



December 28, 2018

Town of Franklin
Planning Board
Franklin Town Hall
355 East Central Street
Franklin, MA 02038

**Subject: Application for Special Permit and Site Plan Approval
Proposed Large Scale Ground-Mounted Solar Photovoltaic Installation
1061 Upper Union Street
Franklin, MA**

Dear Planning Board Members:

Enclosed please find the following:

1. Site Plan Review/Special Permit Application form.
2. The original Notarized Certification of Ownership and one copy.
3. 300' Abutters List (certified by Assessor's Office)
4. Check for Filing fee
5. Plan Submittal Copies
 - a. Twelve (12) 11"x17" prints
 - b. Four (4) folded 24"x36" sets of prints
 - c. One (1) copy of the Stormwater Report

The Applicant, Kearsarge Franklin LLC, is proposing to install a solar energy generation facility at the property located at 1061 Upper Union Street, in Franklin, Massachusetts. The 142 property is listed as parcel 333-001-000-000 and is located at 1061 Upper Union Street (near the intersection of Upper Union and Mount Street, access for this project is off of Mount Street) and owned by the Cistercian Nuns of Strict Observance. The photovoltaic (PV) array will be installed for the purpose of generating renewable solar energy. The solar energy will be converted to renewable and emission free electricity and connected to the Eversource distribution system.

The proposed work will involve the installation of a solar generation array which will total ~1.0 megawatts (MW) AC and will consist of approximately 3,600 +/- modules along with an energy storage system (ESS) located in an open field on site.

Portions of the work will be located within the 100-foot Buffer Zone to Bordering Vegetated Wetlands (BVW) that is regulated under the Massachusetts Wetlands Protection Act (WPA). No tree clearing and no new contiguous impervious areas will be created as a part of this project. The proposed work is in previously disturbed areas of

the site and no new clearing is proposed or necessary. We will be filing a Notice of Intent with the Town of Franklin Conservation Commission for the work in the buffer zone.

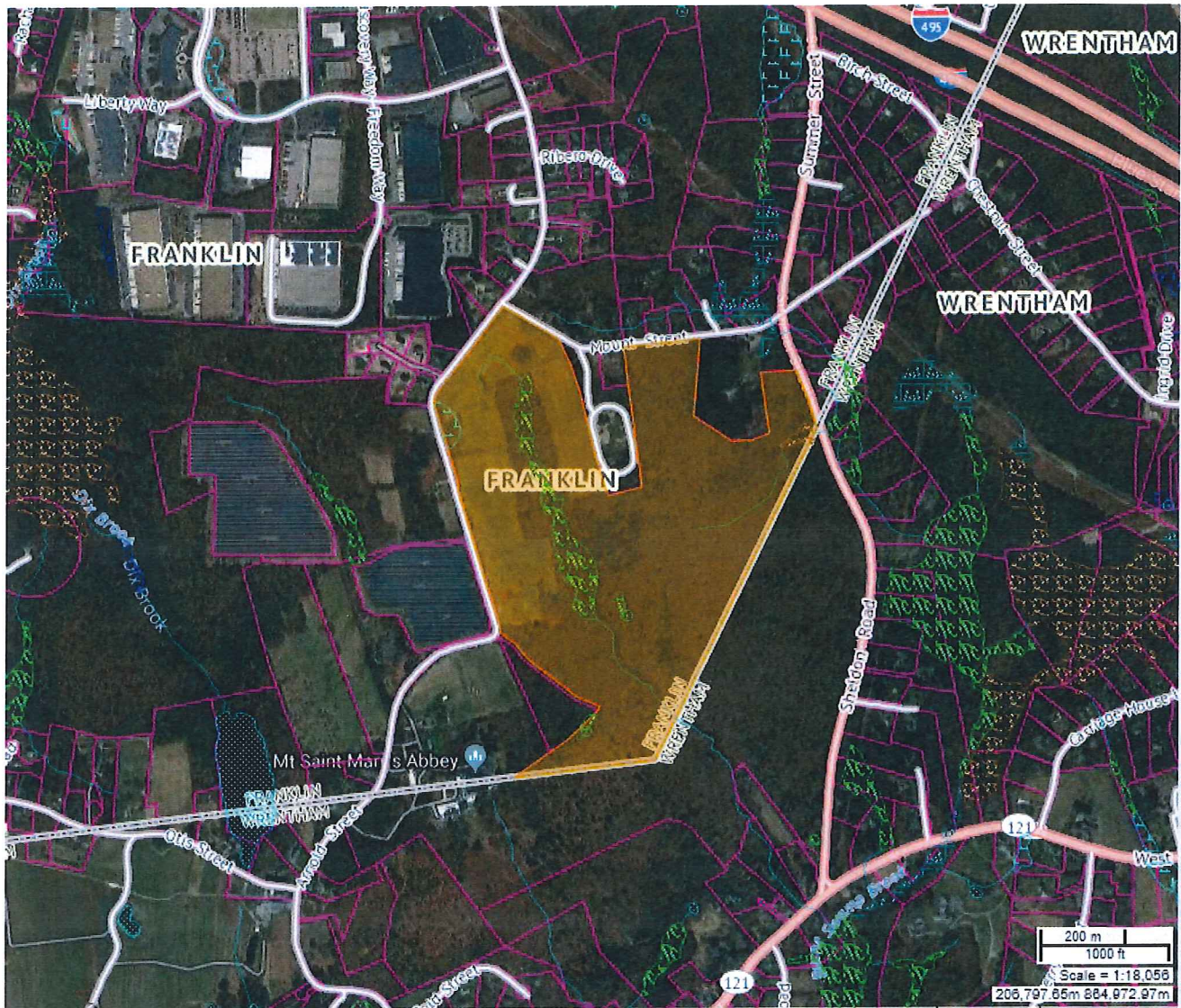
Site Description

The property is located on the east side of Upper Union Street and is 142.64 acres in area. There are approximately 35 acres of farmed fields on the property with remaining area, ~111 acres, being wooded. The Plan Set attached depict the existing conditions of the property.

Access to the property is via Upper Union and Mount Street. For the proposed solar array, the access will be via Mount Street. The property is abutted by the Mount St Mary Abbey properties across Upper Union to the west (which has a 4 MW solar array) and south (Wrentham town line abuts the property on the south and east, the Abbey owns the adjacent properties in Wrentham also). There are residences north of the parcel along Mount Street and Upper Union Street. There is one large (~8 acres) residential property to the east of the proposed solar array.

According to the most recently published Atlas by the Natural Heritage and Endangered Species Program (NHESP), there is no Priority Habitat or Estimated Habitat on or adjacent to the property. According to the Massachusetts Department of Conservation and Recreation (DCR), the site is not located in an Area of Critical Environmental Concern (ACEC). According to FEMA Flood Insurance Rate Maps there is a FEMA flood Zone x (0.2%/500-year Flood Flood) associated with the treed/wetland area on site. None of the proposed work is located within the mapped flood areas located on the subject parcels.

There is a BVW to the west of the project area and as previously noted, a filing will be made with the Franklin Conservation Commission.



Project Description

Work under this application involves the installation of approximately 3,600 +/- PV modules as shown on attached Plan Set. PV modules to be installed will be ground-mounted in rows, two modules in Portrait orientation. Each row of PV modules will be mounted on posts (I-Beams) that are driven in the ground. The panels will be tilted 20 to 25 degrees and the front end of the southerly facing rows of PV modules will be 3.5 to 4 feet off the ground surface. The back side of the rows of PV modules will be approximately 7 to 8 feet above the ground surface. Each row will be separated by approximately 12 feet to eliminate shading of one row upon next. The proposed ESS will consist of a 40-foot shipping container "Conex box" outfitted with a battery system, controls system, and transformer on an adjacent pad as shown on the plan set

As a security and safety measure, a new 7-foot high chain link fence will be installed around the solar array.

The basic construction sequence for the project will be as follows:

1. Site Mobilization
 - a. Install erosion control barriers;
 - b. Set up site office/sanitary facilities;
2. Ground Structure Installation
 - a. Lay out locations of solar array foundations
 - b. Set foundations (Drive piles) for racking support;
 - c. Install pre-fabricated solar module mounting racks on support posts.
3. PV Module Installation
 - a. Receive/unload/stage PV modules in advance of installation;
 - b. Prepare PV modules and attach to mounting racks;
 - c. Connect module together in "strings" in preparation of connection to inverter.
4. Pad Installation
 - a. Excavate and form foundation for the switchgear and transformer
 - b. Excavate and form foundation for the Energy Storage System
 - c. Install equipment on concrete pad.
5. Connection to Electric Grid
 - a. Coordinate with Utility on location;
 - b. Install transformer/poles as necessary
6. Demobilization/Restoration
 - a. Removal of temporary office trailers/facilities;
 - b. Removal of erosion controls once site deemed stabilized

In accordance with the Review Criteria cited in Chapter 185-31 "Site plan and design review" Section 1 - C (4) (a through f) we offer the Planning Board the following:

(a) Internal circulation, queuing, entrance and egress are such that traffic safety is protected and access via secondary streets servicing residential neighborhoods is minimized.

A 20-foot-wide entrance off of Mount street exists for the proposed solar array, the existing gravel entrance will be modified to include a 50-foot sedimentation control construction entrance and then a gravel base beyond the sedimentation control (see details on plan set). No other modification to the entrance is necessary. No trees will be removed from the border of Mount Street.

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(b) Reasonable use is made of building location, grading and vegetation to reduce visibility of structures, parking area, outside storage or other outdoor service areas (e.g., waste removal) from public views.

Given the shape and orientation of the property and location of the solar array, we are only proposing visual screening on the sparsely vegetated eastern property border of the proposed array where there is a residential abutter. The proposed array is over 180 feet from Mount Street (north), and there is existing thick forest to the west and south will reduce the visibility of the structures which are only 8 feet in height.

(c) Adequate access to each structure for fire and service equipment is provided.

The entrance currently and when modified for the sedimentation control entrance/gravel access road can accommodate necessary fire apparatus

(d) Utilities, drainage and fire-protection provisions serving the site provide functional service to each structure and paved area in the same manner as required for lots within a subdivision.

National Grid has proposed to install 3 utility poles adjacent to the pre-existing driveway for connection to the utility. From that point we will connect to the solar array via one pole placed after the three National Grid poles (required for load break switch), then transitioning to underground to the solar array).

No other utilities are necessary. The stormwater report and plan set detail the stormwater controls that are proposed.

There are no occupancies structures proposed and most of the equipment included as part of the solar array and ESS are non-flammable. As noted above there is adequate access for fire and emergency apparatus in the event of an emergency or fire.

(e) No site feature or activity shall create glare or illumination which extends beyond a site's property lines and creates a hazard or nuisance to neighboring property owners or on adjacent roadways. Lighting shall be designed to provide the minimum illumination necessary for the safety and security of the proposed activity. Lighting shall be designed such that the light source is shielded and the light is directed downward.

There are no lights proposed. The solar panels are made with a material designed to absorb light and prevent glare and will not have a negative visual impact on adjacent properties. The panels are also oriented towards the south.

(f) Proposed limit of work is reasonable and protects sensitive environmental and/or cultural resources. The site plan as designed will not cause substantial or irrevocable damage to the environment, which damage could be avoided or mitigated through an alternative development plan.

The proposed array is located in an open field that has been farmed for decades. No clearing is proposed or necessary. As part of the wetland delineation (a filing has also been submitted to the Conservation Commission) a portion of the farmed field has been designated as wetland. We have proposed work in the 100-foot buffer to the wetland on previously disturbed land, however, no work will occur in the wetland.

(g) Water consumption and sewer use, taking into consideration current and projected future local water supply and demand and wastewater treatment capacity, will not be excessive.

The proposed array will not be connected to the public water or sewer systems as there are no occupied structures proposed or need for any of these services.

Additional Information:

- Signage: except for the code-required emergency contact and safety warnings (none larger the 11"x17") there will be none.
- Land Clearing: No clearing is necessary for the solar array installation.
- Facility Access and Conditions: As required by the bylaws, the facility will be maintained in good condition and access for emergency services will always be maintained.
- Appurtenant Structures: there are no occupied buildings proposed. The equipment pads will house the transformers, electrical disconnect switches, and the ESS containers. All equipment placed on the property will follow the regulations concerning height, lot area, setbacks, parking, etc.
- Storm Water: A stormwater Plan has been prepared and is attached. This plan will also be submitted to the Department of Public Works and Conservation Commission for review. The goals of the stormwater plan are as follows:
 - To eliminate or reduce the adverse effects of soil erosion and sedimentation;
 - To minimize stormwater runoff from any development;
 - To minimize nonpoint source pollution caused by stormwater runoff from development;
 - To provide for groundwater recharge where appropriate; and
 - To ensure controls are in place and that these controls are properly operated and maintained.

Franklin Planning Board

December 28, 2018

Should you have any questions or require additional information, please contact me by telephone at (774) 270-0834, or by email at mlotti@industriaeng.com.

Very truly yours,
Industria Engineering, Inc.



Michael S. Lotti, LSP, LEP
Vice President/Project Manager

Cc: Andrew Bernstein, Kearsarge Upper Union, LLC

Attachments:

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