

September 7, 2023

Mr. Devin Howe  
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SUBJECT: Planning Board Meeting June 8, 2023 – Response to Questions  
Bartzak PV Solar Generating Facility  
Holliston, MA

Dear Mr. Howe,

This memo provides responses to questions raised by community participants in the June 8, 2023 Holliston Planning Board Meeting.

***Response to Mark Freeman, 7 Indian Circle, regarding the effect of tree removal.***

Background sound is the result of diffuse sources. In this location, sound is due to HVAC and operations sound from existing facilities in the industrial park, traffic on MA Route 126 and local roads, and natural sound such as wind in trees. This sound arrives at a given location from many different directions, so changes to the sound path from any individual source may not affect sound from other sources.

Sound attenuation due to foliage is a complex phenomenon, dependent on density of vegetation and, for deciduous trees, whether leaves are present. Nonetheless, ISO standard 9613-2, "Attenuation of Sound During Propagation Outdoors", provides estimated sound attenuation due to foliage in an annex (i.e. a non-normative section). At mid-frequencies, the attenuation is approximately 0.02 dB per foot of propagation.

The width of the area to be cleared for the proposed facility is approximately 200 feet. For residences immediately adjacent to the facility property, sound from some sources would propagate through some fraction of the cleared area, while other sources would be located in directions that would result in no path through the cleared area. Overall, the increase of background sound level for these residences can be expected to be 0-2 dB, and other residences would likely experience no increase in background sound level.

The MassDEP regulation allows for an increase in sound of 10 dBA above the pre-existing background level. The combined maximum increase in sound level due to tree removal and sound generated by the facility is estimated to be 4 dB, within the limit for compliance.

***Response to Daniel Hill, attorney for Thomas Keefe, regarding compliance with MassDEP regulation.***

Mr. Hill's assertion that MassDEP limits sound to 3 dB above ambient is incorrect. MassDEP noise policy (available at <https://www.mass.gov/doc/massdep-noise-policy>), states:

"A source of sound will be considered to be violating the Department's noise regulation (310 CMR7.10) if the source:

1. Increases the broadband sound level by more than 10 dB(A) above ambient, or
2. Produces a "pure tone" condition – when any octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by 3 decibels or more.

Table 1 of the sound study presents expected broadband sound levels equal to or less than the background sound level, demonstrating compliance with the first criterion. Table 2 presents expected octave-band sound levels, demonstrating compliance with the second criterion.

***Response to Thomas Keefe, 5 Mohawk Path, regarding infrasound.***

Inverter measurements included frequencies as low as the 12.5 Hz band. At these frequencies, inverter sound was roughly 20 dB lower than the sound from the road 180 feet away. Infrasound typically requires an impulsive mechanism and/or large radiating surfaces, neither of which is present in these devices, so there is no reason to expect substantial sound content at frequencies below those measured.

Sincerely,  
CAVANAUGH TOCCI



Bradley M. Dunkin, Associate Principal Consultant

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