APAC ENVIRONMENT STANDING COMMITTEE REPORT
PROJECT FRONTIER NOISE AND ACOUSTICS REVIEW – April 19, 2023
Principal Reviewers: environmental committee member input

PREFACE OBSERVATION

Ostergaard Acoustical Associates (OAA) appear to rely on experience from past similar projects and the CadnaA noise model to calculate Project Frontier projected noise levels at sensitive receptors. OAA also interprets state and local regulations. Written as a summary letter, the OAA letter report is a comprehensive brush-based sound level analysis lacking details in the sound level analysis and noise ordinances and regulations.

REPORT SUMMARY

The letter begins by describing the project location, surrounding land uses and sensitive receptors. The distance from the Project Frontier site to US Route 50 was reported inaccurately as "about one mile" instead of over three miles. This three-fold difference is an error that calls attention to the factual accuracy and credibility of the OAA's letter report.

Another observation of importance is the lack of incorporating ambient noise level measurements with their modeled projected noise levels. The concern is that their noise level assumptions do not consider the ambient background noise levels that must be logarithmically added to the projected noise level outputs.

The model focuses on the noise sensitivity on the impact on residences to the northeast and the closest school based upon proximity. OAA appears to be referencing the protected population in the El Dorado County (EDC) Heritage community to the northwest that is under construction, yet dismisses any adverse noise impact on this protected population residing in adjacent housing. More specifically, the OAA analysis fails to identify and quantify the project's effect on the Heritage Carson Creek senior adult community (Carson Creek Specific Plan Village 11) currently under construction to the west, nor does it quantify the existing ambient background of this proposed protected population community. The subdivision map for the community, approved by the County in August of 2021, shows this community abutting the project parcel with home sites separated from the roadway and truck access to Building Two by a narrow strip of open common area.

OAA INTERRUPTION OF COMPLIANCE WITH EDC NOISE ORDINANCE AND CODES

OAA interprets the El Dorado County (EDC) noise ordinances for transportation and non-transportation sources. OAA states there is a qualitative statement prohibiting loud or raucous noise and the operation of a motor vehicle without a muffler with no quantitative limits. Transportation noise sources and limitations are also discussed with day-night average sound level (Ldn) limits, which are penalized 10 dB during nighttime hours (10 p.m. to 7 a.m.), 60 dB outdoors, and 45 dB indoors for residential receptors. They also mention that schools have a Community Noise Equivalent Level (CNEL) noise limit of 60, similar to the Ldn but with an added 5 dB penalty for 7–10 p.m. evening hours. Schools also have an indoor one-hour average limit of 40 dB. OAA states that these limits only apply to onsite transportation sources, not roadways. OAA also classifies the surrounding area of the proposed project to be a community/rural center limited to hourly averages of 55 dBA during daytime hours, 50 dBA during

evening hours, and 45 dBA during nighttime hours. They discuss penalties for rural areas but don't think they are applicable.

To elaborate on EDC noise limitations, the following table was taken directly from the EDC Ordinance 5090 since it deals with noise-sensitive land uses affected by non-transportation sources, such as residences or schools. The table below displays both the one-hour average noise limits (Leq) for daytime, evening and nighttime as well as maximum noise level limits for the same three periods.

Table 130.37.060.1- Noise Level Performance Standards for Noise-Sensitive Land Uses Affected by Non-Transportation Sources

Noise Level Descriptor	Daytime 7 a.m. - 7 p.m.	Evening 7 p.m. - 10 p.m.	Nighttime 10 p.m. - 7 a.m.
Hourly Leq, dBA	55	50	45
Maximum level, dBA	70	60	55

The ordinance further states that the noise levels specified above shall be lowered by 5 dBA for reoccurring impulsive noises and that the director can impose standards up to 5 dBA less based upon a determination of existing low ambient noise levels. Considering either of these conditions results in the revised property line exterior noise level standards for sensitive receptors such as schools or residences.

Noise Level Descriptor	Daytime 7 a.m. - 7 p.m.	Evening 7 p.m. - 10 p.m.	Nighttime 10 p.m. - 7 a.m.
Hourly Leq, dBA	**50**	**45**	**40**
Maximum level, dBA	**65**	**55**	**50**

As shown in the table above, the exterior hourly Leq, applied to sensitive receptors, cannot exceed 50 dBA, 45 dBA, and 40 dBA during daytime, evening, and nighttime hours, respectively. The maximum noise levels of 65, 55, and 50 dBA cannot be exceeded during the day, evening, and night, respectively.

Furthermore, in section 130.37.050 of EDH County Ordinance 5090, acoustical analysis requirements are discussed:

> "A. New noise-generating land uses likely to exceed the performance thresholds in the Tables in Section 130.37.060 (Noise Standards) below in this Chapter when proposed in areas adjacent to sensitive receptors. Noise sources may include **industrial operations**, outdoor recreation facilities, outdoor concerts and events utilizing amplified sound systems, commercial land uses, fixed sound sources, and other similar uses."

As stated, acoustic analysis is required for new noise-generating land uses such as industrial operations likely to exceed the performance thresholds in the tables in Section 130.37.060, where Table 130.37.060.1- Noise Level Performance Standards for Noise Sensitive Land Uses Affected by Non-Transportation Sources is located.

The OAA letter discusses the state regulations for maximum allowable sound levels for heavy trucks manufactured after '87, 80 dBA at 50', which they say is readily met for vehicles in good working order. They state, "CEQA review guidelines evaluate noise impacts in relation to applicable limits provided by local noise ordinances or standards by other agencies but provide no meaningful limits."

Regarding heating, ventilating and air conditioning (HVAC), OAA evaluated HVAC units 25 tons or more significant, of which there will be approximately 122 of them in the 25–26 ton range with a sound power level of 93 dBA per manufacturers data and five additional units at 55 tons with the sound power level of 96 dBA. No frequency data was given for either type of unit as well as a reference energy sound level distance for each type of unit. If HVAC units are low frequency, the only way to attenuate them is at the source since low-frequency sound wraps around walls.

OAA also describes 18-wheel line-haul trucks that have the potential to produce 79 dBA at 50' due to the occurrence of backup alarms, air brakes, coupling/decoupling, etc., and classifies them as short in duration, generally under one second. These fall under the category of **impulsive noise**. OAA states driving a truck produces a maximum sound level of 74 dBA but did not classify this as short-term in duration, nor did they associate speed with it. Lastly, they said box trucks could cause excursions of 70 dBA at 50'.

OAA then modeled all the sources using the acoustical modeling software, CadnaA. They stated the worst case (not sure what worst case refers to, maybe 100% load for all units) results of the HVAC equipment at 900' to 3,250' away, screened by building parapets (a low protective wall) from residents yielded maximum sound levels of 37-43 dBA. If this is the case, then the HVAC systems must not be low-frequency since OAA insinuates attenuation by building parapets and distance. The frequency of this type of noise should be given and considered as well as an identified reference energy distance for each type of unit.

OAA also modeled worst-case conditions for trucks with the assumption of six trucks at various onsite locations nearest receptors, again not Heritage Carson Creek, coupled with rooftop HVAC equipment. At 450' to 7,250' away, shielded by intervening topography and buildings, the resultant maximum sound levels at the nearest residences would range from 43-53 dBA. 43-53 dBA is the worst-case noise level range when operations are at 100% or maybe beyond 100% for a worst-case analysis; not sure since it was not stated other than what exactly was operating with no load data or if the truck scenario is truly maximum under worst-case conditions. The attenuation details due to topography and structures are not discussed in detail.

Based on the methodology OAA used, they stated that all noise levels will meet all applicable EDH noise criteria, including Ldn, CNEL, etc. OAA also says that the 43-53 dBA range will equal or below existing roadway sound with no comparisons to roadway measurements or modeling. They also state that since there is no negative impact on the surrounding area, installing a sound wall is not required. It does not appear that OAA took measurements of ambient sound levels at roadways or nearest sensitive receptors. Ambient measurements should be taken, and then added the project's projected noise levels to calculate resultant noise levels from both noise sources. The same goes for their comments on additional truck traffic along Latrobe Road, though the sound wall in place should be adequate. Other roadways, such as White Rock Road, are only addressed vaguely with no quantitative analysis, again stating no adverse impacts are expected. Maybe the worst subjective statement in the report is, "Any impact from the change in traffic flow from this site will lessen over time as receptors become

accustomed to new noise sources and the area continues to develop." Certain sensitive receptors, such as senior citizens with compromised health conditions, may or may not become acclimated to the increased noise levels, especially those noises associated with large trucks. The area will continue to develop, but if designed prudently considering its current ambiance and demographics truck traffic with this project would not be added nor exist in an abundant basis.

The last paragraph in the report summarizes that the project is appropriately designed, considering intervening topography, etc., and will meet project goals. They also state that short-term duration maximum sound levels onsite will equal or less than current traffic flow noise. Again, it does not appear that the protected population of Heritage Carson Creek was considered in this analysis. It may also be prudent to ask current Heritage EDH Phase II residents nearest to Broadridge operations if onsite truck short term duration truck noise has affected them. Lastly, no mitigation measures were recommended or warranted according to OAA, and they believe this is a suitable location for the project.

In summary, this analysis on the surface lacks critical detail and actual ambient noise level measurements that should be added to the proposed project's projected noise levels to establish resultant noise levels that could be compared to EDC noise level performance standards pertaining to existing low ambient noise levels and impulsive noise. More importantly it appears that the protected population of the proposed Heritage Carson Creek (CCSP Village 11) was not considered in the sound level analysis and needs to be.