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15 August 2024

Mr. Chris LaPorta, P.E.
Passero Associates
6 Front Street, 2nd Floor
Newburgh, NY 12550



Re: Acoustical Impact of Proposed Outdoor Resort Event Space
Marlborough Resort, 626 Lattintown Road, Marlborough, NY
OAA File 4843A

Dear Mr. LaPorta:

Ostergaard Acoustical Associates (OAA) has evaluated potential sound emissions associated with aspects of the proposed Marlborough Resort planned at 626 Lattintown Road in Marlborough, Ulster County, New York. The purpose of this acoustical study is to evaluate sound produced by the proposed facility, determine if it will comply with applicable noise ordinances, and evaluate potential noise impacts at residential receptors.

Marlborough Resort will contribute steady and intermittent sound to off-site receptors. Steady noise sources of interest include mechanical equipment, while intermittent noise sources include music sound from interior and exterior events. We understand from you that the town is most focused on the outdoor event space, which is located in the southern part of the site. Since music sound levels have the potential to be the highest, these are the focus of this document. While details of the design have yet to be identified, OAA has evaluated this noise source in a practical yet conservative manner in order to identify potential risk of noise issues. Final details will need to be developed in a way that supports full compliance with all applicable noise codes.

CRITERIA

It is the intent of noise ordinances to protect the health, safety, and well-being of the public. Based on professional experience, noise codes often have specific allowable noise limits to be used as a guide for evaluating noise complaints. In the absence of a noise complaint, excess sound levels are traditionally not treated as legal violations. This becomes clearer where ordinances apply a noise code limit at locations where no noise-sensitive receptor exists. For this reason, it can be challenging to simply use code limits to determine prospective compliance. The basis of whether a noise source results in a complaint includes multiple factors other than magnitude. These include ambient sound level, sensitivity of the receptor, intermittency, and tonal characteristics of the

source. Given the above, while our analysis relies on ordinance limits, professional judgement is also required to determine whether noise will be complaint-worthy.

Local and State noise codes were reviewed. The Town of Marlborough discusses noise in Chapter 105: *NOISE*. This code chapter limits maximum sound levels to 65 decibels from 0700 to 2200 hours Sunday through Thursday and from 0700 to 2300 hours Friday and Saturday. Sound levels are also limited to a maximum value of 55 decibels from 2200 to 0700 hours Sunday through Thursday and from 2300 to 0700 hours Friday and Saturday. These limits apply at the sound source property line. Although not explicitly stated in this code, we assume that the "decibel" limits given in this code are A-weighted decibels as is customary for environmental noise regulations.

There were no Ulster County codes relating to noise that could be found and there are no State of New York noise codes regarding site sound emissions. Therefore, the 65 dB(A) daytime and 55 dB(A) nighttime sound level limits represent prudent project goals. These limits should be met at noise-sensitive receptor points; in the case of this proposed facility, these receptors are about 900 feet south and west of the proposed outdoor event tent.

ANALYSIS

Event music sound levels can be extremely variable, depending greatly on the type of event, the genre of music, and whether the performance is a live ensemble (such as a wedding band) or playback of recorded music. Although it is possible for sound levels to be far in excess of this, a reasonable goal for event music sound levels is 95 dB(A) 25 feet from loudspeakers to provide ample coverage for a typical wedding event.

For each doubling of distance from a sound source, a 6 dB reduction in sound level can be anticipated. Thus, without including the attenuation effects of terrain, walls, vegetation, air, etc., sound levels starting at 95 dB(A) at a distance of 25 feet, will be 89 dB(A) at 50 feet, 83 dB(A) at 100 feet, etc. This means that, based on distance attenuation alone, 800 feet is sufficient to meet the 65 dB(A) noise code limit from this assumed outdoor sound source. This analysis does not take into consideration possible attenuation from vegetation and topography and is expected to be lower in level than shown above.

Based on this simplified analysis, it is feasible for the proposed Marlborough Resort outdoor event space to easily comply with applicable daytime noise regulations. Music sound originating indoors

and traveling a similar distance would be significantly lower in level due the attenuation of the building envelope. Hence indoor event music is expected to have no issues complying with nighttime noise code limits provided doors and windows are closed.

FINDINGS AND NEXT STEPS

The included analysis shows that the site is readily able to meet all daytime noise code limits at nearby residential receptors. It is important to note that on-site patron sleeping quarters will be closer to the indoor and outdoor event spaces, and hence there is a common goal with minimizing any acoustical impact.

Per our discussion with Resort representatives, the following next steps are agreed to and appropriate to assure compliance with music sound associated with outdoor and late evening events:

- The project will continue to be designed and overseen by appropriate acoustical professionals to ensure that measures are implemented to meet noise code limits and minimize the potential for acoustical impacts. Such measures include but are not limited to the location and direction of speakers, the performer location and layout, and the sound level of speakers.
- Because sound systems can vary wildly between bands, DJs, and other presenters, a "house" limiter will be implemented giving the Resort final control over any sound system set up. This limiter will be implemented in such a manner preventing the possibility of a DJ or live performer to override the house limiter.
- The Resort has committed to carrying out a post construction evaluation to ensure that the design can comply with code. This may include meeting with neighboring residences to gain feedback and/or post sound survey measurements to assist in calibrating sound system sound levels.
- Given the preliminary analysis, OAA has shown that outdoor event music can readily comply with daytime noise code limits. Outdoor event compliance with the more stringent nighttime noise code limit is feasible and expected to be achieved through proper design and control measures. Indoor events on the other hand, benefit from additional attenuation provided by the building façade. While this construction is not known at this

time, nighttime noise code limits are expected to be met assuming exterior doors and windows to the indoor event space are closed. Any occasional use of exterior doors by staff or patrons is not expected to negatively impact off-site receptors. Again evaluations prior to commencement of events will be overseen by proper professionals to ensure compliance. Management and staff will be trained in the use of all limiter equipment and operational rules that will prevent any disturbance of neighbors.

- The simplified analysis in this letter report confirms there are several paths forward to ensure compliance with local noise code limits. Regardless, it is important to note that the noise code is in place in perpetuity, and if there should there ever be noise exceeding legal code limits or noise complaints, the Resort would be required to, and is committing to, investigated and implemented additional mitigation if warranted.

CONCLUSION

The proposed Marlborough Resort indoor and outdoor event spaces are well suited for this site from an acoustical aspect. The site provides sufficient distance for needed attenuation of outdoor music sound sources. Projection of typical music sound levels shows compliance with project goals and Town of Marlborough regulatory limits for noise. Given the results of this analysis, no negative acoustical impact is expected from the proposed Marlborough Resort. Based on discussion with Resort representatives, they have committed to ensuring this through proper design and administrative measures. This is prudent and in line with good acoustical practices.

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I trust that the above is helpful, and I look forward to answering any questions you may have.

Sincerely yours,

OSTERGAARD ACOUSTICAL ASSOCIATES



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