September 3, 2025

Greg Delmotte
Equinix
One Lagoon Drive, Fourth Floor
Redwood City, CA 94065

Re: Equinix Data Center - Acoustic Evaluation
Minooka, Illinios
SM&W #250795

Dear Mr. Delmotte:

Shen Milsom & Wilke, LLC (SM&W) has prepared this letter to summarize the acoustical evaluation of the new data center in Minooka Illinois. This letter includes the noise survey results (completed in June, 2025) and the environmental noise analysis of the chiller and emergency generators compared with state noise codes. The results of the analysis indicate that the noise produced by the proposed equipment with the sound mitigation measures described will be in compliance with the state noise regulations at all existing residential uses and most property lines. A limited area of the north property line may exceed the nighttime noise code limit by only 2 dBA under worst case conditions. It should be understood that this worst case (high temperature nighttime condition) seldom occurs and there are no current residences at these locations. Should noise become an issue at this location, supplemental sound mitigation including chiller sound attenuators and addition sound barrier walls can be added at a later date.

Noise Code Requirements

The State of Illinois maintains a noise code within Title 35 Environmental Protection, Subtitle H Noise, Chapter 1: Pollution Control Board. Specifically Part 901 covers “Sound Emission and Limitations for Property Line Noise Sources.” The code limits noise based classification of properties (Class A, B and C) by various descriptions of use type. The Equinix property is considered “information services and data processing industries” and is considered land Class B. The Equinix site is bounded by the following properties and assumed classifications:

- **North:** Wildy Road, Currently agriculture (Class C), but possible future residential (Class A)
- **East:** Kendall Dynegy Energy (Class C)
- **South:** Holt Road, Agriculture, with current residences to be acquired by Equinix (Class A)
- **West:** Ridge Road with existing residences and a residential community (Class A)

The code does not provide any quantitative noise level limits for Class C receiving properties. For sound emitted to Class A property from Class B property, the following standards apply:

TITLE 35: ENVIRONMENTAL PROTECTION SUBTITLE H: NOISE CHAPTER I: POLLUTION CONTROL BOARD PART 901 SOUND EMISSION STANDARDS AND LIMITATIONS FOR PROPERTY LINE-NOISE-SOURCES, Sound Pressure Levels (dB re: 20μPa)										
Octave Band Center Freq.(Hz)	Overall dBA	31.5	63	125	250	500	1000	2000	4000	8000
Daytime (7am-10pm) **Class B to Class A**	55	72	71	65	57	51	45	39	34	32
Nighttime (10pm-7am) **Class B to Class A**	44	63	61	55	47	40	35	30	25	25

It should be noted that the overall A-weighted sound levels (dBA) are calculated from the spectrum levels provided from the code and rounded to the neared whole decibel. The A-weighted value is commonly used in environmental noise studies and for final commissioning testing if applicable.

The noise code does not provide any special provisions for emergency generator noise which generally do not operate and are typically tested during daytime hours. For the purpose of this study, a scenario with only 3 generators operating simultaneously during daytime hours was analyzed.

Site Survey

SM&W conducted a site visit on June 5 & 6, 2025 to document the noise levels at the property and the nearby community. One location was used for a 24-hour noise monitor and was located approximately 200 feet east of Ridge Road on an existing residential property owned by Equinix. Other measurement locations were selected for short term sound level meausrements during daytime and nighttime hours. All testing was conducted using an ANSI Type 1 Brüel & Kjær 2270 sound level meter and the calibration was verified before and after the measurements with no drift in sensitivity.

The table and figure below summarizes the sound levels measured for each location.

Location		Measured Sound Levels – Average & (Minimum) A-weighted Sound Pressure Level (dBA)	
		June 5, 2025 Night	June 6, 2025 Day
1	South Property Line Holt Road	47 (44 min)	66 (44 min)
2	West Property Line Khater Dr & Ridge Rd	45 (44 min)	58 (49 min)
3	West Property Line Fair Ln & Ridge Rd	55 (42 min)	48 (44 min)
4	Residential Community Daniel Dr.	42 (38 min)	45 (38 min)
5	North Property Line Wildy Road	50 (49 min)	49 (46 min)
6	16929 Ridge Road Property 24 hour Noise Monitor Location	61 max* 48 average* 40 min*	62 max* 52 average* 45 min*

* Computed from 24-hour noise monitor data including June 5 & June 6 time (see below).

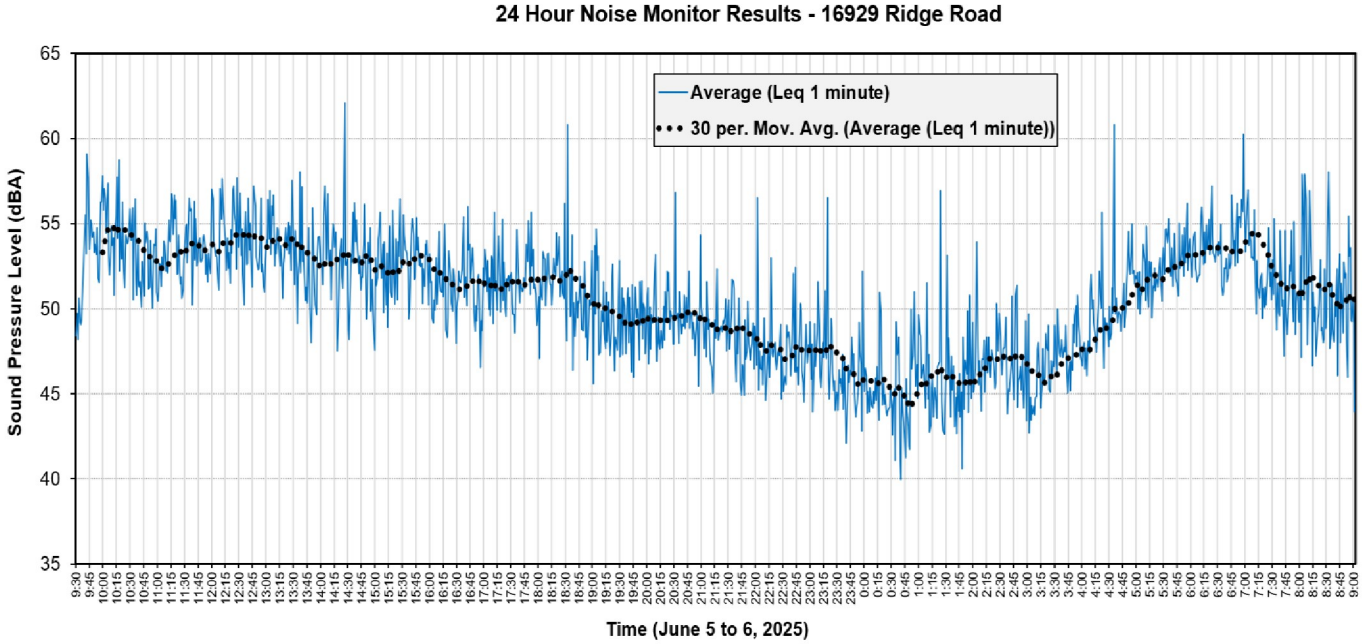


Figure 1: Sound Level Monitor Results, June 5 to 6, 2025

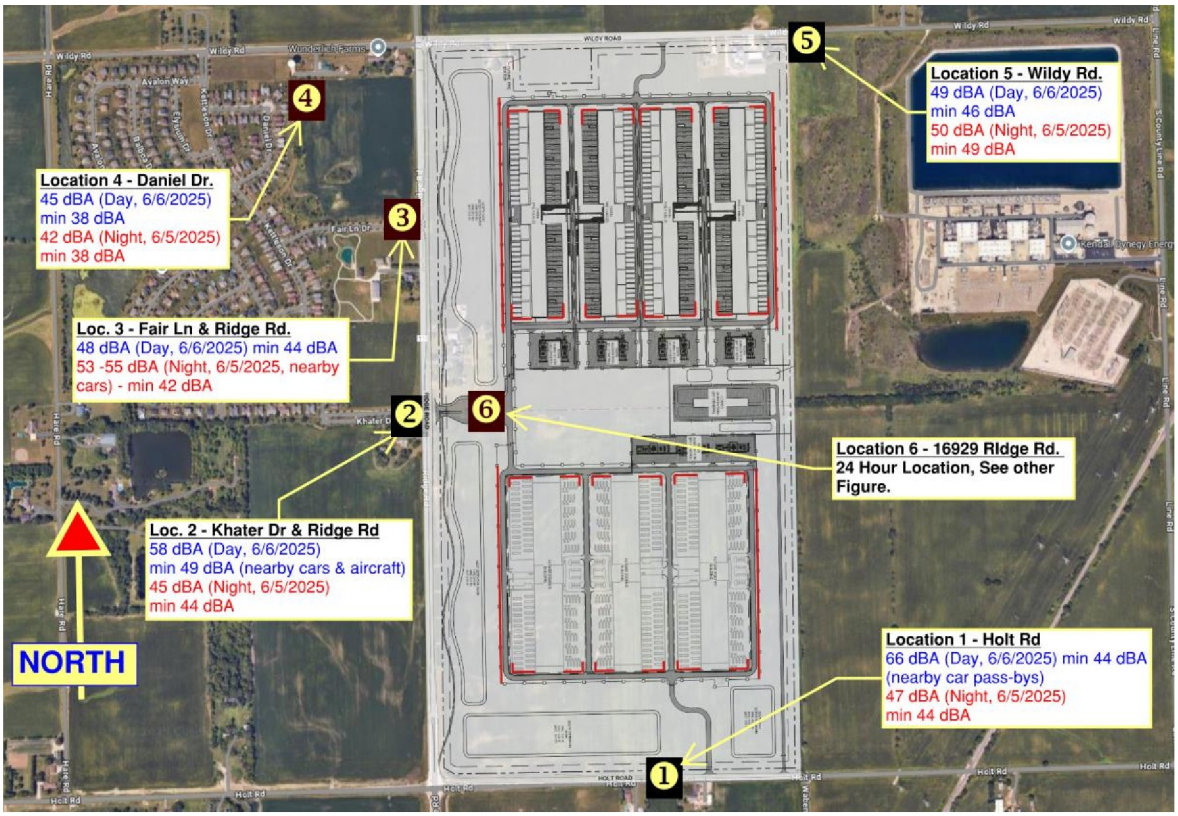


Figure 2: Short Term Sound Level Survey Results

The results of the survey indicate that sound levels seldom fall to 44 dBA or lower at the property line of the site such that meeting nighttime code is expected to result in minimal noise impact to the community. Noise sources contributing to the measurements included distant (highway) and nearby vehicle traffic (pass-bys), power plant, and occasional aircraft. Minimum values shown to represent noise without local traffic pass-bys.

Noise Evaluation

SM&W has completed an analysis of the primary noise sources planned for the data center. The analysis was conducted using manufacturer-provided sound data for the air-cooled chillers and emergency generators. Due to the size of the site and quantity of sound sources, SM&W performed the outdoor noise analysis using an industry standard commercial sound modeling software called SoundPLAN. The model incorporates industry standard sound propagation formulas for distance attenuation and takes into account the effects of structures (buildings, solid walls). The model was created using drawings provided by the architectural team and sound data provided by equipment manufacturers. Two primary scenarios were evaluated; (1) all 336 chillers operating and (2) all chillers operating and three emergency generators operating. The three generators are typical of a periodic testing scenario.

Below is a summary of the equipment and sound level data that was used for the acoustical model:

- Air Cooled Chiller (York model YVAM1500, 400 tons): Sound Power Level of 95 dBA at 100% load with 81.1 degree ambient nighttime temperature.
- Cummins Generator C3500 D6E, 3500 kW: Sound pressure Leve of 87 dBA at 23 feet with a Level 1 sound-attenuated walk-in enclosure.

Through several analyses it was found that sound attenuation was needed to reduce the chiller noise to meet the noise code. Therefore, the final model includes the impact of a sound attenuation package including compressor blankets and a 4 foot tall sound attenuation baffle system over the chiller fans. This achieved approximately 10 dBA overall sound reduction for each chiller (85 dBA sound power). The attenuation package is applied to 50% (168 total chiller

units). Furthermore, the chillers without the attenuation package were located towards the center of the site to help reduce noise at the property lines.

The project site includes several free standing walls to provide visual screening. These are located on the west and east of the buildings. Additional "wing walls" have been included in the design at the north and south for sound mitigation. All walls are intended to be 6 meters tall. See below site plan with equipment and screen walls indicated.

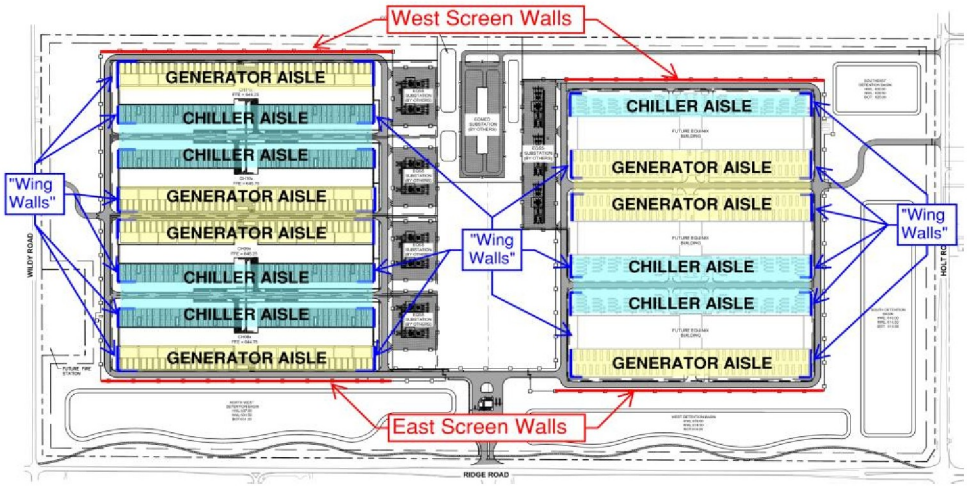


Figure 3: Site Plan Shown Screen Walls and Equipment Aisles

Below are sound level contour plots for the two scenarios evaluated: Chillers only and Chillers with three Generators.

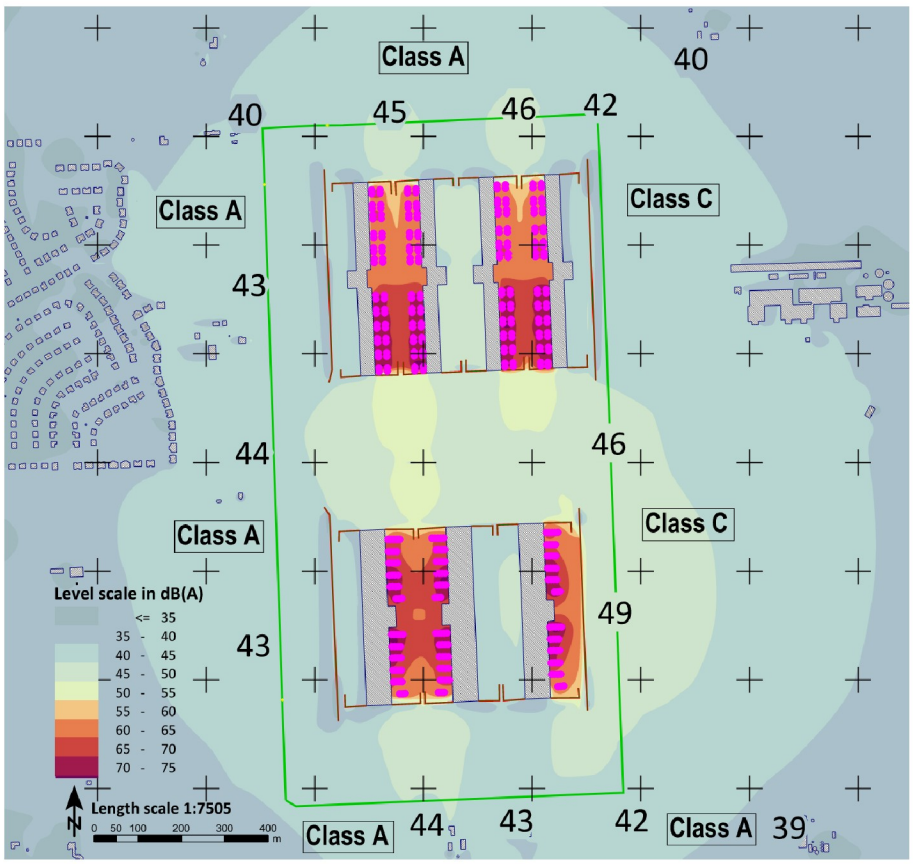


Figure 4: SoundPlan Noise Level Contour Predictions – Chillers Only

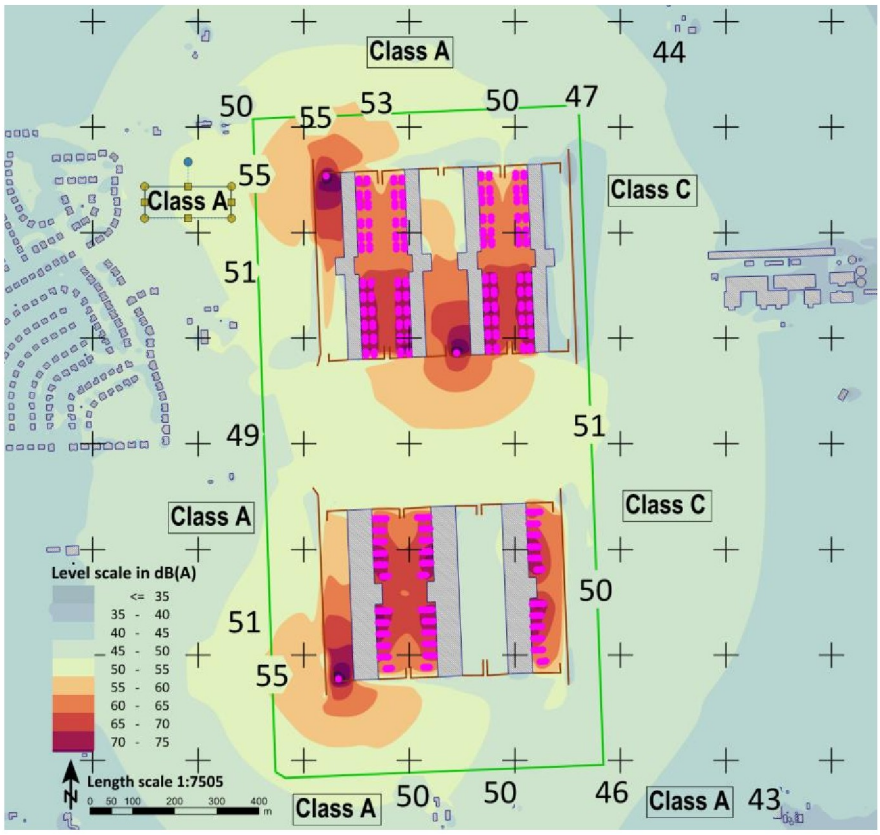


Figure 5: SoundPlan Noise Level Contour Predictions – Chillers and Three Generators

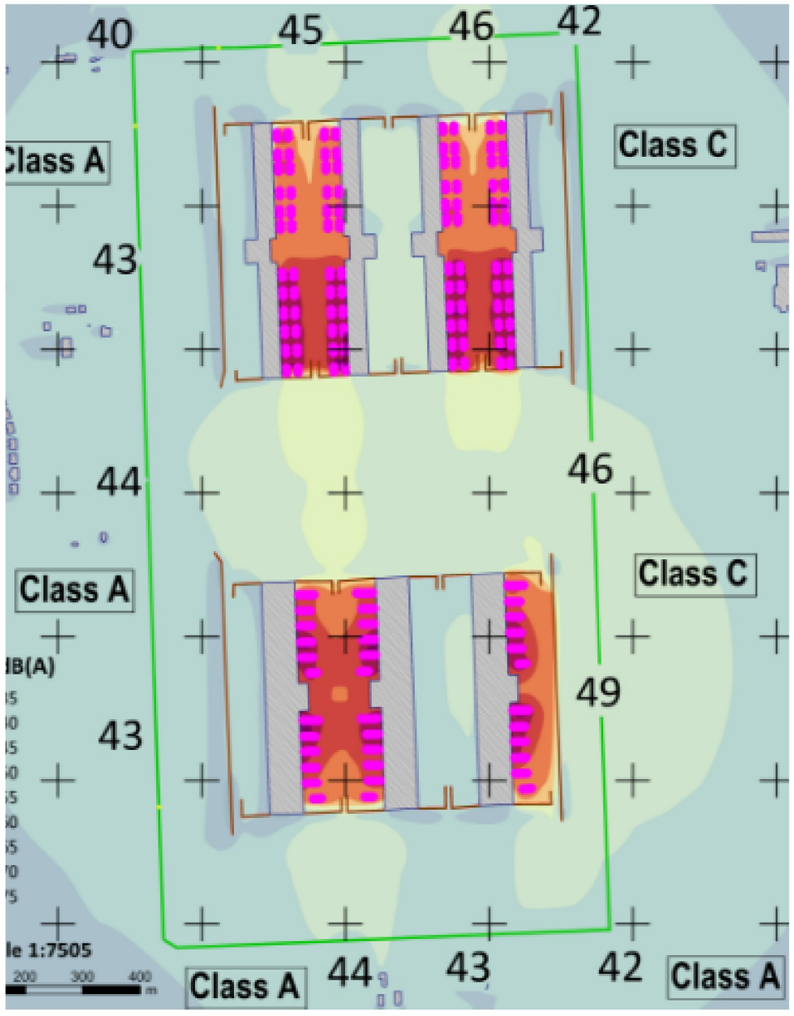
Discussion

The chillers will operate continuously (day and night) and sound output will vary with load and ambient temperatures. The chiller noise is evaluated with respect to the nighttime code limit which equates to approximately 44 dBA for Class A properties. Figure 4 shows that noise from the chillers is expected to be at or below 44 dBA at all Class A properties except for a select area of the north property line (across Wildy Road) where there currently are no residences and the presumed use is currently agriculture. Sound levels are expected to be up to 45 – 46 dBA, only 1 to 2 dBA above the nighttime limit of 44 dBA. It should be noted that the minimum measured ambient noise was 46 dBA near these; already above nighttime noise code limits. In addition, the chiller noise is a worst case sound level at 100% load and highest ambient nighttime temperature such that noise levels throughout the majority of time will be lower than indicated. Should noise be an issue as the property is built out, future noise mitigation measures include supplemental sound barriers near the “wing walls” and/or enhanced chiller noise mitigation measures can be implemented.

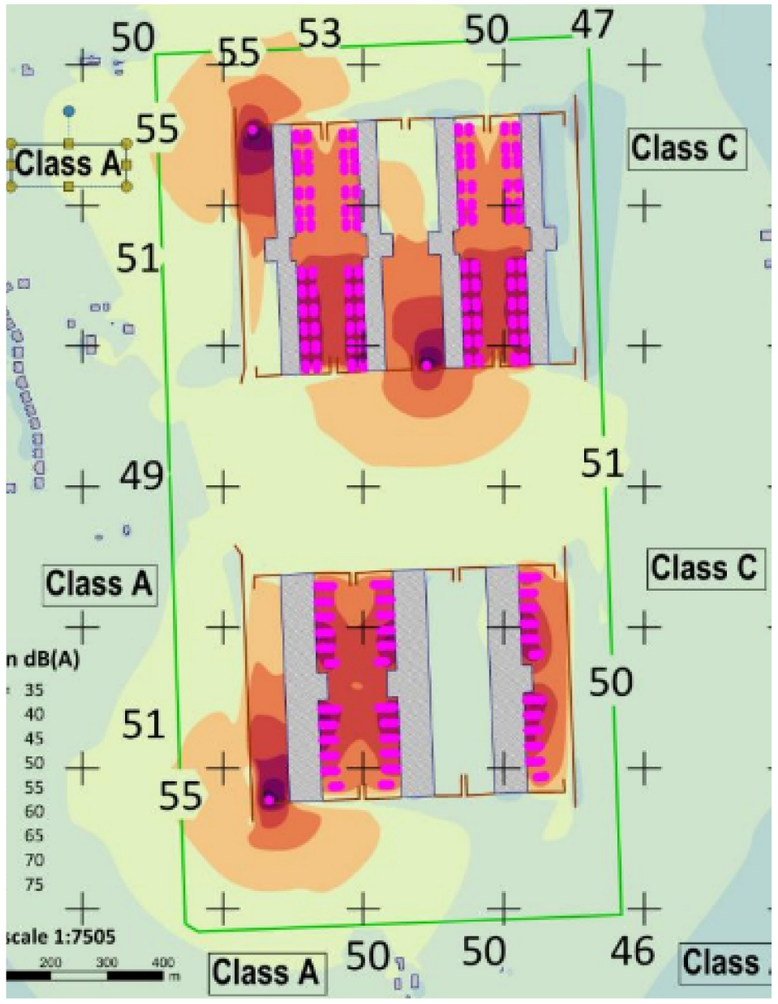
The generators will only operate during a complete power failure which will be a very rare condition. While not explicitly stated in the noise code, it is expected that such emergency operations would be exempt. This is a common exclusion for systems that are essential for life safety and in the modern day, essential services rely on data access. The most common condition for generator operations is periodic (monthly) testing which will be on a rotating schedule. Based on facility operation procedures, up to three generators could operate simultaneously (as well as the chillers). Figure 5 shows this scenario with two of the generators nearest the residential community and the expected sound levels are 55 dBA or less at all property lines and with the daytime noise code limit.

Regards,

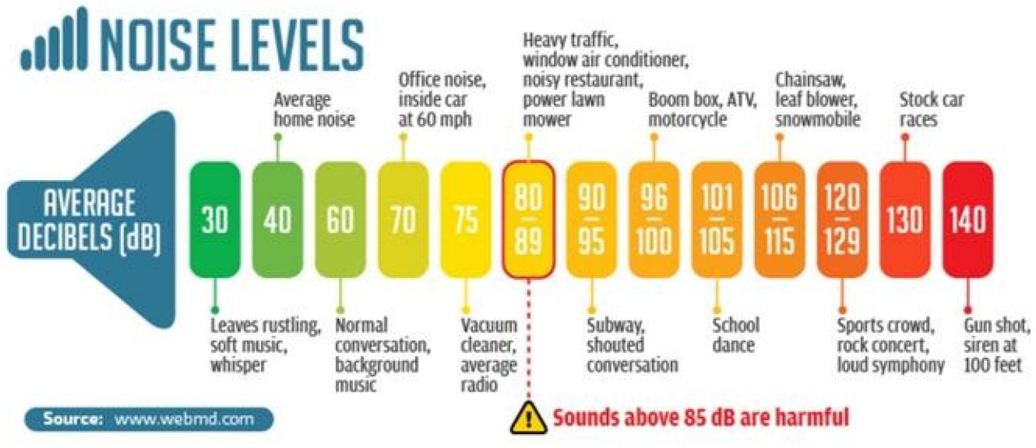
Anthony R. Bontomase, Senior Principal
abontomase@smwllc.com



PEAK 10PM SOUND LEVELS - WORST CASE MIN 80 DEGREES



PEAK DAY TIME SOUND LEVELS - WORST CASE MIN 103 DEGREES



Customer:

Project: Equinix Minooka
Project-No. 250975

Map
1

2025-07-17 Sound Barrier Chiller with Mitigation I
Result number 29
Calculation in 1.5 m above ground

Project engineer:
Created: 7/18/2025
Processed with SoundPLAN 9.0, Update 5/24/2023

Level scale in dB(A)
Leq

<=	35
35 -	40
40 -	45
45 -	50
50 -	55
55 -	60
60 -	65
65 -	70
70 -	75
75 -	80
>	80

N