



**Development Impact Statement  
for  
Herring Brook Solar Project  
Pembroke, Massachusetts 02359**

Applicant:  
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## **I. INTRODUCTION**

This Development Impact Statement has been prepared in accordance with the requirements of Section VI of the Town of Pembroke Planning Board Rules and Regulations Governing the Issuance of Site Plan Approval. Per the regulations, the purpose is to assess the impacts of the proposed Herring Brook Solar Project on the following four subject areas, numbered according to the corresponding sections of the Site Plan Regulations:

Section 6.1 – 6.2	Environmental
Section 6.3 – 6.4	Fiscal
Section 6.5 – 6.6	Community
Section 6.7 – 6.8	Traffic

## **II. PROJECT DESCRIPTION**

The Herring Brook Solar Project is a proposed  $\pm$  4.1MW ground-mounted, solar photovoltaic facility located on the  $\pm$ 45.3-acre property located at 0 Hobomock Street in Pembroke, Massachusetts (the “Site”) (Map D6, Lot 1).

The site is a previously developed, partially wooded property consisting of an abandoned gravel pit, an abandoned cranberry bog, a manmade irrigation pond, dirt roads/paths and wooded areas surrounding on-site wetlands, ponds and streams. A 150’ wide utility easement with overhead utility lines and poles runs through the middle of the site. Glover Mill Pond, Herring Brook Pond and Herring Brook are located on the western and northwest portions of the property.

The areas surrounding the site consist of residential properties to the northwest and west (across Hobomock Street), the Hobomock Ice Arena to the south, and the Pembroke High School and Pembroke Landfill/Recycling Center (with associated solar farm) to the east.

The site lies primarily within the Residence A Zoning District and does not fall within any DEP mapped surface or groundwater protection areas, or Town designated Aquifer Protection or Watershed Protection Overlay Districts. The site is partially located within a FEMA Flood Zone AE with elevations ranging from 53 to 49 on the northwest portion of the site, based upon the FEMA Floodway study of Herring Brook. The site is not within an Estimated Habitat of Rare Wildlife or Priority Habitat of Rare Species, as mapped by the Natural Heritage and Endangered Species Program (NHESP). In addition, the site is not located within any Area of Critical Environmental Concern (ACEC).

The site has bordering vegetated wetlands (BVW) systems located throughout the northern, eastern and western portions of the site, associated with USGS mapped streams and ponds. In addition, there are two perennial streams (Herring Brook and an un-named stream) along the northwest and eastern portions of the site as well as Glover Mill Pond, Herring Brook Pond and an un-named pond (drainage easement) on the western edge of the site.

These wetland resource areas on the site were delineated by Goddard Consulting, LLC in February 2019, and the wetland boundaries were surveyed by Atlantic Design Engineers. The 100' buffer zones to the BVWs and 200' Riverfront Areas within the locus area are mostly presently previously developed and cleared. The abandoned upland cranberry bog and man-made irrigation pond were voted by the Commission to be non-jurisdictional in a recent RDA permit decision in February of 2019; since these areas were proven of being created within non-jurisdictional upland areas.

Topography in the center of the site, where development is proposed, is flat, pitching very slightly toward the wetland systems to the east, north and west. Steep banks exist along the edges of the wetlands, separated from the flat area of the site by earthen berms and/or ditches. Vegetation is thickly forested in and immediately adjacent to the wetland areas but the remaining area of the site consists of brush and sparse, scattered scrub shrub and low growth trees, all overgrown from the abandoned bog and gravel pit operations.

The proposed  $\pm 13$ -acre solar development project is comprised of two solar arrays separated on the site by the existing 150' wide utility easement. The arrays consist of perimeter fencing, photovoltaic solar panels, racking systems, inverters and transformers with accommodating concrete pads, above and below ground utilities, and a gravel road to access to the solar fields. Presently the areas selected for the ground-mounted solar arrays are flat, vacant, and open, with scattered shrubs, low growth trees and brush. Starting at Hobomock Street, just west of the existing Hobomock Arena parking area, a gravel access drive will be extended approximately 1,500 feet up to and into the solar fields. The initial 80 feet of the access drive will be 20 feet wide and will be paved to meet utility company standards. Beyond that, it will reduce to 12' wide gravel up to and throughout the site, with turnarounds provided for maintenance and emergency vehicles.

The solar array will be surrounded by a 7-foot high chain link security fence. The entrance gates into the arrays will be locked and a knox box will be provided for fire department/emergency access. Several other gates will be provided at various points around the arrays, for maintenance and emergency access. A project sign, conforming to the Town's Zoning Bylaw, will be provided at the entrance to the facility identifying the project owner/operator and 24-hour emergency contact information and phone numbers.

The panels and electrical cabinets have all been sited to meet the setback/yard requirements of the Town's solar bylaw (50' front yard, 50' side and rear yards).

Grading proposed for the solar development will be limited to the initial 450 feet of proposed access road at the entrance to the site. This section of the access road will be graded in such a way that stormwater runoff from the paved portion of the road will be directed to a series of stormwater Best Management Practices (BMPs), including a grassed swale, forebay, and an infiltration basin. These BMP's will prevent direct discharge of untreated stormwater to the wetlands areas at the front of the Site. The remaining gravel access road and the area of development (the 2 solar arrays), will not require any grading and will be constructed over the existing topography in the sparsely vegetated, flat areas of the abandoned gravel pit and bog.

A complete Stormwater Report documenting compliance with the DEP Stormwater Management Standards has been provided along with appropriate design details on the Site Plans. Erosion control measures (sediment logs, or approved equal) will be in place and maintained at the proposed limit of work throughout construction, until vegetation has stabilized, to protect the on-site BVW's and Riverfront Areas.

All work has been kept out of the limits of the Flood Zone AE (Bordering Land Subject to Flooding) so there will be no impacts on the ability of these lands to store/channel the 100-year flood as calculated by FEMA.

Wildlife passage through the site and solar fields will be enhanced by providing a 6-inch gap at the bottom of the security fence surrounding the arrays. In addition, the seed mix proposed for the solar array will be comprised of native, non-invasive, local species and will provide a more diverse habitat for wildlife throughout the site.

Utilities will be underground throughout except at the entrance the the project at the point of interconnection of Hobomock Street, where a series of utility poles will be installed as required by the utility company.

Evergreen planting will be provided along the northern/northwestern fenceline for enhanced visual screening to the abutting residences. Elsewhere, existing wooded areas and vegetation will provide sufficient visual screening of the project.

### **III. STANDARDS AND ASSESSMENTS**

#### **6.1 – 6.2 ENVIRONMENTAL IMPACT ASSESSMENT**

The project's impacts to natural wetland areas on and adjacent to the site will be addressed through the issuance of an Order of Conditions from the Conservation Commission. A Notice of Intent has been filed concurrently with the Planning Board Site Plan Approval Application.

Potential impacts to surface and groundwater quality, and on/off-site flooding have been addressed in the Stormwater Report and accompany Site Plans completed for the project. Grading, erosion and sedimentation control and insignificant increases in impervious areas have also been addressed on these documents and plans, which have been completed and designed in accordance with the State DEP Stormwater Management Standards. These issues will all be addressed by the issuance of an Order of Conditions from the Conservation Commission.

The project does not generate any sewage and/or solid waste and does not consume any water from Town water supplies or on-site wells. There are no lights, hazardous materials or sources of water pollutants, noxious gasses, or air and radiological emissions proposed on the site.

In regard to noise impacts, although ground-mounted solar array inverters and transformers do make a humming noise, this occurs during daytime hours only, when the array is generating electricity. At 50 to 150 feet from the boundary of the arrays, depending upon ambient noise, any sound from the transformers and inverters is inaudible. Since the array will be sited over 300 feet from any abutting residential structures and about 400 feet from Hobomock Street, it can be presumed that there will be no off-site noise impacts.

### **6.3 – 6.4 FISCAL IMPACT ASSESSMENT**

The fiscal impact of the project is anticipated to be potentially a net benefit to the Town, as there are no increased demands on public services and a payment in lieu of taxes (PILOT) agreement will be negotiated between the project proponent and the Town, after completion of the permitting process. The project will not require additional police and fire protection services. Municipal utilities (water, sewer, etc.) will not be required to serve the project site. The traffic on the public roadway system will not be impacted by this project, and since the project does not create additional housing units, the school population will not be impacted.

The project is also not anticipated to have any impact on the value of adjoining residential properties, as the closest abutting home is over 300 feet away and sufficiently screened by natural woodlands. It is also located more than 400 feet from Hobomock Street and there will be no increased traffic on Hobomock Street.

### **6.5 – 6.6 COMMUNITY IMPACT ASSESMENT**

Review of the Massachusetts Cultural Resource Information System (MACRIS) database revealed that the site and abutting properties are not listed as historic properties.



Review of the Town's website did not reveal any other historic properties, historic districts, or designated scenic roads in the area of the site.

The project will not require additional police and fire protection services. Municipal utilities (water, sewer, etc.) will not be required to serve the project site. The traffic on the public roadway system will not be impacted by this project, and since the project does not create additional housing units, the school population will not be impacted.

#### **6.7 – 6.8 TRAFFIC IMPACT ASSESSMENT**

Due to the nature of the project, it is expected that there will be little to no traffic generated by the ongoing operation of the proposed facility other than an occasional maintenance vehicle, which is estimated to be at the site roughly 4 to 6 times per year. The daily monitoring and operation of the facility will be conducted remotely and there will be no service personnel onsite on a daily basis. In light of this, further evaluation of traffic impacts is not warranted.