MEMORANDUM

DATE: March 11, 2021

FROM: Greg Tocci, 508-395-3945, gtocci@cavtocci.com

TO: Peter Bemis, (508)480-0225 X 11, pbemis@edcma.com

SUBJECT: Proposed Warehouse
555 Hopping Brook Road, Holliston
Response to Comment (March 2, 2021)

We are in receipt of a memorandum from Mr. Rami Mitri, Holliston Resident to Ms. Karen Sherman, Holliston Town Planner concerning the CRG warehouse proposed to be constructed in the Holliston Industrial Park at 555 Hopping Brook Road, Holliston. The following briefly responds to Mr. Mitri's numbered comments.

1. This study has used the algorithms defined in ISO 9613-2 Acoustics - Attenuation of sound during propagation outdoors - Part 2: General method of calculation. The algorithms (mathematical relationships or formulae) of the standard are internationally recognized for using source sound power level (i.e., source sound energy emitted) to estimate sound pressure level (i.e., what you hear) at a receptor location. The algorithms account for sound propagation loss effects between source and receiver related to distance, screening by barriers, atmospheric absorption, etc.

2. Sound power levels used by Cavanaugh Tocci are based on measurements of sound produced by trucks and related warehouse activities made at a similar facility. Stationary equipment sound power levels were provided by manufacturers. Sound power levels used in computer modeling using the ISO standard are provided in Table 1 of our January 25, 2021 report.

3. Several additional comments were made. Our responses to these are as follows:

    a. The Mr. Mitri notes that each rooftop unit "can generate up to 89 dBA." He does not mention whether this is a sound power level or a sound pressure level at a specified distance from a typical unit. Cavanaugh Tocci used a sound power level of 88 dBA re: 1 pW in its report. This sound power level was for a Greenheck make up air rooftop unit.

    b. Reported stationary source sound levels at receptor locations are the sum for all stationary sources operating together. Transient mobile source sound levels that persist for 1 second to a few seconds are reported individually, not as a sum since they are very brief and occur randomly, not simultaneously.

    c. The increase in total sound power level with the increase of number of sources shown in Mr. Mitri's first table is correct. The corresponding increase in sound pressure level at a receptor location shown in the same table is not correct. The increase in sound pressure level at a receptor location would be the same as the increase in sound power level, providing that the sources are all the same distance from the receptor. There are several information sources explaining the difference between sound pressure level and sound

power level online. Among them are: https://www.youtube.com/watch?v=oCO5lj7ZPmM and https://www.bksv.com/en/knowledge/blog/sound/sound-power-sound-pressure .

The second table in Mr. Mitri's memo lists traffic sound levels at 50 feet for heavy trucks traveling in the range of 30 to 40 mph. In our analysis, on-site trucks are assumed to operate at a speed of 15 mph. The 50-foot sound level for a passing truck that we used is correspondingly slightly lower, 78 dBA.

We would be pleased to respond further as may be necessary. Thank you.

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