

January 22, 2021

Louis Schulman, Chair
Zoning Commission of the City of Norwalk
125 East Avenue
Norwalk, CT 06856-5125

SUBJECT: #6-20SP – 10 Norden Place #A – Noise impacts

Dear Mr. Schulman and members of the Commission,

I have been retained by Green and Gross, P.C. on behalf of their client, the Sasqua Hills Neighborhood Association, to review the noise study prepared by David Greenberg of Creative Acoustics, LLC in support of this application. I have reviewed the initial report dated October 27, 2020, the supplemental report dated November 20, 2020, and Mr. Greenberg's testimony before the Commission on December 7, 2020.

I have several concerns and questions about the methodology used in the analysis and about details of the proposed use of the site that are unclear.

Comments and Concerns

1. Calculations of sound propagation outdoors are typically conducted in accordance with ISO 9613-2 *Attenuation of sound during propagation outdoors*. This standard methodology accounts for divergence, atmospheric effects, shielding by terrain or structures, and many other factors.

Given the complex terrain and structures in this area, industry standard practice is to construct a computer model of the site and surrounding areas in environmental noise modeling software such as SoundPlan or Cadna/A to calculate receptor sound levels in accordance with the ISO standard.

2. The report indicates that "safety factors" were included in the calculations. It's unclear what this means. These should be documented.
3. It is unclear whether reflections from the building(s) were included in the calculations.
4. Mr. Greenberg states in his December 7 testimony that ground absorption was omitted from the calculations in an effort to be conservative. As much of the ground between the trucks and residences is paved, the ground effect would be largely reflection, which would potentially increase calculated impacts.
5. Mention is made in the report of the possibility of trailer refrigeration units (reefers) running overnight. These generate low-frequency noise, which is difficult to attenuate with sound barriers. Multiple reefers can be particularly problematic, as beat

- frequencies can develop as a result of slightly different compressor frequencies. Beat frequencies create slow modulation of sound levels over the course of several seconds and can often be detected inside of homes. If there is a possibility of multiple reefers running overnight, this should be examined thoroughly.
6. No calculations were performed for trucks (or reefers) on the north side of the building. It is claimed that the buildings will provide sufficient shielding such that there is no potential for impact from trucks in this area. However, given the low-frequency nature of the engine and reefer sound sources, this should be modeled.
 7. It is stated that the railroad right-of-way will provide a 10-dB attenuation. The railroad is at or below the grade level of the site and homes to the south, making it unclear how it would provide any attenuation.

Summary

While the scope of the applicant's noise study is appropriate, the complexity of the terrain and structures on and around this site warrant more detailed modeling in accordance with standard ISO 9613-2.

Of equal or greater concern are the following outstanding issues:

1. The issue of trailer refrigeration units should be studied further. The simultaneous operation of multiple reefers has a significant potential for overnight noise impacts in the surrounding community.
2. While outside of the scope of the applicant's study, the noise from the added truck activity over public roads has a potential for significant noise impacts. This is particularly true in areas close to site access points where trucks will be accelerating.

Both depend a great deal on the type of business that occupies this facility. It is difficult to draw any conclusions about the actual noise impacts of this project with so many factors still unknown.

Sincerely,



Eric L. Reuter, FASA, INCE Bd. Cert.
Principal