MEMORANDUM

To: Karl Schrader
BuildLACCD

From: Zack Dennis

Date: December 3, 2024

Subject: Monthly Noise Report for Construction Noise Monitors, November 2024

This memorandum presents the results of the construction noise monitoring along the border between West Los Angeles College and several communities to the northwest of the campus, including Raintree, Tara Hill, Lakeside Village, and Lakeside Villas. There are currently three monitors installed to monitor construction-related truck and equipment noise, with plans to install an additional two monitors as soon as appropriate sites can be secured. Each monitor is an independent station consisting of a microphone, sound level meter, and assorted ancillary equipment. The locations of the monitors are shown in Appendix A.

Monitor A: Monitor A has not yet been installed.

Monitor B: The microphone at Monitor B is no longer serviceable due to extreme old age. The monitor will be returned to service when a replacement has been obtained.

Monitor C: Noise levels in November were similar to those observed in previous months at this location, providing further confirmation that the questionable data taken in August and early September was most likely due to a connection issue. Hourly peaks of greater than 60 dBA were observed on November 5, 8, and 14.

Monitor D: There is insufficient equipment remaining available to operate Monitor D.

Monitor E: The solar panel at Monitor E no longer provides sufficient power to the unit due to increased shade from the trees across the spillway. A new site needs to be considered.

Table 1. Summary of Monthly Results, Monitor C				
Metric	**Sound Level, dBA**			
	Average	**Maximum[2]**	**Minimum[3]**	**Standard Deviation**
Day-Night Sound Level (Ldn)	51	55	47	2.0
Work Hours Leq[1]	49	55	43	2.9

Notes:
1. The Work Hours Leq is the energy average between 8 a.m. to 6 p.m. on weekdays and 9 a.m. to 5 p.m. on Saturdays.
2. The maximum Ldn or daytime hourly Leq value during the month.
3. The minimum Ldn or daytime hourly Leq value during the month.

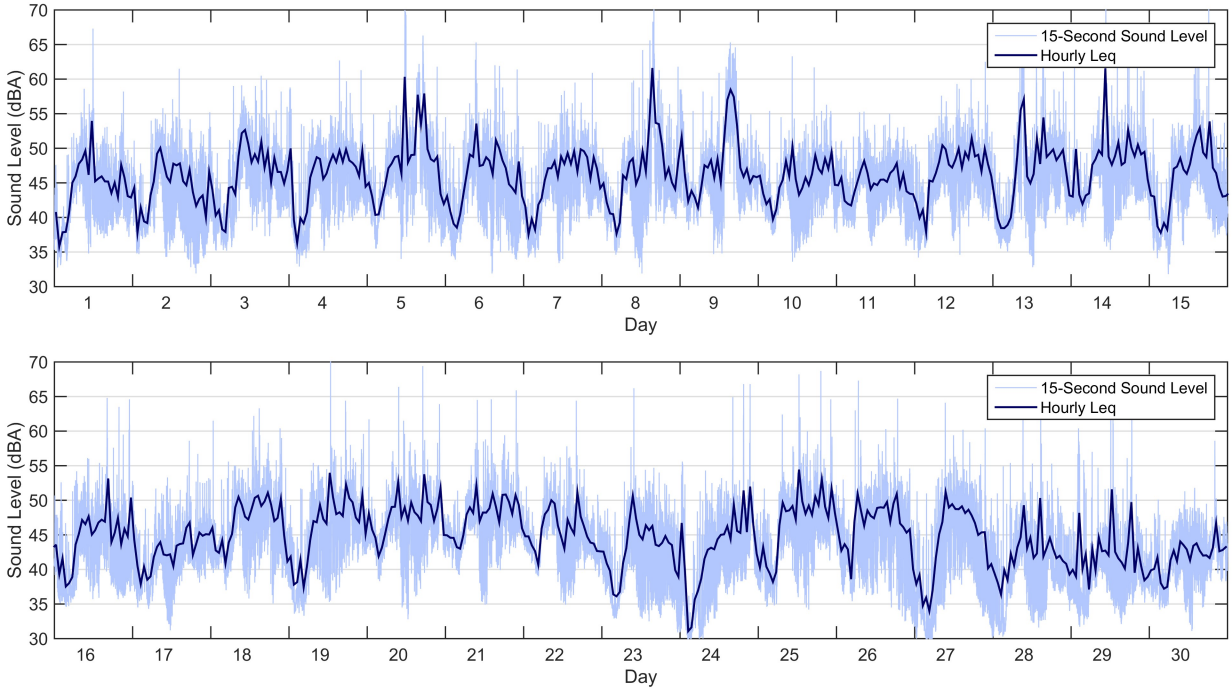


Figure 1: Monitor C Hourly Leq Results

APPENDIX A: RESULTS FOR INDIVIDUAL MONITOR SITES

Figure 2: Noise Monitor Locations

Monitor A (proposed location)

Figure 3: Photographs of Noise Monitor A

Monitor A is located near the northeast corner of the Raintree complex, south of the tennis courts and close to the property fence on the eastern edge of the Raintree complex. The microphone head is approximately level with the lower stories of the Raintree residences. Prior to construction activity, the primary noise sources in the area are local traffic, airplanes, residential activity, landscaping equipment and lawnmowers, and distant traffic noise from Interstate 405.

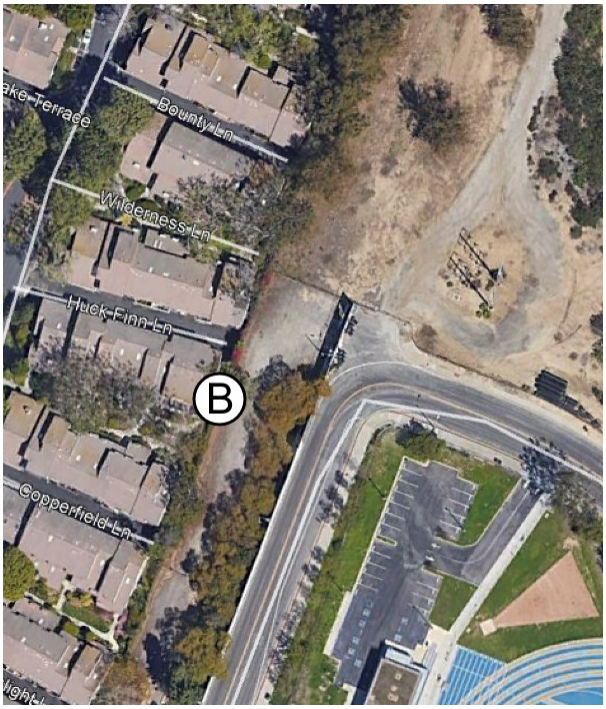
Table 2. Summary of Monthly Results, Monitor A

Month	Year	Sound Level, dBA			
		Work Hours Leq[1]	Standard Deviation	Ldn	Standard Deviation
January	2023	--[2]	--[2]	--[2]	--[2]
February	2023	--[2]	--[2]	--[2]	--[2]
March	2023	--[2]	--[2]	--[2]	--[2]
April	2023	--[2]	--[2]	--[2]	--[2]
May	2023	--[2]	--[2]	--[2]	--[2]
June	2023	--[2]	--[2]	--[2]	--[2]
July	2023	--[2]	--[2]	--[2]	--[2]
August	2023	--[2]	--[2]	--[2]	--[2]
September	2023	--[2]	--[2]	--[2]	--[2]

Table 2. Summary of Monthly Results, Monitor A					
October	2023	--[2]	--[2]	--[2]	--[2]
November	2023	--[2]	--[2]	--[2]	--[2]
December	2023	--[2]	--[2]	--[2]	--[2]
January	2024	--[2]	--[2]	--[2]	--[2]
February	2024	--[2]	--[2]	--[2]	--[2]
March	2024	--[2]	--[2]	--[2]	--[2]
April	2024	--[2]	--[2]	--[2]	--[2]
May	2024	--[2]	--[2]	--[2]	--[2]
June	2024	--[2]	--[2]	--[2]	--[2]
July	2024	--[2]	--[2]	--[2]	--[2]
August	2024	--[2]	--[2]	--[2]	--[2]
September	2024	--[2]	--[2]	--[2]	--[2]
October	2024	--[2]	--[2]	--[2]	--[2]
November	2024	--[2]	--[2]	--[2]	--[2]

Notes:
1. The work hours Leq is the energy average between 8 a.m. to 6 p.m. on weekdays and 9 a.m. to 5 p.m. on Saturdays.
2. No monitor installed.

Monitor B



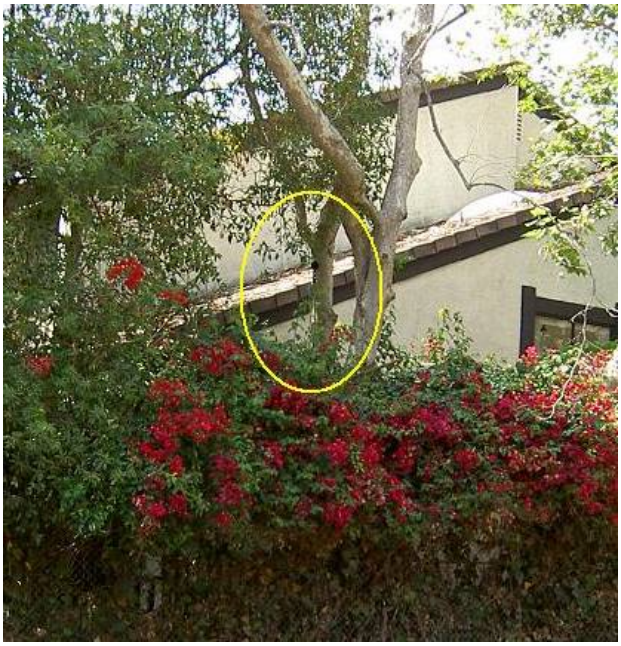


Figure 4: Photographs of Noise Monitor B

Monitor B is located hanging from a tree at a height of approximately 15 feet above ground level near the residence at 5111 Wilderness Lane. The microphone head is approximately level with the second story of the nearby Raintree residences. The monitor is located about 65 feet away from Freshman Drive and about 140 feet away from where the road turns right and becomes Sophomore Drive. Prior to construction activity, the primary noise source in the area was local traffic on Freshman Drive and Sophomore Drive.

Table 3. Summary of Monthly Results, Monitor B

Month	Year	Sound Level, dBA			
		Work Hours Leq[1]	Standard Deviation	Ldn	Standard Deviation
January	2023	--[3]	--[3]	--[3]	--[3]
February	2023	--[3]	--[3]	--[3]	--[3]
March	2023	--[3]	--[3]	--[3]	--[3]
April	2023	--[3]	--[3]	--[3]	--[3]
May	2023	--[3]	--[3]	--[3]	--[3]
June	2023	--[3]	--[3]	--[3]	--[3]

Table 3. Summary of Monthly Results, Monitor B					
July	2023	--[3]	--[3]	--[3]	--[3]
August	2023	--[3]	--[3]	--[3]	--[3]
September	2023	--[3]	--[3]	--[3]	--[3]
October	2023	--[3]	--[3]	--[3]	--[3]
November	2023	--[3]	--[3]	--[3]	--[3]
December	2023	--[3]	--[3]	--[3]	--[3]
January	2024	--[3]	--[3]	--[3]	--[3]
February	2024	--[3]	--[3]	--[3]	--[3]
March	2024	--[3]	--[3]	--[3]	--[3]
April	2024	--[3]	--[3]	--[3]	--[3]
May	2024	--[3]	--[3]	--[3]	--[3]
June	2024	--[3]	--[3]	--[3]	--[3]
July	2024	--[3]	--[3]	--[3]	--[3]
August	2024	--[3]	--[3]	--[3]	--[3]
September	2024	--[3]	--[3]	--[3]	--[3]
October	2024	--[3]	--[3]	--[3]	--[3]
November	2024	--[3]	--[3]	--[3]	--[3]

Notes:
1. The work hours Leq is the energy average between 8 a.m. to 6 p.m. on weekdays and 9 a.m. to 5 p.m. on Saturdays.
2. Data was not recorded due to power issues.
3. Monitor not functional.

Monitor C

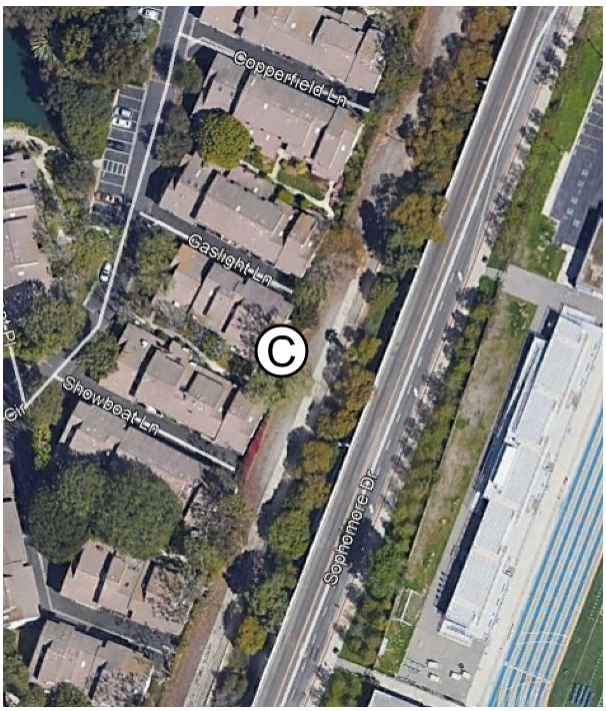


Figure 5: Photographs of Noise Monitor C

Monitor C is located hanging from a tree at a height of approximately 30 feet above ground level near the residence at 5111 Gaslight Lane. The microphone head is approximately level with the second story of the nearby Raintree residences. The monitor is located about 75 feet away from Freshman Drive. Prior to construction activity, the primary noise source in the area was local traffic on Freshman Drive.

Table 4. Daily Results
Monitor C, November 2024

Date	Sound Level, dBA			
	Work Hours Leq	Maximum[1]	Minimum[2]	Ldn
11/1/24	48	67	33	50
11/2/24	47	62	32	50
11/3/24	--	61	35	51
11/4/24	48	63	33	52
11/5/24	55	70	34	53
11/6/24	50	65	32	51
11/7/24	48	61	33	51
11/8/24	54	76	32	53
11/9/24	54	65	35	55
11/10/24	--	63	34	51
11/11/24	45	55	35	51
11/12/24	49	63	34	52
11/13/24	52	67	33	52
11/14/24	53	76	35	54
11/15/24	49	70	32	50
11/16/24	48	65	35	51
11/17/24	--	59	31	49
11/18/24	49	63	35	52
11/19/24	50	70	33	52
11/20/24	50	69	33	54
11/21/24	49	66	35	53
11/22/24	48	64	35	51
11/23/24	47	66	31	48
11/24/24	--	67	30	50
11/25/24	50	69	34	53
11/26/24	48	67	32	53
11/27/24	49	64	29	48
11/28/24	46	66	30	47
11/29/24	45	66	32	49
11/30/24	43	59	31	48

Notes:
1. The maximum sound level over a 15 second interval (15 second Leq) during the 24-hour period.
2. The minimum sound level over a 15 second interval (15 second Leq) during the 24-hour period.
3. Data lost due to monitor power failure.

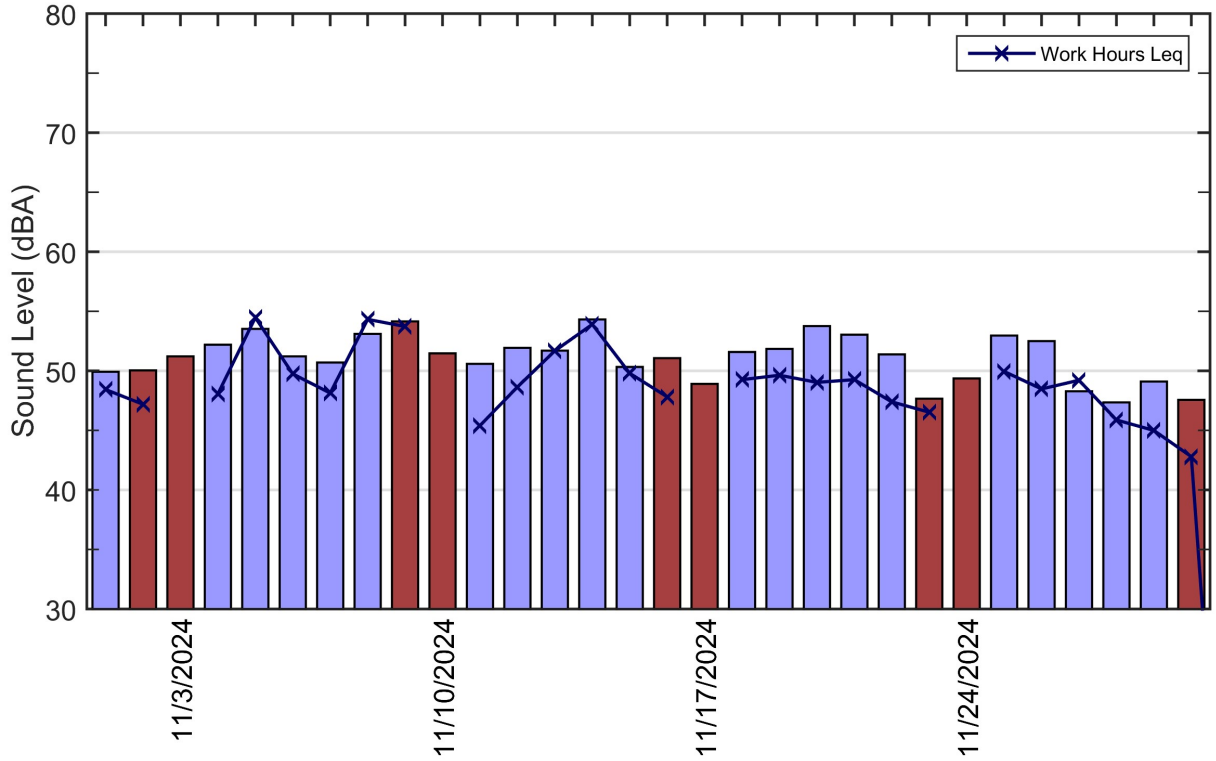


Figure 6: Monitor C Ldn and Daytime Leq Results

Table 5. Summary of Monthly Results, Monitor C

Month	Year	Sound Level, dBA			
		Work Hours Leq[1]	Standard Deviation	Ldn	Standard Deviation
January	2019	50	4.0	53	2.8
February	2019	46	4.1	49	3.4
March	2019	48	5.6	49	3.5
April	2019	46	5.6	47	3.1
May	2019	48	2.7	51	3.7
June	2019	49	3.7	51	2.1
July	2019	49	3.7	52	2.7
August	2019	48	3.0	51	1.8
September	2019	50	3.7	52	2.1
October	2019	52	5.5	53	3.2
November	2019	56	3.5	55	2.6
December	2019	56	5.2	56	4.0
January	2020	54	2.0	55	1.7

Table 5. Summary of Monthly Results, Monitor C					
February	2020	55	2.2	55	2.3
March	2020	54	7.9	59	9.0
April	2020	50	5.7	54	6.3
May	2020	49	1.9	51	1.2
June	2020	50	3.1	52	2.2
July	2020	50	5.3	52	3.1
August	2020	51	3.6	53	2.6
September	2020	49	2.2	51	1.1
October	2020	49	2.9	51	1.6
November	2020	47	2.2	51	1.3
December	2020	48	2.3	51	1.5
January	2021	52	1.8	54	1.4
February	2021	49	2.2	52	1.6
March	2021	49	1.3	52	1.8
April	2021	48	1.4	51	1.0
May	2021	49	3.5	51	1.8
June	2021	48	2.7	51	1.7
July	2021	49	1.6	52	1.0
August	2021	51	3.2	52	2.2
September	2021	52	4.6	53	3.4
October	2021	50	2.4	51	2.0
November	2021	47	2.0	50	1.6
December	2021	48	4.9	52	6.0
January	2022	52	2.2	54	1.6
February	2022	49	5.3	52	3.1
March	2022	51	3.2	53	2.5
April	2022	50	1.2	52	1.7
May	2022	50	2.3	51	1.9
June	2022	49	1.6	51	1.7
July	2022	47	1.6	49	0.9
August	2022	48	3.6	50	2.2
September	2022	48	3.6	50	2.2
October	2022	51	4.7	52	3.2
November	2022	49	1.8	54	8.9
December	2022	--[2]	--[2]	--[2]	--[2]
January	2023	50	6.6	56	6.5
February	2023	49	3.1	52	3.3
March	2023	50	7.2	55	11.3
April	2023	48	1.8	51	1.2
May	2023	49	2.5	51	2.5
June	2023	47	1.3	49	1.5
July	2023	48	4.2	50	3.5

Table 5. Summary of Monthly Results, Monitor C					
August	2023	48	1.8	52	8.3
September	2023	50	2.7	51	1.8
October	2023	--[3]	--[3]	--[3]	--[3]
November	2023	48	4.6	51	4.6
December	2023	52	11.1	57	17.0
January	2024	50	2.9	53	2.4
February	2024	51	4.5	56	6.8
March	2024	53	3.5	57	7.6
April	2024	47	3.4	53	0.4
May	2024	49	1.9	50	2.4
June	2024	51	3.7	52	3.2
July	2024	52	6.2	55	6.9
August	2024	66[4]	14.3[4]	74[4]	12.2[4]
September	2024	50[5]	1.2[5]	50[5]	1.0[5]
October	2024	52	5.5	52	3.8
November	2024	49	2.9	51	2.0

Notes:
1. The work hours Leq is the energy average between 8 a.m. to 6 p.m. on weekdays and 9 a.m. to 5 p.m. on Saturdays.
2. Data was not reported because microphone was not functioning properly.
3. Data was not recorded in October of 2023 because the monitor's memory was full.
4. Data not valid; equipment issues are suspected.
5. Data from 9/1/24 to 9/8/24 not included in calculations.

Monitor D

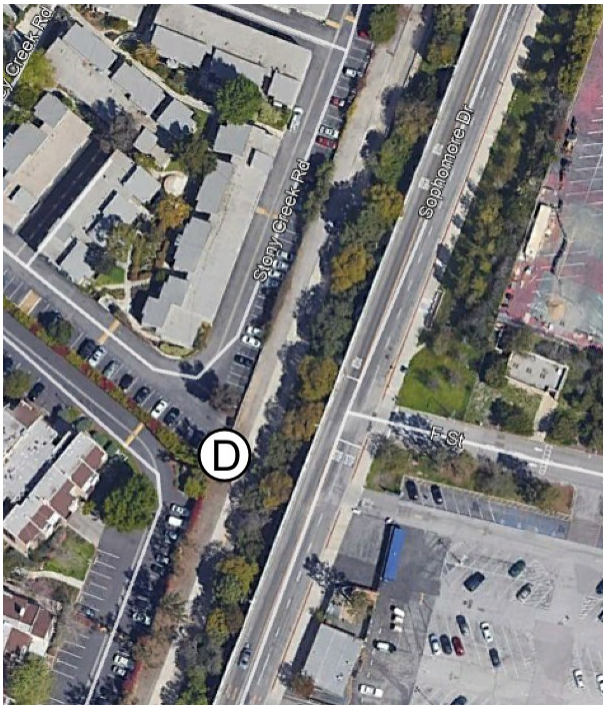


Figure 7: Photographs of Noise Monitor D

Monitor D is located at the southeast corner of the Tara Hill complex. The microphone head is approximately level with the upper stories of the Tara Hill residences. The monitor is located about 80 feet away from Freshman Drive. Prior to construction activity, the primary noise source in the area was local traffic on Freshman Drive.

Table 6. Summary of Monthly Results, Monitor D

Month	Year	Sound Level, dBA			
		Work Hours Leq[1]	Standard Deviation	Ldn	Standard Deviation
January	2023	--[2]	--[2]	--[2]	--[2]
February	2023	--[2]	--[2]	--[2]	--[2]
March	2023	--[2]	--[2]	--[2]	--[2]
April	2023	--[2]	--[2]	--[2]	--[2]
May	2023	--[2]	--[2]	--[2]	--[2]
June	2023	--[2]	--[2]	--[2]	--[2]
July	2023	--[2]	--[2]	--[2]	--[2]
August	2023	--[2]	--[2]	--[2]	--[2]

Table 6. Summary of Monthly Results, Monitor D					
September	2023	--[2]	--[2]	--[2]	--[2]
October	2023	--[2]	--[2]	--[2]	--[2]
November	2023	--[2]	--[2]	--[2]	--[2]
December	2023	--[2]	--[2]	--[2]	--[2]
January	2024	--[2]	--[2]	--[2]	--[2]
February	2024	--[2]	--[2]	--[2]	--[2]
March	2024	--[2]	--[2]	--[2]	--[2]
April	2024	--[2]	--[2]	--[2]	--[2]
May	2024	--[2]	--[2]	--[2]	--[2]
June	2024	--[2]	--[2]	--[2]	--[2]
July	2024	--[2]	--[2]	--[2]	--[2]
August	2024	--[2]	--[2]	--[2]	--[2]
September	2024	--[2]	--[2]	--[2]	--[2]
October	2024	--[2]	--[2]	--[2]	--[2]
November	2024	--[2]	--[2]	--[2]	--[2]

Notes:
1. The work hours Leq is the energy average between 8 a.m. to 6 p.m. on weekdays and 9 a.m. to 5 p.m. on Saturdays.
2. Monitor not in service.

Monitor E

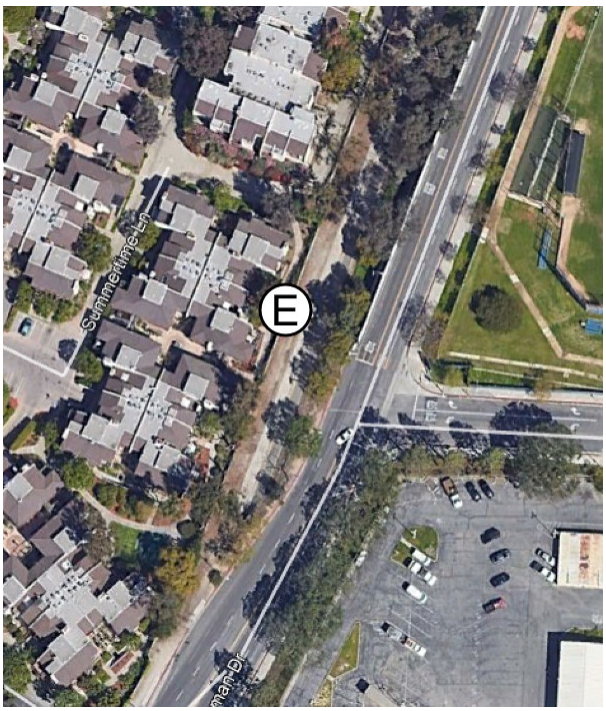


Figure 8: Photographs of Noise Monitor E

Monitor E is located near Building 15 in the south end of the Lakeside Villas complex, directly next to the property wall that separates the Building 15 pathway from the LADWP spillway. Prior to construction activity, the primary noise sources in this area were residential activity, landscaping equipment and lawnmowers, airplanes, athletic activity on the baseball field, and traffic noise from Freshman Drive and A Street.

Table 7. Summary of Monthly Results, Monitor E

Month	Year	Sound Level, dBA			
		Work Hours Leq[1]	Standard Deviation	Ldn	Standard Deviation
January	2019	53	2.9	54	2.2
February	2019	--[2]	--[2]	--[2]	--[2]
March	2019	54	2.4	56	2.9
April	2019	57	2.8	56	2.4
May	2019	57	3.3	56	2.4
June	2019	54	2.5	54	1.9

Table 7. Summary of Monthly Results, Monitor E					
July	2019	53	2.3	54	2.0
August	2019	54	3.2	54	1.9
September	2019	55	2.9	55	1.7
October	2019	56	3.4	56	2.6
November	2019	56	3.1	56	2.2
December	2019	56	4.8	57	3.1
January	2020	56	3.2	56	2.3
February	2020	57	3.2	57	2.6
March	2020	56	5.2	56	3.3
April	2020	53	5.1	54	3.5
May	2020	53	5.2	54	3.0
June	2020	47	3.3	48	2.5
July	2020	50	6.7	51	4.3
August	2020	48	4.2	55	5.3
September	2020	51	6.4	55	4.0
October	2020	58	3.7	57	2.7
November	2020	54	5.8	56	3.5
December	2020	51	4.3	54	3.3
January	2021	54	2.7	56	2.0
February	2021	--[3]	--[3]	--[3]	--[3]
March	2021	52	3.3	54	2.4
April	2021	48[4]	1.4[4]	51[4]	1.0[4]
May	2021	--[4]	--[4]	--[4]	--[4]
June	2021	--[4]	--[4]	--[4]	--[4]
July	2021	--[4]	--[4]	--[4]	--[4]
August	2021	--[4]	--[4]	--[4]	--[4]
September	2021	--[4]	--[4]	--[4]	--[4]
October	2021	--[4]	--[4]	--[4]	--[4]
November	2021	--[4]	--[4]	--[4]	--[4]
December	2021	--[4]	--[4]	--[4]	--[4]
January	2022	--[4]	--[4]	--[4]	--[4]
February	2022	--[4]	--[4]	--[4]	--[4]
March	2022	--[4]	--[4]	--[4]	--[4]
April	2022	--[4]	--[4]	--[4]	--[4]
May	2022	--[4]	--[4]	--[4]	--[4]
June	2022	--[4]	--[4]	--[4]	--[4]
July	2022	--[4]	--[4]	--[4]	--[4]
August	2022	--[4]	--[4]	--[4]	--[4]
September	2022	--[4]	--[4]	--[4]	--[4]
October	2022	--[4]	--[4]	--[4]	--[4]
November	2022	--[4]	--[4]	--[4]	--[4]
December	2022	--[4]	--[4]	--[4]	--[4]

Table 7. Summary of Monthly Results, Monitor E					
January	2023	--[4]	--[4]	--[4]	--[4]
February	2023	--[4]	--[4]	--[4]	--[4]
March	2023	--[4]	--[4]	--[4]	--[4]
April	2023	--[4]	--[4]	--[4]	--[4]
May	2023	--[4]	--[4]	--[4]	--[4]
June	2023	--[4]	--[4]	--[4]	--[4]
July	2023	--[4]	--[4]	--[4]	--[4]
August	2023	--[4]	--[4]	--[4]	--[4]
September	2023	--[4]	--[4]	--[4]	--[4]
October	2023	--[4]	--[4]	--[4]	--[4]
November	2023	--[4]	--[4]	--[4]	--[4]
December	2023	--[4]	--[4]	--[4]	--[4]
January	2024	--[4]	--[4]	--[4]	--[4]
February	2024	--[4]	--[4]	--[4]	--[4]
March	2024	--[4]	--[4]	--[4]	--[4]
April	2024	--[4]	--[4]	--[4]	--[4]
May	2024	--[4]	--[4]	--[4]	--[4]
June	2024	--[4]	--[4]	--[4]	--[4]
July	2024	--[4]	--[4]	--[4]	--[4]
August	2024	--[4]	--[4]	--[4]	--[4]
September	2024	--[4]	--[4]	--[4]	--[4]
October	2024	--[4]	--[4]	--[4]	--[4]
November	2024	--[4]	--[4]	--[4]	--[4]

Notes:
1. The work hours Leq is the energy average between 8 a.m. to 6 p.m. on weekdays and 9 a.m. to 5 p.m. on Saturdays.
2. Data lost due to user error.
3. Power failure; data not recorded.
4. Data not recorded past December 3 due to missing solar panel.

APPENDIX B: BACKGROUND OF NOISE

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is generally defined as unwanted or excessive sound. Sound can vary in intensity by over one million times within the range of human hearing. Therefore, a logarithmic scale, known as the decibel scale (dB), is used to quantify sound intensity and compress the scale to a more manageable range.

Sound is characterized by both its amplitude and frequency (or pitch). The human ear does not hear all frequencies equally. In particular, the ear deemphasizes low and very high frequencies. To better approximate the sensitivity of human hearing, the A-weighted decibel scale has been developed. A-weighted decibels are abbreviated as "dBA." On this scale, the human range of hearing extends from approximately 3 dBA to around 140 dBA. As a point of reference, Figure 9 includes examples of A-weighted sound levels from common indoor and outdoor sounds.

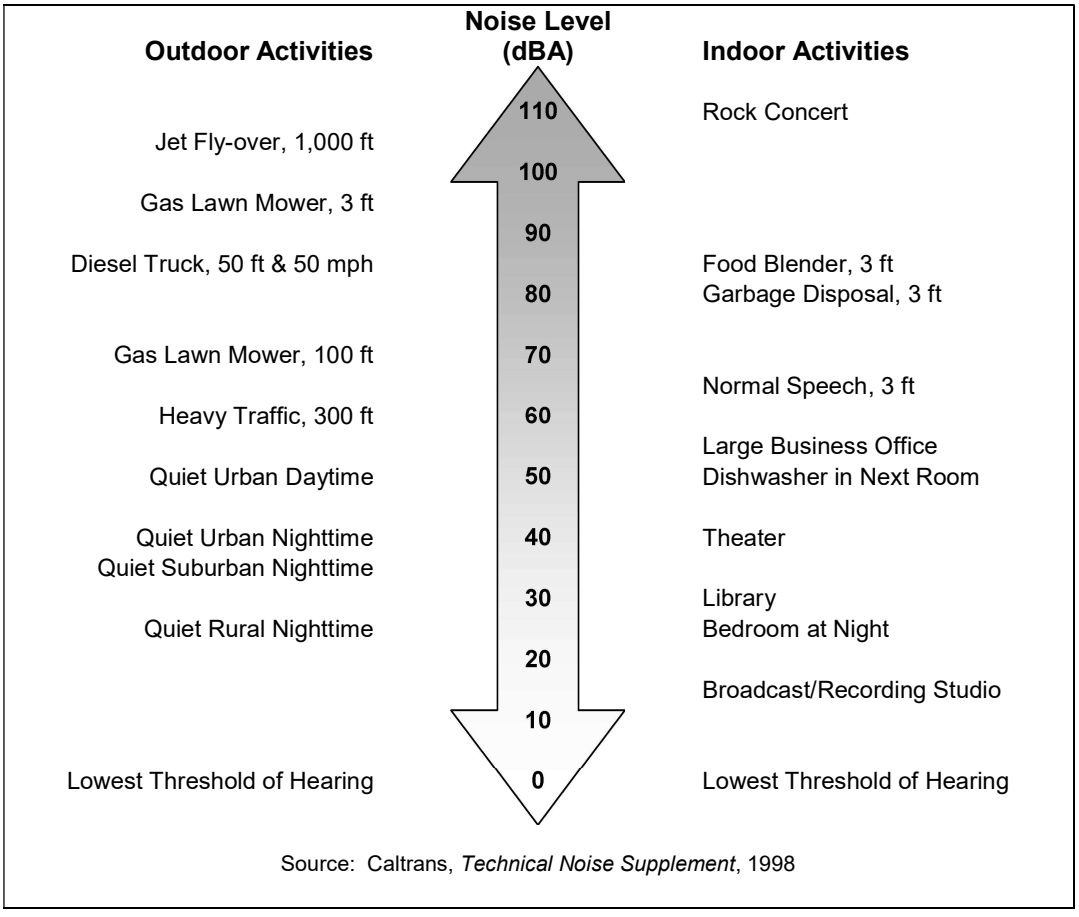


Figure 9. Typical Outdoor and Indoor Noise Sources

Using the decibel scale, sound levels from two or more sources cannot be directly added together to determine the overall sound level. Rather, the combination of two sounds at the same level yields an increase of 3 dBA. The smallest recognizable change in sound level is approximately 1 dBA. A 3-dBA increase is generally considered perceptible, whereas a 5-dBA increase is readily perceptible. A 10-dBA increase is judged by most people as an approximate doubling of the perceived loudness.

Two of the primary factors that reduce levels of environmental sounds are increasing the distance between the sound source and the receiver and having intervening obstacles, such as walls, buildings or

terrain features, that block the direct path between the sound source and the receiver. Factors that act to increase the loudness of environmental sounds include the proximity of the sound source to the receiver, sound enhancements caused by reflections, and focusing caused by various meteorological conditions.

Brief definitions of the measures of environmental noise used in this report are:

- **Equivalent Sound Level (Leq)**: Environmental sound fluctuates constantly. The equivalent sound level (Leq), sometimes referred to as the energy-average sound level, is the most common means of characterizing community noise. Leq represents a constant sound that, over the specified period, has the same sound energy as the time-varying sound. The noise monitors currently measure sound in 15 second intervals and these are used to calculate the 1-hour Leqs.
- **Day-Night Sound Level (Ldn):** Ldn is basically a 24-hour Leq with an adjustment to reflect the greater sensitivity of most people to nighttime noise. The adjustment is a 10-dB penalty for all sound that occurs between 10 p.m. and 7 a.m. The effect of the penalty is that, when calculating Ldn, any event that occurs during the nighttime is equivalent to 10 of the same event during the daytime. Ldn is the most common measure of total community noise over a 24-hour period.
- **Work Hours Sound Level:** The work hours sound level is effectively a sound level based on the hours the haul road is expected to be used. For weekdays Monday through Friday, it consists of the Leq for the period between 8 a.m. and 6 p.m. For Saturdays, it consists of the Leq for the period between 9 a.m. and 5 p.m. The road is not expected to be used on Sunday.
- **Maximum Sound Level (Lmax):** The maximum sound level over a period of time or for a specific event can also be a useful parameter for characterizing specific noise sources. Standard sound level meters have two settings, FAST and SLOW, which represent different time constants. Lmax using the FAST setting will typically be 1 to 3 dB greater than Lmax using the SLOW setting.
- **Sound Exposure Level (SEL):** SEL is a measure of the total sound energy of an event. In essence, all sound from the event is compressed into a one-second period. This means that SEL increases as the event duration increases and as the event sound level increases. SEL is useful for estimating the Ldn that would be caused by individual events such as train passbys. Although the SEL values for the fifteen-second intervals are recorded (and reported along with the Leq values on the website), we are not using SEL's in any of our calculations.