

To the Wareham Planning Board,

Please include these comments as part of the public record for #12-22 as well as #21-21 Wareham MA 3, 91 & 101 Fearing Hill Road.

The Fearing Hill Solar array project is an ill-conceived venture and inappropriate for the site. Please adhere to your obligation as agents of the Town to uphold the bylaws and environmental regulations as they apply to this project. There should not be any variances allowed. Should the project be approved consider the recommendations below. Also, I would strongly urge you to consider and support any pathway for conservation for this parcel.

It's quite apparent that the proponent for this project has the intention to maximize profit and to exploit the landscape to the maximum extent possible. This exasperates the situation that Fearing Hill is not appropriate for a solar project of this magnitude. A general conclusion that one must draw from the Horsley Witten Group (HWG) hydrologic report (May 2022) is for Atlantic Engineering to go back to the drawing board and improve the design to reduce impacts. At the very least, additional study must be done to more carefully determine impacts which will likely cause financial burdens to the adjacent land owners and the community as a whole.

Recommended Further Study

1. *Evaluate the impacts to the adjacent and nearby conservation areas.* The HWG report was well done but no consideration was given to wetland impacts in the conservation area to the East. The Town of Wareham has made a considerable investment in conservation and outdoor recreation in the surrounding parcels. The conservation areas of Fearing Hill, Westgate, Anderson, and Horseshoe Pond represent extensive efforts in conservation and are enjoyed by hundreds of residents and visitors each year. A solar array adjacent to these properties would degrade their conservation and recreation values. Additional significant investments by the Buzzards Bay Coalition has restored the Horseshoe Pond area of the Weweantic River. This project may have a negative impact on that important work.

2. *Conduct long term continuous water-level monitoring at recently installed wells to better determine groundwater hydrology for Fearing Hill.* I don't believe extrapolating data from the USGS index well to predict groundwater behavior at Fearing Hill is adequate. The geomorphology between the index well location and Fearing Hill are quite different. Additional water level logging should be done in conjunction with water levels in the Weweantic and Sippican Rivers and include a period when the Weweantic River is at bank full.

3. *Measure hydraulic conductivity throughout the impacted site.* The models used to determine groundwater and surface flow estimates and thus the impact to adjacent properties are for the most part crude and require many assumptions. A major factor in those models is hydraulic conductivity and an assumed universal value assigned by soil type or geomorphology can result in skewed results. A higher confidence in the results could be obtained by simply performing the extra step of measuring in situ hydraulic conductivity. Both this and the previous items are very important to protecting the interest of adjacent property owners. As indicated by the test pits, soil modeling occurs at about 20 inches in much of the area. This indicates seasonal inundation. Often, leaching fields are at this depth and even if more shallow they have a limited functional capacity. Even a fraction of an inch of rise in

groundwater may cause a septic system to stop functioning and will certainly reduce its capacity to treat sewage.

Recommended Requirements if Constructed

1. *Increase spacing between panel rows.* As indicated the HWG report an increase in panel spacing will permit additional vegetated interspace to absorb and use water. This is critical because the objective should be to minimize surface flows to adjacent properties and to reduce inputs into groundwater. Reducing impervious surfaces and allowing for more vegetation is the only way to meet both objectives.
2. *Increase size of detention basins.* Increasing the size of the detention basins will reduce the peak flows of storm runoff and decrease the damage to the adjacent conservation area and rail bed. Ultimately the volumes will not be reduced by much with larger basins unless infiltration structures and designs were incorporated. I do not recommend infiltration basins because that will aggravate the groundwater impacts. This is one of the reasons that Fearing Hill does not lend itself to solar development.
3. *Increase buffer area between wetlands and disturbance.* Using the minimum 50-foot buffer for this construction violates the spirit of wetlands protection and is a blatant abuse. A 200-foot buffer would be more appropriate. This recommendation along with the previous two would greatly reduce the generation capacity of the solar array. However, it's more important for the Town of Wareham to protect its own interest instead of assuring the economic feasibility of a for-profit venture.
4. *Require that all plants and soil be certified free of invasive species.* One of the most difficult aspects of managing conservation land or any open space is the control of invasive species. Several invasive have increased in their veracity in the past few years. Insects that cause diseases, worms that deforest, and plants that displace native species are expensive issues. Due to the proximity to conservation land and the investment that the Town of Wareham has made in this conservation, all materials brought to this site should be certified invasive free.
5. *Require detailed management plans for maintaining detention basins and vegetative buffers.* Often stormwater and other infrastructure is installed and forgotten. Maintenance is a key element in assuring a functioning treatment system over a long term. This is particularly important to the Fearing Hill site where the environmental impacts will be borne by the adjacent landowners and community instead of the proponent.

Concerned Wareham Citizen and Scientist,
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