

Andrews Survey & Engineering, Inc.

Land Surveying • Civil Engineering • Site Planning

February 11, 2019

Wales Planning Board
3 Hollow Road, P.O. Box 834
Wales, MA 01081

**Re: *Revised Planning Board Submission
Large-Scale Solar Photovoltaic Facility
40 Sizer Drive, Wales, MA
ASE Project No.: 2018-137***

Dear Board Members:

On behalf of Sunpin Holdings, LLC, Andrews Survey & Engineering, Inc. (ASE) respectfully submits the following enclosed items in support of a revised submittal package for the proposed Large-Scale Photovoltaic Facility at 40 Sizer Drive.

- Response to Peer Review Comments
- Revised Plan Set
- Revised Stormwater Management Report
- Equipment Specification (Inverter Spec, Module Spec, Racking Spec, Transformer Spec, Single-Line drawing, Site control documentation (lease agreement), O&M, proof of submittal to utility (Interconnect Application Payment), and Proof of Insurance.

We hope this serves your needs at this time. Should you have any questions or require additional information, please contact this office.

Very truly yours,

ANDREWS SURVEY & ENGINEERING, INC.



Kristen Page, EIT
Project Engineer

Enclosure(s)

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Andrews Survey & Engineering, Inc.

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February 8, 2019

Wales Planning Board
3 Hollow Road, P.O. Box 834
Wales, MA 01081

**Re: *Peer Review Comment Responses*
 Large-Scale Solar Photovoltaic Facility
 40 Sizer Drive, Wales, MA
 *ASE Project No.: 2018-137***

Dear Members of the Board:

Andrews Survey & Engineering, Inc. ("ASE") has received comments submitted to your office by Weston & Sampson (W&S) dated January 4, 2019 from their review of the above referenced project. The promptness of their review is appreciated. ASE responses to peer review comments have been provided in **bold** font below. The comment numbering has been maintained.

General

The only means of access into the site is via Sizer Drive – a two-way narrow paved roadway that is located within an area that is primarily residential. The roadway is narrow and there appears to be limited ability to turn around at the end of Sizer Drive. Vehicle access by fire department equipment should be explained. In addition, there is no area or areas identified for equipment and solar supply laydown and temporary field storage.

The site is currently forested, and trees and vegetation will need to be removed. There is no staging area or erosion controls indicated on the plans. The stormwater plans are being reviewed and comments are included.

We have widened the proposed driveway on site to have a 20' wide reclaimed gravel surface with a 1' gravel shoulder on each side for a total width of 22'. ASE contacted the fire chief and briefly spoke with him regarding the length of their longest truck. We have provided a turn around at the end of the driveway to allow for the 33' apparatus to back up and turn around. We have not received further comment from the fire chief. A temporary laydown area and field storage will be situated within the proposed work area where determined by the site contractor selected to perform the work. This information can be provided to the Planning Board prior to the start of construction.

Conservation Commission

While a filing with the Wales Conservation Commission has not yet been submitted, any work in the resource area protected under the Wetlands Protection Act should be identified. Safeguards to limit impacts to the stream and bordering vegetated wetlands should be reviewed as part of the storm management plan. Notes on the plan prepared by Andrews Engineering indicated 872 square feet of wetland disturbance with 1052 square feet of wetlands replication. The replication is located upstream of the disturbance.

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A Notice of Intent application is ready to be submitted to the Wales Conservation Commission and all work within the resource areas protected under the MA Wetlands Protection Act have been identified.

Zoning By-Law

1. Solar array development is included in the Town's Zoning Bylaw and provide direction on the requirements of solar array development. The Town by-laws have "as-of-right-siting" but the site plan is subject to review of the Planning Board to determine conformance with the bylaws.

No response required.

2. Section 7.13.3 Size of the Zoning bylaws limit a maximum of 20 acres of area including all arrays, structures and buildings. Wetlands are not to be included within these 20 acres. While the supporting documents and plans identify that 19 acres will be developed. The delineated area of these 19 acres also include some wetlands. This should be clearly identified on the plans. Also, the area that is set aside per 7.16.2 B – specifically what other land will be set aside "to remain in substantially its natural condition without alteration" is not included or identified.

The plans have been revised and the new areas of disturbance are 13.8 acres inside the proposed tree line. The area within the proposed fenced that contains the solar array and associated equipment is 7.8 acres. There is a wetland crossing within the 13.8 acres that is approximately 694 sq. ft. The land of equal area to be protected shall be the land east of the project area, being a portion of the remaining 100± acre property. Demarcation of this area can be performed if required by the Planning Board.

3. Sheet C2.0, C3.1 and C3.2 were evaluated and compared to the required setbacks listed within section 7.14 Dimensions and Density Requirements. Based on the plans submitted the "front yard" setback is from Sizer Drive. The Zoning calls for front yard setbacks of at least 200 feet; side yard of at least 100 feet; and rear yard at least 150 feet. The setbacks appear to be met. The zoning requirements state that a complete map of the entire parcel should provide. The entire 100.3-acre parcel is depicted in the two sheets provided as required by Planning Board Requirements.

No response required.

4. Per section 7.16.2 (C) all fencing is required to be a minimum of 6 inches above the ground. In figure C-4.3 – the gate detail is shown with a 6" gap, but the other fencing is shown on or just above the ground surface.

All fence details have been revised to show a 6" gap at the bottom.

5. The plans should include the proposed areas of clearing that are not within the wetland buffer zone, the amount of area within the buffer zone and the area within the riverfront and riparian zones.

There are no Riverfront or riparian zones on this site as the stream has been delineated as intermittent. 13,760± s.f. will be stumped or cleared within the 50-foot wetland buffer zone and 102,990± s.f. will be stumped or cleared within the 100-foot wetland buffer zone.

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Sunpin Holdings, LLC
40 Sizer Drive, Wales, MA

6. The bylaws require screening in the front of the array but since the property owned across Sizer Dr is part of the same lot, only fencing may be required at the discretion of the Board.

The proposed tree line along the northern property line has been revised to provide more screening to the abutting properties.

7. There was an Operation and Maintenance Plan included (Wales Zoning Bylaw 7.12)

No response required.

General Engineering

8. The plans indicate that the site existing vegetation will be cleared, and stumps removed over the entire array area. The work will impact both buffer zone and river front area. The proximity and impacts to wetland resource areas and the buffer zones rest with the Conservation Commission and MassDEP. There is reason to believe that the area proposed for clearing is located where site access is proposed for the development that area outside of the conservation commission jurisdiction. Weston and Sampson calls the applicants attention to a policy issued by Mass DEP in September 2019. "MassDEP Wetlands Program Policy 17-1: Photovoltaic System Solar Array Review." Beyond direct resource area and buffer zone impacts, sediment and erosion control is always a primary concern for ground mounted- solar projects.

The existing site is primarily wooded. The project proposes to clear and grub trees inside the proposed fence line and only cut trees outside the fence line, with stumps to remain, except where stormwater management facilities are proposed. There is proposed work to be done within buffer zones to existing wetland resource areas, but there are no Riverfront areas within the proposed work area. The applicant is aware of the MassDEP policy and has revised the erosion control with the policy as guidance. Erosion control barriers has been added throughout the site at the toe of slopes and around the proposed drainage basin and on both sides of the proposed driveway to prevent washout and erosion until the site can be stabilized.

9. It was noted that the wetland flagging was completed and fairly recently as the bright blue tape was not faded or decomposed.

The wetland flag numbers have been added to the revised plans.

10. If the project is approved, then Weston & Sampson recommends that the Planning Board include a condition in its decision that requires periodic monitoring and construction activities on behalf of the Planning Board, to ensure compliance with the order of conditions. An inspection form within the O&M plan is acceptable but should be evaluated during construction if major site conditions and changes warrant ant additions or deletions, the applicant should notify the Planning Board of any required changes to the plan.

The applicant has no objection to a condition that requires periodic inspections during the construction phase of the project.

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40 Sizer Drive, Wales, MA

11. The Operation and Maintenance Plan was generic in nature but acceptable. As required by the local bylaw with projects that require removal of trees, the area outside of the array should be replanted with wildflower mix acceptable to the Board. There was no discussion on mowing or where the mowed grass would be disposed or how it would be handled.

The revised plans specify a wildflower seed mix to be planted on the 20-foot perimeter along the inside of the fence, outside of the fence stumps will remain and seed will be placed where needed on exposed soils.

12. There was no decommissioning plan included in the documents. We recommend that the applicant provide a decommissioning plan and cost estimate to remove at the end of its useful life.

Sunpin Holdings, LLC shall provide the Planning Board with a decommissioning plan and cost estimate.

13. The transition from overhead to underground wiring is not well documented on the plan. Particularly in the area of the existing service line. The plans make note of pole removal and new poles being installed without location or number of poles. The plan suggests that some of the wiring will be underground. It is not clear from the drawings.

The revised plans illustrate that there will be underground wiring from the southern and northern arrays to a new riser pole near the existing residence. From that location, the wires will be overhead, spanning through a series of new poles on the project site that will accommodate various equipment owned by the project owner and the utility company, to the last existing pole on Sizer Drive. New overhead wiring is anticipated to be required along Sizer Drive and the need for replacement utility poles to support the new 3-phase wiring shall be determined by the utility company as part of their system evaluation.

Stormwater Report Comments

1. The report shall include channel design calculations for the proposed drainage swales for both hydraulic capacity and stability of vegetative (grass) lining.

The proposed swales have been entered into the stormwater model and analyzed for hydraulic capacity and velocity. The results are included within the revised Stormwater Management Report.

2. For locations of proposed infiltration BMPs, the report has not indicated whether a soils evaluation has been conducted in accordance with the Massachusetts Stormwater Handbook (Volume 3, Chapter 1) to include the following:
 - Evaluation by a Competent Soils Professional
 - Soil Textural Analysis using NRCS methods
 - Depth to seasonal high groundwater
 - Presence of rock or restrictive layer below proposed infiltration BMP

If an evaluation has not been conducted, then it is recommended that notes be added to the plans requiring it be performed prior to construction, and that the results be evaluated by the design engineer for consistency with the infiltration/detention design. Design revisions shall be reported to the Town of Wales.

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The proposed stormwater management system has been redesigned to have only one (1) stormwater basin. The bottom of the basin proposes a maximum cut of approximately 4 feet to an elevation of 834.0, which is approximately 10 feet above the elevation of the adjacent wetland. A conservative exfiltration rate of 0.27 in/hr was used based on the Hydrologic Soil Group "C" rating on the NRCS soil maps.

3. For Stormwater Standard 10, an Illicit Discharge Compliance Statement was not included with the submission, therefore one must be submitted prior to the discharge of stormwater to post-construction BMPs. The applicable check box must be updated in the Checklist for Stormwater Report (Page 8 of 8).

Illicit Discharge Compliance statement is not signed but will be and submitted prior to construction, the applicable check box in the Checklist has been updated.

4. A culvert analysis for the proposed twin 24" HDPE culverts shall be included in the stormwater report for review.

Stormwater has been redesigned, the wetland crossing has been revised to a 3-sided box culvert. The two 24" HDPE are no longer part of the design.

5. A NPDES General Permit for the discharge of stormwater from construction activities will be required for the proposed project and will require approval of a Stormwater Pollution Prevention Plan (SWPPP) prior to construction.

Prior to the start of construction, ASE shall assist with the submission of a NPDES Construction General Permit to the U.S. EPA and the preparation of a SWPPP.

6. In the HydroCAD analysis, for Detention Basin 1, the emergency spillway width dimension does not match that indicated on Detail 6 (C-4.3). Also, in the analysis, a length of 30 feet was used for the 10" HDPE outflow pipe while the plan indicates a length of 20 feet. Revise accordingly.

The proposed stormwater management system has been redesigned to have only one (1) stormwater basin which is identified on the revised plans as Detention Basin 1.

Plan Comments

1. It is recommended that an Existing Conditions Plan be included in the plan set with the Limit of Work shown for reference.

In lieu of Existing Conditions plan sheets, separate Erosion & Sediment Control Plans and a detail sheet has been added to the set as Sheets C-6.1 and C-6.2, where the entire work site can be seen with the proposed erosion control barriers labeled in relation to the proposed work.

2. Detention Basin 3 appears to have a mis-labeled bottom elevation of 890.0 (Sheet C3.2).

Due to stormwater management system design revisions, this basin is no longer proposed.

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3. It is recommended that a separate Erosion and Sedimentation Control Plan depicting proposed measures be submitted for clarity. The plan shall also include:
- Temporary Sediment Traps and/or Temporary Sediment Basins with associated temporary outlet controls and details. Traps/Basins shall be sized according to contributing drainage area.
 - Location of stockpile area(s) and perimeter controls.
 - Detail for erosion control matting
 - Sequence of Construction

The revised plan set includes Sheets C-6.1 and Sheet C-6.2 that have been added as a separate Erosion and Sedimentation Control Plan with notes and details regarding general construction sequencing, matting, and stockpile & temporary sediment traps/basins.

4. The plan does not depict how detention/infiltration basins are to be protected from accumulation of sediment and potential “clogging” of native soils (during construction activities) which may reduce the soils infiltrative capacity. The plan should clarify how temporary sediment basins and/or traps are to be coordinated with the proposed detention/infiltration basins in terms of location and sequence.

Erosion controls have been added upslope and at points of entry of the proposed detention basin to prevent accumulation of sediment and potential clogging during construction activities.

5. Additional notes shall be added to the plan to protect infiltration basins as follows:
- Infiltration basins shall be constructed using low ground pressure equipment
 - Construction equipment shall not drive over areas intended for infiltration
 - Do not construct infiltration basins during or after rain events

These notes have been included on Sheet C-6.2 under Erosion and Sediment Control Requirements.

6. Detail 6 on sheet C-4.4 indicates a top of gabion elevation of 951.75 which is not consistent with grades at detention basin 2 or 3 and should be revised.

Due to stormwater management system design revisions, this basin is no longer proposed.

7. Detail 2 on sheet C-4.3 refers to a precast concrete outlet structure detail (same sheet) but plan sheet C-3.1 indicates a flared end section. Revise accordingly. If the flared end section is to remain on the inlet side, then it is recommended that a trash rack be added.

Detail sheets and call outs have been revised.

8. Detail 3 on sheet C-4.3 refers to a low flow drain detail on C-4.4 but should be revised to indicate a precast outlet control structure. A rip-rap spillway weir is shown on Detail 3 but not shown on the plan.

Detail sheets and call outs have been revised.

9. Detention Basin 3 (sheet C-3.2) references Detail 3 on C-4.4 but appears to be labelled as Basin 2.

Due to stormwater management system design revisions, this basin is no longer proposed.

ASE

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We hope this serves your needs at this time. Should you have any questions or require additional information, please contact this office.

Very truly yours,
ANDREWS SURVEY & ENGINEERING, INC.

Kristen Page, EIT
Project Engineer

Enclosure(s)

C: Weston & Sampson
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