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September 19, 2022

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Subject: Washville Car Wash Noise Evaluation - Peer Review
Cranston, RI
Acentech Project No.: J635999.00

Dear Doug:

As you know, we have been retained by the City of Cranston to provide peer review services related to the noise study of the proposed Washville Carwash at 1300-1310 Oaklawn Avenue in Cranston, Rhode Island. We have reviewed the Tech Environmental (Tech) noise evaluation letter report (Ref 4736), dated September 14, 2022, and have the following to note:

NOISE REGULATIONS

This report has properly identified noise limits that apply to this project. We agree that the State of Rhode Island does not have applicable quantitative noise regulations. The Tech letter report identifies the noise ordinance within the City of Cranston Code of Ordinances, Chapter 8.20 Noise Control. Table A within the letter report provides limits based on the type of property (residential, commercial, industrial, or public) and time period with daytime defined as 7:00 am to 10:00 pm and nighttime defined as 10:00 pm to 7:00 am. Table 3 within the letter report identifies residential, commercial, and public abutting properties that would limit sound levels to 55, 65, and 75 dBA, respectively.

The most limiting noise requirement is at the abutting residential properties to the East and North. These location IDs are: (1) 245 Bateman Avenue, (2) 320 Mayfield Avenue and (3) 326 Mayfield Avenue. All of these locations must achieve 55 dBA, which assumes the Washville facility will not operate past 10:00 pm.

SOUND MODELING METHODOLOGY

This evaluation used common noise modeling software to compute the sound levels at various points within the community. They have evaluated sound from four different sources of sound: (1) the carwash entrance, (2) the carwash exit, (3) vacuum blower units and (4) vacuum inlets. The first two items are singular quantity in this evaluation. Item (3) has a quantity of four blower units with two blowers at each of two stations. Item (4) has a quantity of twenty two vacuum hose inlets in two rows of eleven hoses each. This study does not address sound from vehicles at the carwash. No background sound measurements were performed as part of this evaluation.

PEER REVIEWER COMMENTS

Our specific comments are given below:

1. Sound Calculation Methodology: In general, we find the sound modeling methodology to be reasonable and sufficient to properly estimate sound from the proposed carwash operations.

2. Vacuum Blower Unit Sound Power: Appendix A lists the assumed reference sound power levels for the Vacuum Blower Units to be used at the project. These units are defined to have an overall A-weighted sound power level of 79 dBA which is based on measured sound pressure level of 61 dBA at a distance of 10 feet reported by the blower manufacturer. This level is based on two types of noise mitigation that include a sound enclosure and an exhaust silencer. The data in the Appendix A table includes sound spectrum (octave band) sound data. However, the data sheet in Appendix B did not provide such information. Tech does not cite the source of the octave band data. Our experience has shown that the blower units such as this typically have tonal sound and that is not exhibited in the Appendix A data.

3. Vacuum Inlet Sound Power: As well, Appendix A lists the assumed reference sound power levels for the Vacuum Blower Inlets (i.e., the vacuum hose, “business end”). Each vacuum inlet is defined to have an overall A-weighted sound power level of 72 dBA, which was determined from the Vacuum Blower sound power given above with a sound power sharing defined in footnote 5 on page 10 of the letter report. Thus, same comments regarding the vacuum blower unit (in Item 2 above) apply to the inlet.

4. Results: Table 4 of the letter report provides the predicted sound levels which range from 45 to 72 dBA. The residential properties have sound levels that range from 45 to 50 dBA, and as such they comply with the City of Cranston 55 dBA residential daytime sound limit. The highest sound level was found at the West property line (ID 5) with a level of 72 dBA, which complies with the City of Cranston public noise code limit.

SUMMARY

It is our professional opinion that the Washville noise evaluation report is reasonable and sufficient. Sound level estimates are only as good as the sound (source) power assumptions used as inputs to the sound modeling software. We have noted that both the Blower Unit and vacuum inlet sound power levels are based on mitigation as recommended by the equipment manufacturer. This requires that the developer use the same mitigation, specifically a sound enclosure and exhaust silencer. We recommend that the developer confirm the sound power levels for the blower unit and vacuum inlet via measurement given that these devices are prevalent in our area, and thus, measurement of actual units should not be very difficult. Such measurements would verify the assumptions used in this evaluation, and avoid any potential for noise excess after the project is completed.

Please contact me at 617-499-8058 or mBahtiarian@acentech.com with any questions or comments.

Sincerely,

ACENTECH INCORPORATED

Michael Bahtiarian, INCE Bd. Cert.
Principal Consultant

cc: Jim Barnes, Marc Newmark, Acentech