areas
 - Maintain by mowing 2-3 times annually. This will be akin to a hay field
 - Re-seeding the site (where needed) with legumes and clover which are nitrogen fixing plants.

It should be pointed out that this orchard (as many were) was likely treated with lead arsenate (arsenic) to treat insects damage.

- 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. Talk through your process of siting the**

installation where it is (i.e. not clearing forested areas, buffering, land banking etc.) The project location was based on the following:

- Interested landowner. The landowner has other parcels in the vicinity, and they all had prime farmland soils. This was the best location for solar.
- 3-phase power nearby (its directly on Perkins Ridge Road)
- Interconnection feasibility (distance to substation)
- Minimized earth disturbance (no grading aside from road and equip. areas)
- Minimized wetland impacts (none on the project)
- Minimized tree clearing (forests)
- Keeping project distant from the road and abutters

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 We will not be regrading any portion of the site.
2. Only pile driven, or ballast block footing shall be used so as to minimize the disturbance of soils during installation, and Agreed. The foundation consists of drilled screws.
3. To the extent possible, infrastructure shall not be located on steep slopes, and There are no steep slopes associated with the project.

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. Staff recommends outlining the process for how topsoil will be preserved/maintained. See above.

- i) 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. Apple trees currently being farmed? What about crops on the property? Fruit barn? We do not currently have a plan to co-mingling with ag uses and grazing. This is a system owner's choice and is uncommon in New England.
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. We agree with the condition.

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. During the conversation with David O'Connell we agreed that the site would be maintained (mowed) 2-3 times annually to keep vegetation down. We also agreed that there was enough room (20-foot minimum) between the racking and the fencing. No mowing necessary around the outside of the perimeter fence.

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). David O'Connell had no issues with a vegetative base as long as it was maintained (mowed) 2-3 times annually.

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. We are providing 20 feet between the racking and the fencing. There are no trees located within 10 feet of the perimeter fence.

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 our vehicles. The width of our road (14') was not an issue for David O'Connell. The turnarounds are 20 feet in width and radii meet NFPA requirements. There is no forested areas and the site has 360° access around the outside of the project.

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

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. These are designed in accordance with NFPA-1 (Exhibit D) and were acceptable to David O'Connell.

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 an engineered design. Will the project have plans submitted by an electrical PE? The electrical design will be included in the building permit set.
2. Who is the PE/ firm providing the electrical drawings? TBD
3. All applicable sections of the NEC shall be followed including listing/markings of all solar equipment Nationally Recognized Testing Laboratory (NRTL). Understood.
4. Who is the installing electrical contractor? TBD

- e. *Engineering* – Requires a performance bond for erosion controls and site access (see condition below). Understood.
- f. *Addressing-* Will need to coordinate with the Addressing Officer on a plan for addressing the solar portion of the site for E-911 purposes. Understood. We submitted this request to the city on December 1, 2020.