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November 25, 2022

Mr. John Whitney, PE  
Town Supervisor  
Town of Grand Island  
2255 Baseline Road  
Grand Island, New York  
14072

**Peer Review of Updated Noise Impact Study  
Proposed Distribution Facility, Grand Island, New York**

Dear Mr. Whitney

## 1. Introduction

GHD Limited (GHD) was retained by the Town of Grand Island, New York (Town) to complete a Peer Review of the updated noise study provided in support of the proposed distribution facility (Facility) located at 2780 Long Road (Site) in the Town. Mechanical equipment and operational activities at Facility will emit noise to the surrounding environment, and therefore have the potential to produce noise impacts any nearby noise-sensitive land uses without implementation of appropriate noise mitigation measures. On the behalf of the Town, GHD has reviewed the following documents:

- "Evaluation of Site Sound Emissions" (Study), dated July 15, 2022, prepared by Ostergaard Acoustical Associates (OAA)

GHD's peer review comments are summarized as follows.

## 2. Peer Review Comments

### ***Application of Noise Ordinances***

The Study identifies two noise ordinances, which were used to assess noise impacts from the proposed Facility, which are:

- Town of Grand Island Noise Code (TGINC)
- "Assessing and Mitigating Noise Impacts" guidelines by the New York State Department of Environmental Conservation (NYSDEC guideline)

In general, the Study summarizes the above noise ordinances and associated criteria appropriately; however, GHD has included comments with respect to application of these ordinances in the sections that follow.

### ***Identification of Sensitive Receptors and Sound Level Limits***

The Study evaluates noise impacts at sensitive receptors in all cardinal directions from the Site, including detached homes, apartment buildings, and hotels, which are identified as receptors B through H.

The receptors are modelled at a height of 15 feet above grade, with exception of receptor B, which is a single-storey residence modelled at a height of 5 feet above grade and Location E which is 20 feet above grade.

The Study correctly identifies noise level limits from the TGINC which apply to steady noise sources (65 dBA daytime, and 50 dBA nighttime). As noted in the Study, the TGINC does not contain specific at-receptor sound level limits for transient noises (e.g., vehicle movements, other short duration activities). Rather, it applies a maximum sound level limit of 85 dBA at a distance of 50 feet from the source, which does not address the potential for annoyance at sensitive receptors.

OAA recommends that HVAC noise should not contribute more than 45 dBA at each receptor to be inline with existing background noise and provide buffer room. GHD agrees with this approach.

In accordance with the NYSDEC guideline, OAA applied sound level limits to transient noise sources based on the existing ambient sound level conditions at the receptors.

The Study completed a Sound Level Survey at four (4) pre-agreed locations with Town engineering staff and documented the site-specific existing noise at each location for day and night periods. This was completed in order to determine if the proposed project will contribute more than 6 dBA above existing ambient conditions at each receptor location per DEC guidance. GHD agrees with this methodology however the dataset from the Sound Survey with all the hourly data for each monitoring location was not provided which documented the lowest hourly Leq for review and only a summary table was provided.

GHD requests that this tabulated data be provided in order to confirm the lowest hourly Leq over a 24 hour period has been correctly selected for each location for comparison to the DEC guideline.

### ***Identification of Facility Noise Sources***

The Study identifies that the primary noise sources at the Facility include rooftop Heating, Ventilation and Air Conditioning (HVAC) equipment, truck traffic, and personnel vehicle traffic.

A total of 56 rooftop HVAC units were included in the model, assuming a sound power level of 96 dBA (re 1 picowatt) to represent typical 25-ton HVAC unit. In GHD's experience, this is an appropriate estimate of the noise levels produced by appropriately selected 25-ton HVAC units. However, GHD notes the previous study accounted for a sound power level of 96 dBA for 56 units compared to the 93 dBA sound power level for 60 units in the updated study. As it is assumed that this derating of the sound power was intentional to allow for more units GHD recommends that the Study document a feasible maximum allowable unit sound power level for each HVAC unit and that this recommendation be carried forward to the detailed design of the building to ensure this requirement is completed when tendering rooftop equipment.

Activities of heavy trucks at the Facility are indicated to be generally concentrated on the west/east and south façades of the Facility, at the loading docks and trailer storage areas dependent on layout scenario 1 or 2. GHD offers the following comments with respect to the modelling of noise from heavy trucks:

- There are no truck movements included in the model at the south entrance/exit of the Site adjacent to receptor G for either Scenario 1 or 2. It should be confirmed that this accurately represents the planned operations that a barrier wall is not required at this position similar to the north entrance to protect this receptor.
- Material handling activities of forklifts do not appear to be considered in the Study. Each time a forklift enters and exits a trailer parked at the docks, a significant impulse will be generated. Depending on how quickly a trailer is loaded/unloaded, a large number of impulses could be generated in a short time. If the Facility will utilize dock levelers to address this issue it should be noted and documented.

- It should also be confirmed whether shunt trucks will be used at the Facility. Coupling and decoupling activities from shunt trucks produce higher noise levels than typical heavy tractor trucks in GHD's experience (typically about 84 dBA at 50 feet), and would require an update to the noise model in order to capture these sources correctly.
- If the white "+"s presented in the Study are intended to represent "Truck yard activity" it should be confirmed that this modelled activity is inclusive of forklift and shunt truck impulsive coupling/decoupling or updated as required.

Personnel vehicle movements appear to have been modelled appropriately.

In addition to the above noise sources, GHD suspects that the Facility may include an outdoor power transformer, and possibly a standby emergency generator set. These can be significant sources of noise, with annoying tonal characteristics. The sizes and locations of these noise sources should be confirmed, if applicable, and the noise model should be updated accordingly.

### ***Noise Model Methodology***

Generally, GHD agrees with the modelling methodology, which utilized CadnaA to carry out sound pressure level predictions in accordance with ISO standard 9613-2. This is consistent with common practices.

The Study also has evaluated two proposed Facility layouts documented as Option 1 and Option 2 in which the loading bay doors are located on the east and west side of the Facility, respectively.

Topographic ground contour data for the site was used in the model (turquoise colored lines) to account for the effect of site specific ground conditions and berms etc. which is appropriate.

### ***Predicted Noise Impacts – Steady Noise***

Predicted steady noise levels from rooftop HVAC equipment at the Facility are up to 37 dBA at the worst-case receptors, D and G. The Study appropriately assesses these impacts as acceptable, as they are 13 dB or more below the applicable nighttime sound level limit of the TGINC.

If no power transformers or generator sets are required for the Facility, then the steady noise levels presented in the Study are considered appropriately representative of planned operations, and GHD agrees with the assessment of steady noise sources. However, the size and location of any power transformers and generator sets should be identified in order to confirm. Depending on the location of any power transformers and/or standby generator sets, if applicable, it is possible that actual steady noise impacts may be higher.

### ***Predicted Noise Impacts – Transient Noise***

Under both scenario 1 or 2 predicted transient noise levels from heavy trucks at the Facility have a maximum impact of up to 55 dBA at the worst-case receptor B which meets the project criteria. The Study documents that all other receptors meet the project criteria based on the ambient sound study regardless of scenario layout 1 or 2.

Further, as mentioned above, GHD recommends further consideration of adjustment to transient noise sources, as well as additional transient noise sources that would be expected to increase the predicted noise impacts at some receptors, particularly the receptors south of the Facility. There are no truck movements included in the model at the south entrance/exit of the Site adjacent to receptor G for either Scenario 1 or 2. It should be confirmed that this accurately represents the planned operations that a barrier wall is not required at this position similar to the north entrance.

### ***Mitigation Measures***

The Study indicates that a sound barrier has been included in the design of the Facility, which separates the northern driveway from the adjacent residences (receptors B and C). This proposed noise barrier should be required as a condition of site plan approval with the planning authority along with a post construction clearance letter in which a qualified acoustical engineer has confirmed that it was constructed to the segment dimensions (length and height) as detailed in the Study. GHD notes the proposed barrier is only shown in

general and that the actual length and height of each segment should be provided in a separate figure for clarity and reference for the planning authority.

Under the 'Additional Considerations' section of the Study, some suggestions are made with respect to noise controls for back-up beepers ('shushing', ambient sensing). GHD recommends that these controls be made a requirement for all applicable outdoor equipment/vehicles, to the extent feasible.

As mentioned above, GHD anticipates that there is potential for additional noise emitting equipment not included in the Study, such as shunt trucks, outdoor power transformers, and standby generator sets. Additional noise controls for these sources may be warranted, subject of further analysis.

### **3. Conclusion**

GHD has reviewed the Study supporting the site plan approval for the proposed Facility. In summary, the noise ordinances and methods described in the Study are applicable and appropriate, however, GHD recommends that the following additional items be addressed to clearly document that noise impacts from the proposed Facility will be fully and properly addressed:

1. GHD requests that Sound Survey hourly tabulated data be provided in order to confirm the lowest hourly Leq over a 24-hour period has been selected for each location for comparison to the DEC guideline.
2. GHD recommends that the Study document a maximum allowable unit sound power level for each HVAC unit and that this recommendation be carried forward to the detailed design of the building to ensure this requirement is completed when tendering rooftop equipment.
3. The proposed noise barrier should be required as a condition of site plan approval with the planning authority along with a post construction clearance letter in which a qualified acoustical engineer has confirmed that it was constructed to the segment dimensions (length and height) as detailed in the Study. GHD notes the proposed barrier is only shown in general and that the actual length and height of each segment should be provided in a separate figure for clarity and reference for the planning authority.
4. There are no truck movements included in the model at the south entrance/exit of the Site adjacent to receptor G for either Scenario 1 or 2. It should be confirmed that this accurately represents the planned operations that a barrier wall is not required at this position similar to the north entrance.
5. Requirements of outdoor power transformers and generator sets to meet the electrical demands of the Facility should be confirmed, and the analysis of steady noise sources should be updated accordingly, if applicable.
6. Impulse noise due to forklifts entering/exiting trailers should be included in the analysis.
7. It should be confirmed whether shunt trucks will be provided at the Facility for movement of trailers. Impulse noise levels associated with coupling/decoupling of trailers are higher for shunt trucks than regular heavy trucks, and would require that the analysis be updated accordingly, if applicable.
8. Mitigation measures should be updated based on the items above, with particular attention to receptor G.

Should you have any questions on the above, please do not hesitate to contact us.

Regards

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