



October 9, 2025

Hampton, Lenzini and Renwick, Inc.
1707 N. Randall Road, Suite 100
Elgin, Illinois 60123

Attn: Erica Spolar

**RE: Response to Comments from Proposed Data Center Noise Impact Assessment
1960 W. Lucent lane, Naperville, Illinois 60563**

Dear Erica,

Jacob and Hefner Associates, Inc. (JHA) is pleased to present this Response to Comment (RTC) letter addressing recommendations and inquiries from Hampton, Lenzini and Renwick, Inc.'s (HLRs) review titled *Karis Critical Development (1960 W. Lucent Lane) – Review of Noise Impact Assessment Report and Recommendations*, dated October 2, 2025. Specific alterations to the model, comparisons of model output to regulatory limits, and clarification of model details, as noted in HLR's review, are addressed in the updated Noise Impact Assessment (NIA) (**Attachment 1**) and in responses below.

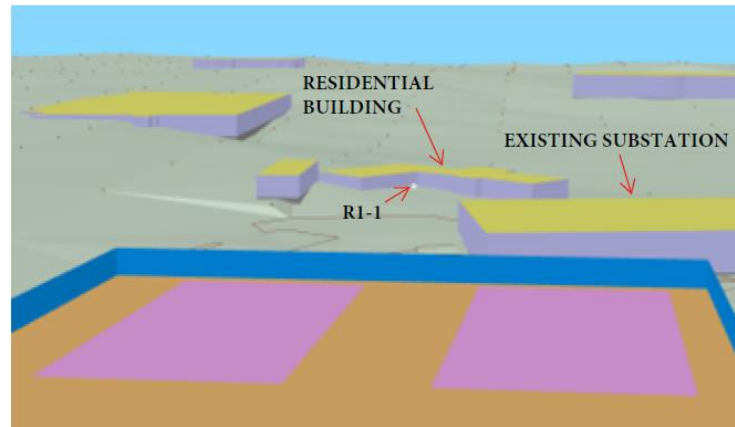
Responses to HLR Comments

“Rooftop HVAC units will be screened using a 5-foot parapet wall along the entire rooftop perimeter. The rooftop HVAC units will be situated so that all equipment is at least 6 inches below the top of the concrete parapet”

JHA updated the model to include a 9.5-foot-tall parapet wall as required by the City of Naperville. The wall fully encompasses the rooftop perimeter of the building and provides extra shielding for the rooftop HVAC units. As a result, the top of the HVAC units remain approximately one (1) foot below the top of the parapet wall.

“Please confirm that the ‘auxiliary’ building representing the substation is accurate size and shape in SoundPlan to ensure accurate shielding effects”

The existing substation building and walls shielding the R1-1 receptor from property-line noise sources is set at 19 feet in total height. The corners of the building/walls are set into the ground slightly. Though the height is variable above ground given the variation in grade, the height near the corners of the wall nearest to the R1-1 receptor are approximately 16 feet in height. Since most of the noise impact at R1-1 is from rooftop HVAC units, and the substation does not break line of sight from the top of the parapet wall with the current receiver location. The shielding effects of the substation walls are not significantly effective in reducing noise propagation from the proposed data center noise for the current Leq-N model (Figure 4 on the NIA). A 3D image of the line-of-sight between the rooftop parapet and Receiver R1-1 is provided below for visual context.



“While not required by the City’s ordinance, as a best management practice we would recommend that Jacob and Hefner compare the proposed noise levels to the Illinois Pollution Control Board (IPCB) standards to ensure that none of the nine octave bands are exceeded, at the closest residential receptor (R1-1). If there are any exceedances to any of the nine octave bands, please provide proposed mitigation”

JHA ran the updated model with spectral analysis of single octave pressure bands. The property use is considered Class C as listed in IAC 901 and the R1-1 receptor is listed as Class A. As a result, JHA screened the octave pressure band emissions against regulators standards for a Class C emitter to a Class A receiver for daytime (Leq-D), loudest daytime hour (Leq-Max hr), and nighttime (Leq-N) time slices. The results are provided below:

001 Situation 1 Leq-D - Property Class C								
Octave Pressure Band	Units	IPCB Limits Class C Emitted to Class A	R1-1		R1-6 (2 and floor)		R1-6 (2) (2 and floor)	
			Day (A)	Day (Z)	Day (A)	Day (Z)	Day (A)	Day (Z)
31.5 Hz	dBA/dBZ	75						
63 Hz	dBA/dBZ	74	24.1	50.3	21.2	47.4	19.7	45.9
125 Hz	dBA/dBZ	69	33.8	49.9	29.2	45.3	28	44.1
250 Hz	dBA/dBZ	64	38.6	47.2	38.9	47.5	37.5	46.1
500 Hz	dBA/dBZ	58	41.1	44.3	41.8	45	39.5	42.7
1000 Hz	dBA/dBZ	52	43.1	43.1	41.3	41.3	39	39
2000 Hz	dBA/dBZ	47	34.7	33.5	35.7	34.5	33.8	32.6
4000 Hz	dBA/dBZ	43	25.2	24.2	25.8	24.8	24.3	23.3
8000 Hz	dBA/dBZ	40	6.1	7.2	-4.4	-3.3	-5.3	-4.2
Sum			46.7	54.9	46.2	52.9	44.1	51.3



003 Situation 2 Leq-Max Hr - Property Class C								
Octave Pressure Band	Units	IPCB Limits Class C Emitted to Class A	R1-1		R1-6 (2nd floor)		R1-6 (2) (2 and floor)	
			Day (A)	Day (Z)	Day (A)	Day (Z)	Day (A)	Day (Z)
31.5 Hz	dBA/dBZ	75						
63 Hz	dBA/dBZ	74	25.9	52.1	20.5	46.7	19.3	45.5
125 Hz	dBA/dBZ	69	34.4	50.5	29.2	45.3	27.9	44
250 Hz	dBA/dBZ	64	40.4	49	37.8	46.4	36.4	45
500 Hz	dBA/dBZ	58	42.4	45.6	40.2	43.4	38	41.2
1000 Hz	dBA/dBZ	52	43.9	43.9	40.2	40.2	37.7	37.7
2000 Hz	dBA/dBZ	47	38	36.8	32.3	31.1	30.2	29
4000 Hz	dBA/dBZ	43	31.7	30.7	16.8	15.8	15.3	14.3
8000 Hz	dBA/dBZ	40	11.6	12.7	-10.3	-9.2	-11.8	-10.7
Sum			48.1	56.2	44.7	52.0	42.6	50.5

002 Situation 1 Leq-N - Property Class C											
Octave Pressure Band	Units	IPCB Limits Class C Emitted to Class A									
			R1-1			R1-6 (2 and floor)			R1-6 (2) (2 and floor)		
		Night (Z)	Day	Night (A)	Night (Z)	Day	Night (A)	Night (Z)	Day	Night (A)	Night (Z)
31.5 Hz	dBA/dBZ	69									
63 Hz	dBA/dBZ	67		21.3	47.5		16.7	42.9		15.8	42
125 Hz	dBA/dBZ	62		31	47.1		26.2	42.3		24.9	41
250 Hz	dBA/dBZ	54		34.6	43.2		33.8	42.4		32.3	40.9
500 Hz	dBA/dBZ	47		38	41.2		37.3	40.5		34.9	38.1
1000 Hz	dBA/dBZ	41		40	40		37.2	37.2		34.7	34.7
2000 Hz	dBA/dBZ	36		29.6	28.4		28.3	27.1		26.1	24.9
4000 Hz	dBA/dBZ	32		16	15		11.6	10.6		10.1	9.1
8000 Hz	dBA/dBZ	32		-0.1	1		-18.9	-17.8		-20.1	-19
		Sum		43.3	51.8		41.5	48.5		39.3	47.0

Daytime and nighttime octave pressure band noise emissions for the proposed data center meet all IPCB standards for Class C property emissions to a Class A property.

“It was assumed for purposes of the study that the HVAC unit would only be running at 50%-60%. We are under the impression that data centers are known to run hot and asked Jacob and Hefner if this was a valid assumption”

JHA refers to the Mechanical Engineer’s letter related to the selected run capacities used for the SoundPlan Model.

Conclusion

JHA has updated the NIA and responded to comments from HLR. The updated model and comments in this RTC address the following: (i) the model is updated to now include only a single building, (ii) the model increases the height of the parapet wall to 9.5 feet to provide greater shielding of noise emanating from the rooftop HVAC units, (iii) octave pressure band analysis has been performed to compare the noise emissions from the proposed data center to IPCB standards, and (iv), reference to the MEP letter is reiterated in response to the question on HVAC run capacity. With these adjustments/changes and considerations, JHA has addressed the City of Naperville’s and HLR’s comments pertaining to JHA’s original NIA.



Prepared by:

Austin Wallerstedt
Project Scientist

Attachments:

Attachment 1 – Noise Impact Assessment of Proposed Data Center



ATTACHMENT 1

Noise Impact Assessment