APPENDIX E

NOISE TECHNICAL MEMORANDUM

ST. IGNATIUS FIELD LIGHTING PROJECT

PLANNING DEPARTMENT CASE NO. 2018-012648ENV-02

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NOISE TECHNICAL MEMORANDUM

Date:	December 10, 2025
To:	Don Lewis and Chelsea Fordham, San Francisco Planning Department, Environmental Planning Division Ken Stupi, St. Ignatius College Preparatory School
From:	Peter Mye (Panorama) and Yilin Tian (Baseline)
Subject:	**St. Ignatius College Preparatory School Field Lighting Project (Case No. 2018-012648ENV)**

Project Overview

St. Ignatius College Preparatory School (St. Ignatius) is proposing the St. Ignatius Field Lighting Project (project), which would consist of the operation of four 90-foot-tall, light-emitting diode (LED) stadium lights at the school's main athletic stadium (J.B. Murphy Field) and an amplified sound/public address (PA) system, and the expanded use of four existing 40-foot-tall outdoor lights at the school's upper practice field. The stadium lights and the amplified sound/PA system were installed in November 2021. The amplified sound/PA system replaces an existing system.

Use of both the stadium and upper practice field lights would allow school athletic teams to (1) shift the timing of early morning practices to later start times in the morning and to afternoon and evening times and (2) shift the timing of games by up to two hours from afternoons to evenings for up to 150 evenings during the school year, which runs from approximately August 15 to May 31. Stadium light operation would be allowed until 10:00 p.m. during up to 15 events/games per year.

The amplified sound/PA system at J.B. Murphy Field consists of a bi-directional speaker mounted on each of the four permanent light standards at a height of approximately 17 feet above ground level. The speakers are directed toward the bleachers and J.B. Murphy Field. The upper practice field is not equipped with any noise amplifying sound systems. The amplified sound/PA system, which is used for spectator announcements and to amplify music during pre-game warmups, would be used during up to 132 games and track-and-field meets annually until 8:00 p.m. for football (junior varsity and first-year), lacrosse (varsity and junior varsity), soccer (all levels), flag football (varsity and junior varsity), rugby (varsity and junior varsity), and track-and-field (varsity and junior varsity) and during up to 15 events/games annually until 10:00 p.m. for varsity football, lacrosse playoffs/tournaments, and soccer playoffs/tournaments. The amplified sound/PA system would not be used during practices.

This noise technical memorandum was prepared to document the environmental setting (including the existing noise environment and sensitive noise receptors), existing ambient noise conditions in the project vicinity, and the noise levels during events held at J.B. Murphy Field involving use of the amplified sound/PA system. This memorandum also identifies whether the amplified noise levels are consistent with relevant City and County of San Francisco noise regulations and requirements.

Relevant Noise Concepts and Criteria

The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of the noise.[1] The noise descriptors relevant to the project are defined below.

- **Leq (Equivalent Noise Level):** The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value is calculated, which is then converted back to dBA to determine the Leq. In noise environments that are determined by major noise events, such as aircraft overflights, the Leq value is heavily influenced by the magnitude and number of single events that produce the high noise levels.
- **Ldn (Day-Night Noise Level):** The 24-hour Leq with a 10-dBA "penalty" for noise events that occur during the noise-sensitive hours between 10:00 p.m. and 7:00 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours, and this generates a higher reported noise level when determining compliance with noise standards. The Ldn attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to the most common sleeping hours.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level Leq, which corresponds to a steady state. The Leq is the foundation of the composite noise descriptors L, as defined above, and correlates well with community response to noise.

This report uses the following criteria to evaluate operational noise impacts from the project's amplified sound/PA system:

- The planning department considers an increase of 10 dBA Leq over existing daytime ambient noise levels at the nearest sensitive receptor, using the Federal

[1] Caltrans. 2013. "Technical Noise Supplement to the Traffic Noise Analysis Protocol." Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf. Accessed: October 2025.

Transit Administration methodology, to be a substantial temporary increase in noise levels. An increase or decrease of 10 dB in sound pressure is perceived by an observer to be a doubling or halving of the sound.[2] If any of these quantitative standards are met or exceeded, the analysis evaluates the frequency, duration, and intensity of that noise above the quantitative standards.

- San Francisco Noise Ordinance, Section 2909 (d), Fixed Residential Interior Noise Limits: In order to prevent sleep disturbance, protect public health and prevent the acoustical environment from progressive deterioration due to the increasing use and influence of mechanical equipment, no fixed noise source may cause the noise level measured inside any sleeping or living room in any dwelling unit located on residential property to exceed 45 dBA between the hours of 10:00 p.m. to 7:00 a.m. or 55 dBA between the hours of 7:00 a.m. to 10:00 p.m. with windows open except where building ventilation is achieved through mechanical systems that allow windows to remain closed.[3]

Environmental Setting

The project site consists of an athletic stadium (J.B. Murphy Field) and an upper practice field at a private high school campus at 2001 37th Avenue in the Outer Sunset neighborhood of western San Francisco. The athletic stadium and upper practice field are bounded by 37th Avenue to the east, 39th Avenue to the west, Rivera Street to the south[4], and the West Sunset Soccer Fields to the north. Adjacent land uses include residences to the south and west, a public recreational park and a community garden associated with the A.P. Giannini Middle School to the north, and Sunset Boulevard, a major six-lane thoroughfare, to the east.

Noise Sensitive Receptors

The San Francisco Planning Department defines noise-sensitive receptors as residents, hospitals, convalescent homes, schools, places of worship, hotels, and sensitive wildlife habitat. Based on review of existing Google aerial and street-view imagery and the San Francisco Zoning Map,[5] existing noise sensitive receptors in the project vicinity include residences approximately 75 feet to the west of the stadium across 39th Avenue and approximately 75 feet to the south of the

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[2] Federal Highway Administration, Highway Traffic Noise: Analysis and Abatement Guidance, December 2011. Available at: https://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/analysis_and_abatement_guidance/revguidance.pdf. Accessed: October 2025.

[3] Panorama and Baseline assume only the daytime (7:00 a.m.-10:00 p.m.) noise threshold of 55 dBA will be considered because all school athletic games occur during these hours.

[4] Between the upper practice field and Rivera Street is a podium structure with below grade parking and grade level tennis courts.

[5] San Francisco Planning, 2023. San Francisco Zoning Map, April. Available at: https://sfplanning.org/resource/zoning-use-districts. Accessed: October 2025.

stadium across Rivera Street. There are no sensitive receptors adjacent to the north and east project site boundaries. The nearest residential land uses to the east are located approximately 610 feet away from the eastern boundary of the stadium, across Sunset Boulevard.

Noise Measurement Methodology

The existing ambient noise environment and noise levels during stadium events involving use of the amplified sound/PA system in the vicinity of the project site was characterized by a noise monitoring survey conducted by Baseline Environmental Consulting (Baseline) from April 8 to April 10, 2024, and on September 9, 2024, in accordance with the *Noise Monitoring and Impact Assessment Methodology* prepared for the project (**Appendix B**). Two long-term (24-hour) noise measurements and six short-term (15-minute) noise measurements were collected in the project vicinity. The noise measurement locations are illustrated in **Figure 1**.

Ambient Noise Environment

Baseline conducted noise monitoring surveys to capture ambient noise levels on April 8 and April 9, 2024, without practices, games, and track-and-field meets. The existing ambient noise environment at sensitive receptors to the west and south of the project site along 39th Avenue (LT-1) and Rivera Street (LT-2). The existing ambient noise environment further away from the project site that could be affected by amplified noise levels during events are represented by ST-1 through ST-6.

Ambient noise level measurements were conducted using Type 1 sound level meters with slow response and "A" weighting[6] that were field calibrated immediately prior to use. The noise measurements were collected on days when sporting events at the athletic stadium were not scheduled. Three sound level meters were deployed, including two meters for long-term noise measurements and one meter for short-term noise measurements. For security, the long-term measurements (LT-1 and LT-2) were collected along the perimeter of the project site on stand poles adjacent to the fences and approximately 9.5 feet above ground level. The short-term measurements were collected at ST-1 through ST-6 on a tripod approximately 5.5 feet above ground level along the sidewalks adjacent to nearby sensitive receptors during the same time as the long-term measurements. The microphone attached to the sound level meters were protected from the effects of wind noise.

[6] The A-weighting scale approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments regarding the relative loudness or annoyance of a sound, their judgments correlate well with the A-weighted sound levels of those sounds.

Figure 1 Noise Measurement Locations



Noise During Stadium Events

Baseline conducted noise monitoring surveys in the vicinity of the project site to characterize the noise levels generated by the existing amplified sound/PA system during events held at the school's athletic stadium: a varsity lacrosse game held April 9, 2024; a varsity track-and-field meet held April 10, 2024; and a varsity football game held September 6, 2024. Short-term measurements were collected during these events at the nearby residential receptors, ST-7 through ST-11. Two sound level meters were deployed, including one meter for ST-7, and another meter for ST-8 through ST-11.

For each sporting event, noise levels were monitored during the entire sporting event at location ST-7, which represents the nearest residence or noise-sensitive receptor. ST-7 is located approximately 75 feet west of the nearest amplified sound/PA system speaker and 25 feet east of the nearest residential structure and has a line-of-sight to the nearest amplified sound/PA system speakers. Noise levels at locations ST-8 through ST-11 were monitored for a minimum of 15 minutes to capture noise generated by the amplified sound/PA system. Monitoring times varied, according to the duration of the sporting event and the frequency of amplified sound/PA system usage. The microphones were positioned at approximately 5.0 to 5.5 feet above ground level and protected from the effects of wind noise and other extraneous sounds by the use of appropriate windscreens. The noise meters were field-calibrated immediately prior to use. These short-term measurements focused specifically on the noise levels generated by the amplified sound/PA system when it was in use. The lacrosse and football games also included the playing of music with the amplified sound/PA system for approximately 30 minutes prior to the game. The noise levels during the pre-game music period were monitored at locations ST-7 and ST-11.

Noise Monitoring Results

Ambient Noise Environment

The primary source of existing ambient noise in the vicinity of the project site is vehicular traffic on major roadways. The ambient noise measurement locations, monitoring periods, and corresponding results are summarized in **Table 1**. Supporting noise monitoring reports are provided in **Appendix A**.

Noise During Amplified Stadium Events

The noise monitoring results during stadium events using the amplified sound/PA system are summarized in **Table 2**. Supporting noise monitoring reports are provided in **Appendix A**.

Table 1 Summary of Existing Ambient Noise Level Measurements

ID	Location	Monitoring Period	Noise Level, dBA		
			L_{90}	L_{eq}	L_{dn}
LT-1	At the western boundary of the athletic stadium approximately 100 feet south of the intersection of Quintara Street and 39th Avenue / At school property plane	10:36 a.m. 4/8/2024 to 10:36 a.m. 4/9/2024	45.9 (Daytime) 43.0 (Nighttime)	57.5 (Daytime) 49.9 (Nighttime)	58.6
LT-2	At the southern boundary of the athletic stadium approximately 15 feet west of the intersection of Rivera Street and 38th Avenue / At school property plane	10:50 a.m. 4/8/2024 to 10:50 a.m. 4/9/2024	47.0 (Daytime) 42.7 (Nighttime)	57.0 (Daytime) 51.0 (Nighttime)	58.8
ST-1	Approximately 110 feet west of the intersection of Quintara Street and 39th Avenue / Approximately 205 feet from school property plane	11:25 a.m. 4/8/2024 to 11:40 a.m. 4/8/2024	45.9[1]	57.5[1]	Not Available
ST-2	Approximately 130 feet west of the intersection of Rivera Street and 39th Avenue / Approximately 200 feet from school property plane	11:56 a.m. 4/8/2024 to 12:11 p.m. 4/8/2024	44.0	57.4	Not Available
ST-3	Approximately 265 feet south of the intersection of Rivera Street and 39th Avenue / Approximately 355 feet from school property plane	12:22 p.m. 4/8/2024 to 12:37 p.m. 4/8/2024	41.4	54.0	Not Available
ST-4	Approximately 270 feet south of the intersection of Rivera Street and 38th Avenue / Approximately 365 feet from school property plane	12:45 p.m. 4/8/2024 to 1:00 p.m. 4/8/2024	39.7	49.1	Not Available
ST-5	Approximately 320 feet south of the intersection of Rivera Street and 37th Avenue / Approximately 385 feet from school property plane	1:08 p.m. 4/8/2024 to 1:23 p.m. 4/8/2024	49.9	56.2	Not Available
ST-6	Approximately 220 feet north of the intersection of Rivera Street and 36th Avenue / Approximately 375 feet from school property plane	1:30 p.m. 4/8/2024 to 1:45 p.m. 4/8/2024	47.1	56.2	Not Available

Notes: **Daytime:** between 7:00 a.m. and 10:00 p.m.; **Nighttime:** between 10:00 p.m. and 7:00 a.m.
L_{90} is the A-weighted noise level that is exceeded 90% of the time during the measurement period.
L_{dn} is the day-night average sound level, which is the energy average of the A-weighted sound levels occurring during a 24-hour period, with a 10 dB penalty added to sound levels between 10 p.m. and 7 a.m.
L_{eq} is the equivalent steady-state sound level containing the same total acoustical energy as a time-varying signal over a given sample period.

[1] Due to a noise meter malfunction at ST-1, daytime noise levels measured at LT-1 are used for ST-1.

*Source: see **Appendix A**.*

Table 2 Summary of Noise Levels during Amplified Stadium Events

ID	Location	Monitoring Period	Source of Noise	Noise Levels	
				L_{eq}	L_{90}
Lacrosse Game, April 9th (pre-game music between 3:00 p.m. to 3:30 p.m.; game started at 3:30 p.m. and ended at approximately 4:53 p.m.)					
ST-7	Approximately 180 feet south of the intersection of Quintara Street and 39th Avenue / Approximately 65 feet from school property plane / Approximately 75 feet from the nearest amplified sound/PA system speaker	2:53 p.m. 4/9/2024 to 4:55 p.m. 4/9/2024	Pre-game music, amplified sound/PA system (announcing and music), crowd cheering, whistle, team yelling, traffic noise (bus, automobile, motorcycle), dog barking	58.8	48.7
ST-8	Approximately 110 feet west of the intersection of Quintara Street and 39th Avenue / Approximately 180 feet from school property plane / No line-of-sight to amplified sound/PA system speaker	4:10 p.m. 4/9/2024 to 4:25 p.m. 4/9/2024	Amplified sound/PA system (announcing and music), whistle, crowd cheering, traffic noise (bus, automobile), jet flying over	59.4	47.5
ST-9	Approximately 140 feet west of the intersection of Rivera Street and 38th Avenue / Approximately 70 feet from school property plane / Approximately 275 feet from the nearest amplified sound/PA system speaker	3:49 p.m. 4/9/2024 to |4:05 p.m. 4/9/2024	Amplified sound/PA system (announcing and music), airhorn, whistle, crowd cheering, team yelling, and traffic noise (automobile)	61.2	51.0
ST-10	Approximately 220 feet north of the intersection of Rivera Street and 36th Avenue / Approximately 375 feet from school property plane / Approximately 610 feet from the nearest amplified sound/PA system speaker	4:31 p.m. 4/9/2024 to 4:46 p.m. 4/9/2024	Amplified sound/PA system (announcing), crowd cheering, whistle, team yelling, traffic noise (bus, automobile)	59.7	49.5
ST-11	Approximately 20 feet west of the intersection of Rivera Street and 39th Avenue / Approximately 100 feet from school property plane / Approximately 260 feet from the nearest amplified sound/PA system speaker	3:20 p.m. 4/9/2024 to 3:45 p.m. 4/9/2024	Pre-game music, amplified sound/PA system (announcing), crowd cheering, whistle, team yelling, traffic noise (bus, automobile, motorcycle), nearby dog barking	62.1	49.5
Track and Field Meet, April 10th (game started prior to the scheduled 5:00 p.m. start time and ended at 7:00 p.m. Started monitoring at 4:33 p.m.)					
ST-7	Approximately 180 feet south of the intersection of Quintara Street and 39th Avenue / Approximately 65 feet from school property plane / Approximately 75 feet from the nearest amplified sound/PA system speaker	4:33 p.m. 4/10/2024 to 7:00 p.m. 4/10/2024	Amplified sound/PA system (announcing), megaphone, starting shot, crowd cheering, whistle, traffic noise (bus, automobile), dog barking	60.1	49.2

ID	Location	Monitoring Period	Source of Noise	Noise Levels	
				L_{eq}	L_{90}
ST-8	Approximately 110 feet west of the intersection of Quintara Street and 39th Avenue / Approximately 180 feet from school property plane / No line-of-sight to amplified sound/PA system speaker	5:23 p.m. 4/10/2024 to 5:38 p.m. 4/10/2024	Amplified sound/PA system (announcing), traffic noise (bus, automobile)	55.9	46.5
ST-9	Approximately 140 feet west of the intersection of Rivera Street and 38th Avenue / Approximately 70 feet from school property plane / Approximately 275 feet from the nearest amplified sound/PA system speaker	5:02 p.m. 4/10/2024 to 5:17 p.m. 4/10/2024	Amplified sound/PA system (announcing), megaphone, starting shot, whistle, crowd cheering, traffic noise (bus, automobile)	59.4	50.5
ST-10	Approximately 220 feet north of the intersection of Rivera Street and 36th Avenue / Approximately 375 feet from school property plane/ Approximately 610 feet from the nearest amplified sound/PA system speaker	5:46 p.m. 4/10/2024 to 6:01 p.m. 4/10/2024	Amplified sound/PA system (announcing), megaphone, starting shot, whistle, crowd cheering, traffic noise (bus, automobile)	62.2	49.0
ST-11[1]	Approximately 20 feet west of the intersection of Rivera Street and 39th Avenue / Approximately 100 feet from school property plane / Approximately 260 feet from the nearest amplified sound/PA system speaker	4:43 p.m. 4/10/2024 to 5:00 p.m. 4/10/2024	Amplified sound/PA system (announcing), megaphone, starting shot, whistle, crowd cheering, traffic noise (bus, automobile)	62.7	49.5
		6:06 p.m. 4/10/2024 to 6:36 p.m. 4/10/2024	Amplified sound/PA system (announcing), starting shot, whistle, crowd cheering, traffic noise (bus, automobile)	60.3	48.0
Football Game, September 6th (pre-game music between 5:35 p.m. to 7:00 p.m.; game started at 7:00 p.m. and ended at around 9:15 p.m. Started monitoring at 5:33 p.m.)					
ST-7	Approximately 180 feet south of the intersection of Quintara Street and 39th Avenue / Approximately 65 feet from school property plane / Approximately 75 feet from the nearest amplified sound/PA system speaker	5:33 p.m. 9/6/2024 to 9:11 p.m. 9/6/2024	Pre-game music, band, amplified sound/PA system (announcing and music), whistle, team yelling, crowd cheering, horn, traffic noise (bus, automobile)	64.5	56.9
ST-8[2]	Approximately 110 feet west of the intersection of Quintara Street and 39th Avenue / Approximately 180 feet	5:58 p.m. 9/6/2024 to 6:13 p.m. 9/6/2024	Pre-game music (band), crowd cheering, whistle, traffic noise (bus, automobile), jet flying over	57.2	48.9

ID	Location	Monitoring Period	Source of Noise	Noise Levels	
				L_{eq}	L_{90}
	from school property plane / No line-of-sight to amplified sound/PA system speaker	8:28 p.m. 9/6/2024 to 8:43 p.m. 9/6/2024	Amplified sound/PA system (announcing), crowd cheering, horn, traffic noise (bus, automobile)	60.6	47.6
ST-9[2]	Approximately 140 feet west of the intersection of Rivera Street and 38th Avenue / Approximately 70 feet from school property plane / Approximately 275 feet from the nearest amplified sound/PA system speaker	6:18 p.m. 9/6/2024 to 6:33 p.m. 9/6/2024	Pre-game music (band), amplified sound/PA system (music), traffic noise (bus, automobile)	62.4	55.7
		7:18 p.m. 9/6/2024 to 7:33 p.m. 9/6/2024	Amplified sound/PA system (announcing), crowd cheering, traffic noise (bus, automobile)	65.4	59.1
ST-10[2]	Approximately 220 feet north of the intersection of Rivera Street and 36th Avenue / Approximately 375 feet from school property plane / Approximately 610 feet from the nearest amplified sound/PA system speaker	6:39 p.m. 9/6/2024 to 6:54 p.m. 9/6/2024	Pre-game music (band), amplified sound/PA system (music), crowd cheering, traffic noise (bus, automobile)	59.8	51.4
		6:58 p.m. 9/6/2024 to 7:13 p.m. 9/6/2024	Amplified sound/PA system (announcing), crowd cheering, traffic noise (bus, automobile)	59.7	50.8
ST-11[3]	Approximately 20 feet west of the intersection of Rivera Street and 39th Avenue / Approximately 100 feet from school property plane / Approximately 260 feet from the nearest amplified sound/PA system speaker		ST-11 was not accessible during the game period and hence not monitored.		

Notes: Measurement locations are shown on Figure 1.

L_{90} is the A-weighted noise level that is exceeded 90% of the time during the measurement period.

Ldn is the day-night average sound level, which is the energy average of the A-weighted sound levels occurring during a 24-hour period, with a 10 dB penalty added to sound levels between 10:00 p.m. and 7:00 a.m.

Leq is the equivalent steady-state sound level containing the same total acoustical energy as a time-varying signal over a given sample period.

[1] Additional 30-minute short-term measurement was taken at ST-11 on April 10th.

[2] Additional 15-minute short-term measurements were taken at ST-8 though ST-10 on September 6th.

[3] ST-11 was not monitored during the game period because the line-of-sight was obstructed by buses.

Source: see Appendix A.

Operational Noise Criteria Analysis

Event Noise CEQA Impacts

The planning department considers an increase of 10 dBA Leq over existing daytime ambient noise levels at the nearest sensitive receptor, using the Federal Transit Administration methodology, to be a substantial temporary increase in noise levels. An increase or decrease of 10 dB in sound pressure is perceived by an observer to be a doubling or halving of the sound.[7] If any of these quantitative standards are met or exceeded, the analysis evaluates the frequency, duration, and intensity of that noise above the quantitative standards.

The nearest sensitive receptors are the residences fronting school property along 39th Avenue and Rivera Street. Noise measurements taken at ST-7/LT-1 and ST-9/LT-2 best represent noise levels experienced at these receptors. As presented in Table 1, the existing daytime ambient noise levels at the nearest noise-sensitive receptors range from 57.0 dBA Leq (LT-2) to 57.5 dBA Leq (LT-1). As presented in Table 2, noise levels at ST-7 during stadium events using the amplified sound/PA system were:

- Lacrosse game: 58.8 dBA Leq
- Track-and-field meet: 60.1 dBA Leq
- Football game: 64.5 dBA Leq

Noise levels at ST-9 during stadium events using the amplified sound/PA system were:

- Lacrosse game: 61.2 dBA Leq
- Track-and-field meet: 59.4 dBA Leq
- Football game: 65.4 dBA Leq

The highest noise level recorded was 65.4 dBA Leq at ST-9 during the football game. Noise levels measured at ST-9 would be approximately 8.4 dBA higher than baseline conditions at LT-2 (57.0 dBA) and the maximum noise levels at noise-sensitive receptors would not exceed the 10-dBA Leq over ambient noise level criteria during any game.

San Francisco Noise Ordinance Requirements (Article 29 of the Police Code)

Section 2909(d) requires that no fixed noise source may cause noise levels measured inside any sleeping or living room in any dwelling unit located on residential property to exceed 45 dBA between the hours of 10:00 p.m. to 7:00 a.m. or 55 dBA between the hours of 7:00 a.m. to

[7] Federal Highway Administration, Highway Traffic Noise: Analysis and Abatement Guidance, December 2011. Available at: https://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/analysis_and_abatement_guidance/revguidance.pdf. Accessed October 2025.

10:00 p.m. with windows open except where building ventilation is achieved through mechanical systems that allow windows to remain closed. Because no stadium events would occur between the hours of 10:00 p.m. to 7:00 a.m., the nighttime noise criteria would not apply to the project. Therefore, this analysis is limited to the 55-dBA criterion that applies to the hours between 7:00 a.m. and 10:00 p.m.

The highest noise level recorded during an amplified stadium event under the project was 65.4 dBA Leq at ST-9, which is representative of the exterior noise levels residents would experience along Rivera Street between 39th and 38th avenues. All buildings provide some exterior-to-interior noise reduction. The building's noise attenuation effectiveness depends on exterior wall insulation, a window's sound transmission class rating, and whether windows are closed or open. Standard construction practices generally provide a noise reduction of 15 dBA for building façades when windows are open and a noise reduction of approximately 25 dBA when windows are closed.[8],[9] Interior noise experienced at the nearest residences with windows open would attenuate to 49.5 dBA Leq at ST-7 and 50.4 dBA at ST-9. With windows closed, the indoor noise levels at the nearest residences would attenuate to 39.5 dBA Leq at ST-7 and 40.4 dBA at ST-9. The noise levels would thus not exceed the interior noise standards of 55 dBA between 7:00 a.m. and 10:00 p.m. as defined in San Francisco Noise Ordinance 2909(d).

[8] Governor's Office of Planning and Research, 2017. "State of California 2017 General Plan Guidelines, Appendix D: Noise Element Guidelines, pg. 378. Available at: http://opr.ca.gov/docs/OPR_Appendix_D_final.pdf. Accessed: October 2025.
[9] US EPA. 1974. "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." Available at: https://www.nonoise.org/library/levels74/levels74.htm. Accessed: October 2025.

APPENDIX A

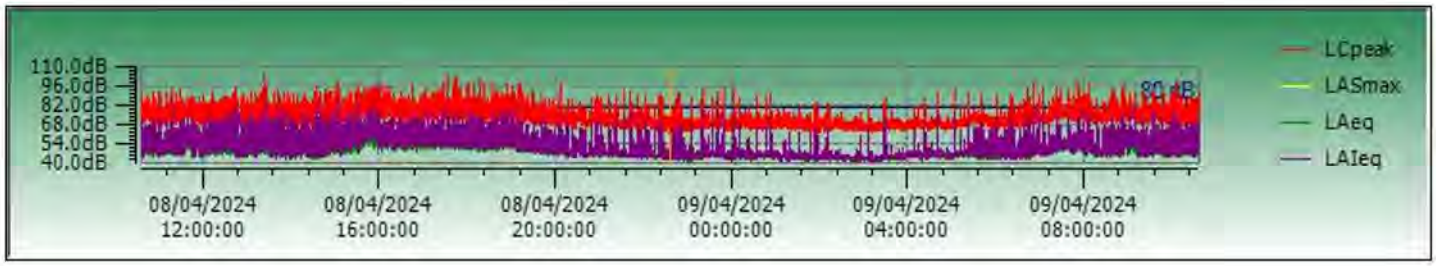
APPENDIX B

Ambient LT-1

Casella CEL Ltd.

Report On CEL-63X

Instrument Model	**CEL-633C**		
Serial Number	0499599	LASmax	85.9 dB
Start Date & Time	4/8/2024 10:36:58 AM	Response	Random
Duration	24:00:00 HH:MM:SS	End Date & Time	4/9/2024 10:36:58 AM
LAeq	55.9 dB	Pause Duration	00:00:00 HH:MM:SS
LASmax with Time	85.9 dB (4/8/2024 1:24:02 PM)	Calibration (Before) Date	4/4/2024 8:10:49 AM
LAF 90%	44 dB	Calibration (Before) SPL	114 dB
LAF 50%	48.5 dB	Calibration (After) Date	4/9/2024 2:14:47 PM
LAF 10%	58.5 dB	Calibration Drift	-0.9 dB
LDN	58.6	Overload	No
CNEL	58.9	Battery Low	No
LDEN	58.7	Result	Cumulative
Notes			

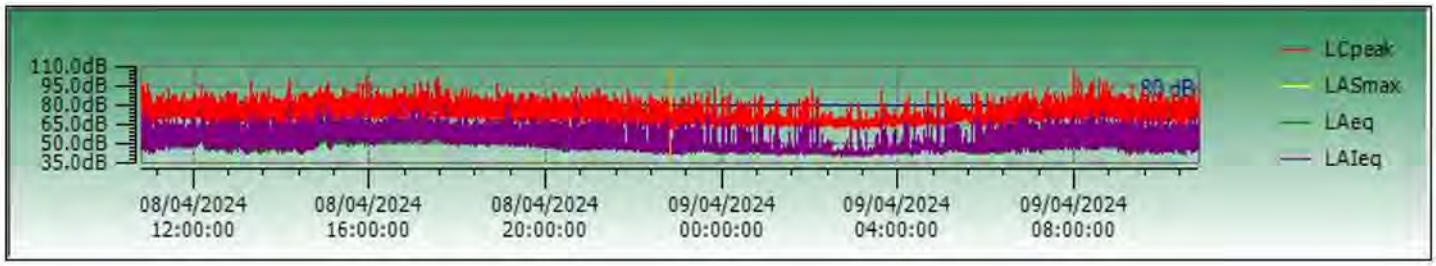


Ambient LT-2

Casella CEL Ltd.

Report On CEL-63X

Instrument Model	**CEL-633C**		
Serial Number	2511397	LASmax	81.9 dB
Start Date & Time	4/8/2024 10:49:58 AM	Response	Random
Duration	24:00:00 HH:MM:SS	End Date & Time	4/9/2024 10:49:58 AM
LAeq	55.3 dB	Pause Duration	00:00:00 HH:MM:SS
LASmax with Time	81.9 dB (4/8/2024 5:20:01 PM)	Calibration (Before) Date	4/8/2024 7:57:34 AM
LAF 90%	43.5 dB	Calibration (Before) SPL	114 dB
LAF 50%	50 dB	Calibration (After) Date	
LAF 10%	59 dB	Calibration Drift	0.0 dB
LDN	58.8	Overload	No
CNEL	59.2	Battery Low	No
LDEN	59	Result	Cumulative
Notes			



Ambient ST-2

Measurement Report

Report Summary

Meter's File Name	LxT_Data.003.s	Computer's File Name	LxT_0006386-20240408 115559-LxT_ST-2.ldbin
Meter	LxT1 0006386		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2024-04-08 11:55:59	Duration	0:15:01.9
End Time	2024-04-08 12:11:01	Run Time	0:15:01.9
		Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	57.4 dB		
LAE	86.9 dB	SEA	--- dB
EA	55.0 µPa²h		
EA8	1.8 mPa²h		
EA40	8.8 mPa²h		
LAS_{peak}	85.2 dB	2024-04-08 12:00:35	
LAS_{max}	70.5 dB	2024-04-08 12:10:21	
LAS_{min}	41.7 dB	2024-04-08 12:01:40	
LA_{eq}	57.4 dB		
LC_{eq}	66.2 dB	LC_{eq} - LA_{eq}	8.8 dB
LAI_{eq}	59.0 dB	LAI_{eq} - LA_{eq}	1.6 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpeak > 135.0 dB	0	0:00:00.0
LASpeak > 137.0 dB	0	0:00:00.0
LASpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
57.4 dB	57.4 dB	0.0 dB

LDEN	LDay	LEve	LNight
57.4 dB	57.4 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	57.4 dB		--- dB		--- dB	
$LS_{(max)}$	70.5 dB	2024-04-08 12:10:21	--- dB		--- dB	
$LS_{(min)}$	41.7 dB	2024-04-08 12:01:40	--- dB		--- dB	
$L_{Peak(max)}$	85.2 dB	2024-04-08 12:00:35	--- dB		--- dB	

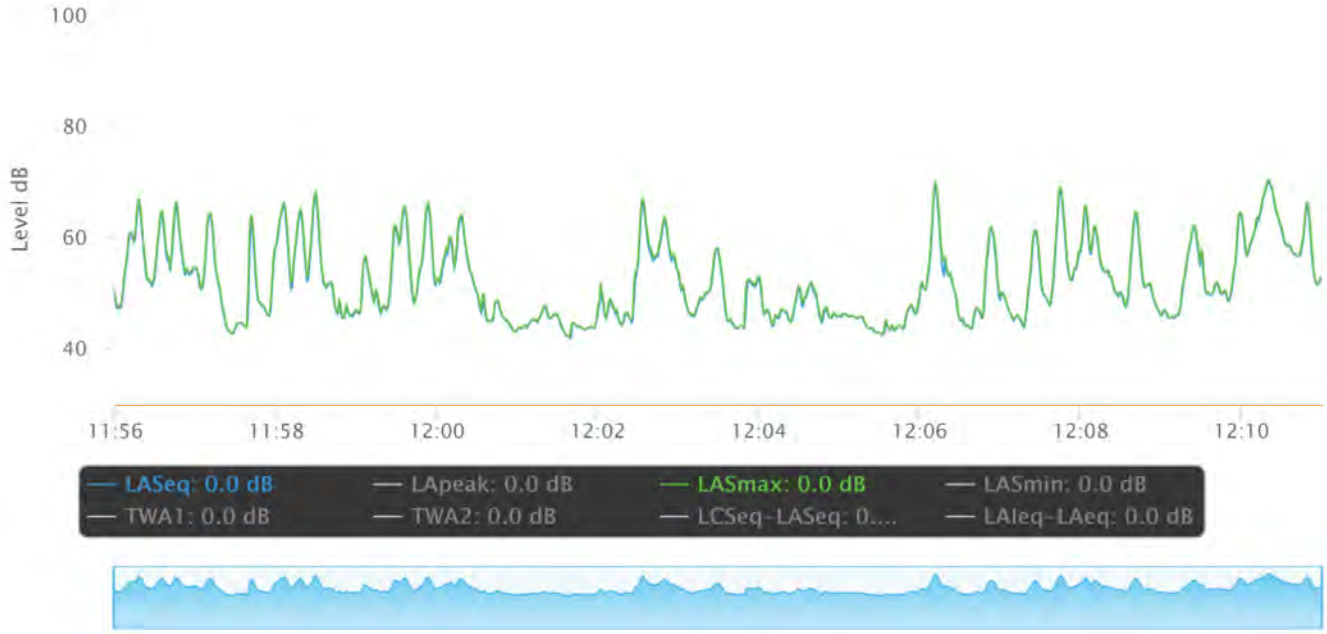
Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	64.3 dB
LAS 10.0	61.9 dB
LAS 33.3	54.1 dB
LAS 50.0	50.3 dB
LAS 66.6	46.9 dB
LAS 90.0	44.0 dB

Time History



Ambient ST-3

Measurement Report

Report Summary

Meter's File Name	LxT_Data.004.s	Computer's File Name	LxT_0006386-20240408 122158-LxT_ST-3.ldbin
Meter	LxT1 0006386		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2024-04-08 12:21:58	Duration	0:15:01.9
End Time	2024-04-08 12:37:00	Run Time	0:15:01.9
		Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	54.0 dB		
LAE	83.6 dB	SEA	--- dB
EA	25.3 µPa²h		
EA8	808.1 µPa²h		
EA40	4.0 mPa²h		
LAS_{peak}	85.8 dB	2024-04-08 12:26:19	
LAS_{max}	69.7 dB	2024-04-08 12:27:33	
LAS_{min}	38.9 dB	2024-04-08 12:33:04	
LA_{eq}	54.0 dB		
LC_{eq}	64.5 dB	$LC_{eq} - LA_{eq}$	10.5 dB
LAI_{eq}	56.0 dB	$LAI_{eq} - LA_{eq}$	1.9 dB

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpeak > 135.0 dB	0	0:00:00.0
LASpeak > 137.0 dB	0	0:00:00.0
LASpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	54.0 dB	54.0 dB	0.0 dB

	LDEN	LDay	LEve	LNight
	54.0 dB	54.0 dB	--- dB	--- dB

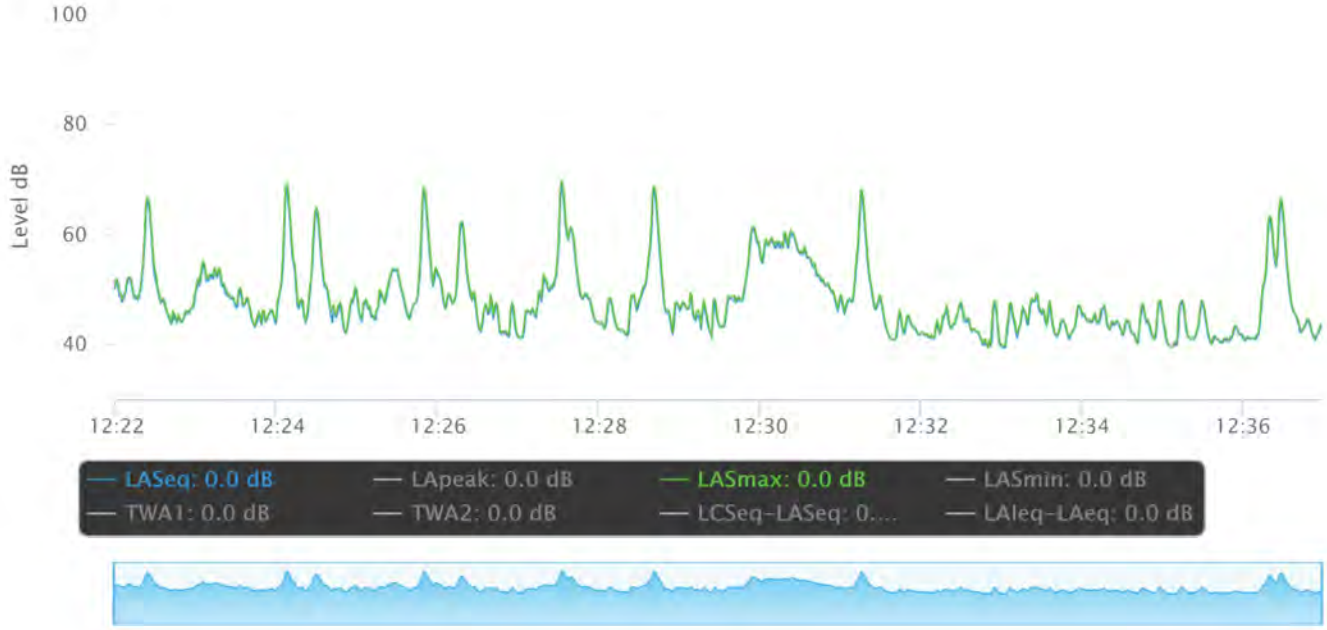
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	54.0 dB		--- dB		--- dB	
$LS_{(max)}$	69.7 dB	2024-04-08 12:27:33	--- dB		--- dB	
$LS_{(min)}$	38.9 dB	2024-04-08 12:33:04	--- dB		--- dB	
$L_{Peak(max)}$	85.8 dB	2024-04-08 12:26:19	--- dB		--- dB	

Overloads	Count	Duration
	0	0:00:00.0

Statistics

LAS 5.0	60.4 dB
LAS 10.0	57.3 dB
LAS 33.3	48.3 dB
LAS 50.0	46.3 dB
LAS 66.6	44.2 dB
LAS 90.0	41.4 dB

Time History



Ambient ST-4

Measurement Report

Report Summary

Meter's File Name	LxT_Data.005.s	Computer's File Name	LxT_0006386-20240408 124459-LxT_ST-4.ldbin
Meter	LxT1 0006386		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2024-04-08 12:44:59	Duration	0:15:01.3
End Time	2024-04-08 13:00:00	Run Time	0:15:01.3
		Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	49.1 dB		
LAE	78.7 dB	SEA	--- dB
EA	8.2 µPa²h		
EA8	262.2 µPa²h		
EA40	1.3 mPa²h		
LAS_{peak}	85.2 dB	2024-04-08 12:46:05	
LAS_{max}	70.5 dB	2024-04-08 12:46:54	
LAS_{min}	37.4 dB	2024-04-08 12:51:55	
LA_{eq}	49.1 dB		
LC_{eq}	59.8 dB	$LC_{eq} - LA_{eq}$	10.7 dB
LAI_{eq}	51.8 dB	$LAI_{eq} - LA_{eq}$	2.6 dB

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpeak > 135.0 dB	0	0:00:00.0
LASpeak > 137.0 dB	0	0:00:00.0
LASpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	49.1 dB	49.1 dB	0.0 dB

	LDEN	LDay	LEve	LNight
	49.1 dB	49.1 dB	--- dB	--- dB

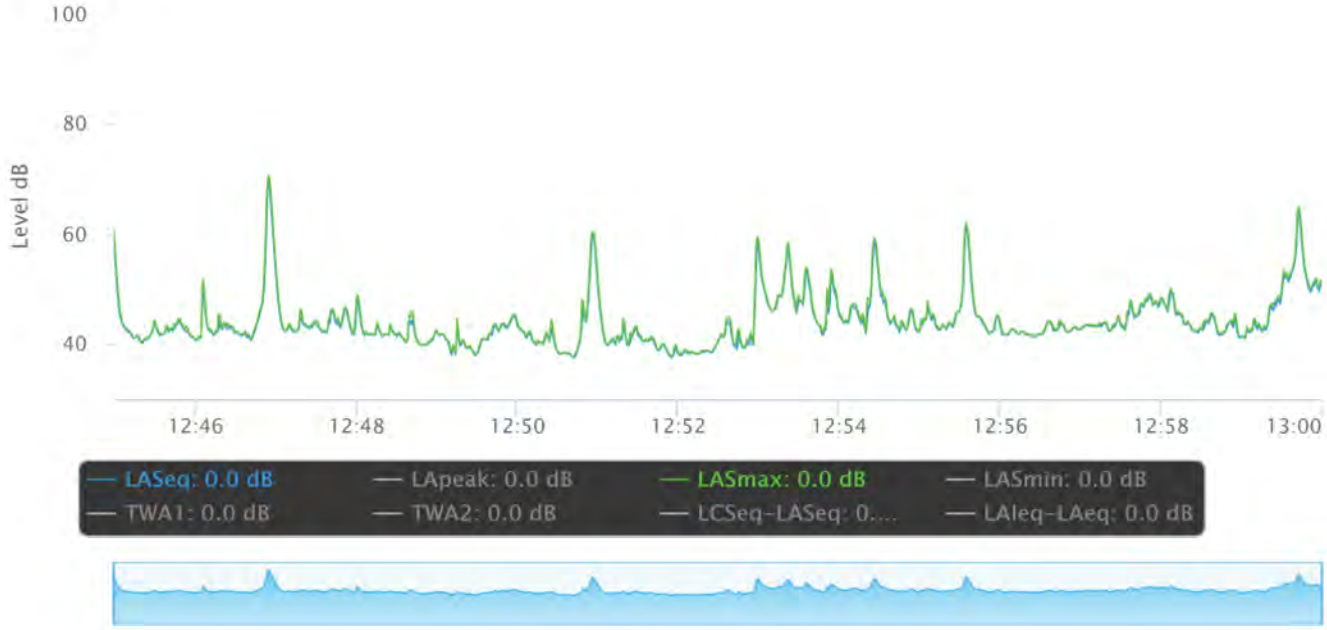
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	49.1 dB		--- dB		--- dB	
$LS_{(max)}$	70.5 dB	2024-04-08 12:46:54	--- dB		--- dB	
$LS_{(min)}$	37.4 dB	2024-04-08 12:51:55	--- dB		--- dB	
$L_{Peak(max)}$	85.2 dB	2024-04-08 12:46:05	--- dB		--- dB	

Overloads	Count	Duration
	0	0:00:00.0

Statistics

LAS 5.0	52.9 dB
LAS 10.0	49.1 dB
LAS 33.3	43.8 dB
LAS 50.0	42.8 dB
LAS 66.6	41.9 dB
LAS 90.0	39.7 dB

Time History



Ambient ST-5

Measurement Report

Report Summary

Meter's File Name	LxT_Data.006.s	Computer's File Name	LxT_0006386-20240408 130758-LxT_ST-5.ldbin
Meter	LxT1 0006386		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2024-04-08 13:07:58	Duration	0:15:01.7
End Time	2024-04-08 13:23:00	Run Time	0:15:01.7
		Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	56.2 dB		
LAE	85.7 dB	SEA	--- dB
EA	41.5 µPa²h		
EA8	1.3 mPa²h		
EA40	6.6 mPa²h		
LAS_{peak}	86.8 dB	2024-04-08 13:17:27	
LAS_{max}	67.8 dB	2024-04-08 13:14:02	
LAS_{min}	41.7 dB	2024-04-08 13:12:07	
LA_{eq}	56.2 dB		
LC_{eq}	68.0 dB	LC_{eq} - LA_{eq}	11.8 dB
LAI_{eq}	57.7 dB	LAI_{eq} - LA_{eq}	1.5 dB

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpeak > 135.0 dB	0	0:00:00.0
LASpeak > 137.0 dB	0	0:00:00.0
LASpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	56.2 dB	56.2 dB	0.0 dB

	LDEN	LDay	LEve	LNight
	56.2 dB	56.2 dB	--- dB	--- dB

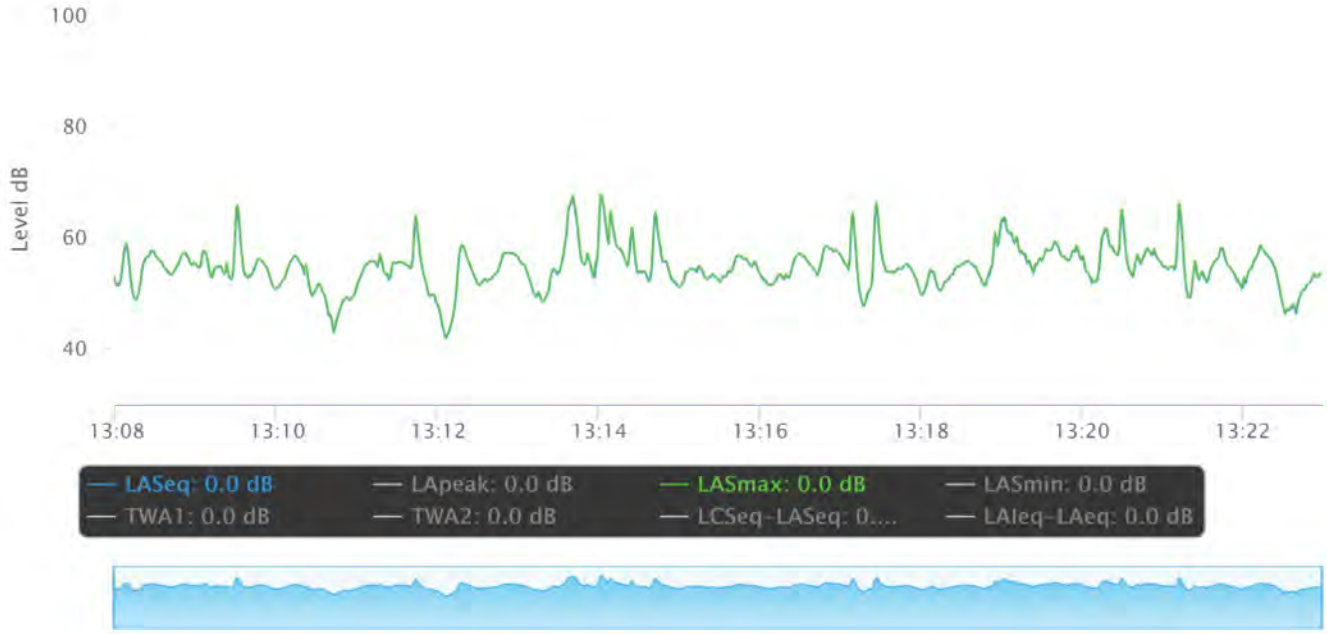
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	56.2 dB		--- dB		--- dB	
$LS_{(max)}$	67.8 dB	2024-04-08 13:14:02	--- dB		--- dB	
$LS_{(min)}$	41.7 dB	2024-04-08 13:12:07	--- dB		--- dB	
$L_{Peak(max)}$	86.8 dB	2024-04-08 13:17:27	--- dB		--- dB	

Overloads	Count	Duration
	0	0:00:00.0

Statistics

LAS 5.0	60.8 dB
LAS 10.0	58.3 dB
LAS 33.3	55.6 dB
LAS 50.0	54.4 dB
LAS 66.6	53.1 dB
LAS 90.0	49.9 dB

Time History



Ambient ST-6

Measurement Report

Report Summary

Meter's File Name	LxT_Data.007.s	Computer's File Name	LxT_0006386-20240408 132959-LxT_ST-6.ldbin
Meter	LxT1 0006386		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2024-04-08 13:29:59	Duration	0:15:01.9
End Time	2024-04-08 13:45:01	Run Time	0:15:01.9
		Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	56.2 dB		
LAE	85.7 dB	SEA	--- dB
EA	41.6 µPa²h		
EA8	1.3 mPa²h		
EA40	6.6 mPa²h		
LAS_{peak}	88.7 dB	2024-04-08 13:37:39	
LAS_{max}	69.2 dB	2024-04-08 13:37:36	
LAS_{min}	44.2 dB	2024-04-08 13:35:20	
LA_{eq}	56.2 dB		
LC_{eq}	66.9 dB	LC_{eq} - LA_{eq}	10.7 dB
LAI_{eq}	57.6 dB	LAI_{eq} - LA_{eq}	1.5 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpeak > 135.0 dB	0	0:00:00.0
LASpeak > 137.0 dB	0	0:00:00.0
LASpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
56.2 dB	56.2 dB	0.0 dB

LDEN	LDay	LEve	LNight
56.2 dB	56.2 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	56.2 dB		--- dB		--- dB	
$LS_{(max)}$	69.2 dB	2024-04-08 13:37:36	--- dB		--- dB	
$LS_{(min)}$	44.2 dB	2024-04-08 13:35:20	--- dB		--- dB	
$L_{Peak(max)}$	88.7 dB	2024-04-08 13:37:39	--- dB		--- dB	

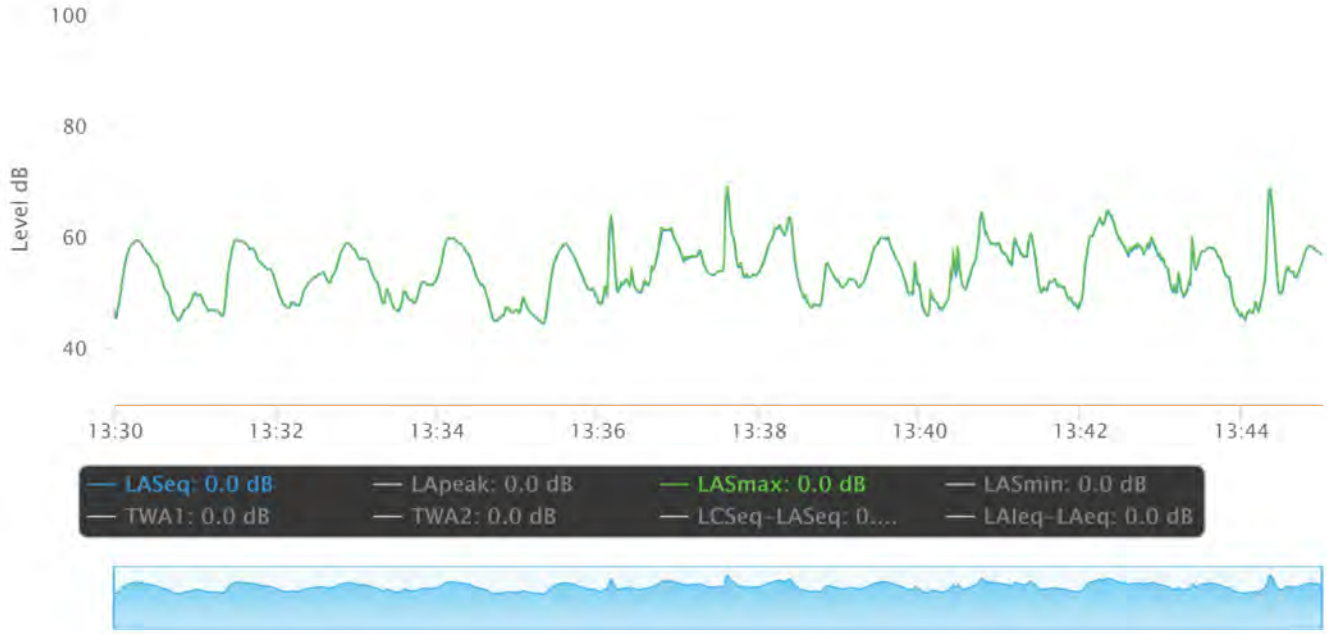
Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	61.1 dB
LAS 10.0	59.5 dB
LAS 33.3	56.2 dB
LAS 50.0	53.3 dB
LAS 66.6	51.1 dB
LAS 90.0	47.1 dB

Time History



Lacrosse ST-7

Measurement Report

Report Summary

Meter's File Name	LxT_Data.008.s	Computer's File Name	LxT_0006386-20240409 144801-LxT_ST-7 Lacross.ldbin
Meter	LxT1 0006386		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2024-04-09 14:48:01	Duration	2:07:42.2
End Time	2024-04-09 16:55:43	Run Time	2:07:42.2
		Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	58.7 dB		
LAE	97.5 dB	SEA	--- dB
EA	631.7 µPa²h		
EA8	2.4 mPa²h		
EA40	11.9 mPa²h		
LAS_{peak}	105.1 dB	2024-04-09 16:03:29	
LAS_{max}	83.8 dB	2024-04-09 15:31:25	
LAS_{min}	42.3 dB	2024-04-09 16:53:42	
LA_{eq}	58.7 dB		
LC_{eq}	68.5 dB	LC_{eq} - LA_{eq}	9.8 dB
LAI_{eq}	61.7 dB	LAI_{eq} - LA_{eq}	3.0 dB

Exceedances	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpeak > 135.0 dB	0	0:00:00.0
LASpeak > 137.0 dB	0	0:00:00.0
LASpeak > 140.0 dB	0	0:00:00.0

Community Noise	LDN	LDay	LNight
	58.7 dB	58.7 dB	0.0 dB
	LDEN	LDay	LEve	LNight
	58.7 dB	58.7 dB	--- dB	--- dB

Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	58.7 dB		--- dB		--- dB	
$LS_{(max)}$	83.8 dB	2024-04-09 15:31:25	--- dB		--- dB	
$LS_{(min)}$	42.3 dB	2024-04-09 16:53:42	--- dB		--- dB	
$L_{Peak(max)}$	105.1 dB	2024-04-09 16:03:29	--- dB		--- dB	

Overloads	Count	Duration
	0	0:00:00.0

Statistics

LAS 5.0	63.4 dB
LAS 10.0	61.1 dB
LAS 33.3	55.4 dB
LAS 50.0	53.3 dB
LAS 66.6	51.5 dB
LAS 90.0	48.4 dB

Modified Results

Overall Metrics

LA_{eq}	58.8 dB	
LAE	97.5 dB	
EA	619.2 µPa²h	
EA8	2.4 mPa²h	
EA40	12.0 mPa²h	
LAS_{peak}	105.1 dB	2024-04-09 16:03:28
LAS_{max}	19.2 dB	2024-04-09 15:31:24
LAS_{min}	16.3 dB	2024-04-09 16:53:41
LA_{eq}	58.8 dB	
LC_{eq}	--- dB	

$LC_{eq} - LA_{eq}$ --- dB

Community Noise

LDN	LDay	LNight
58.8 dB	58.8 dB	0.0 dB

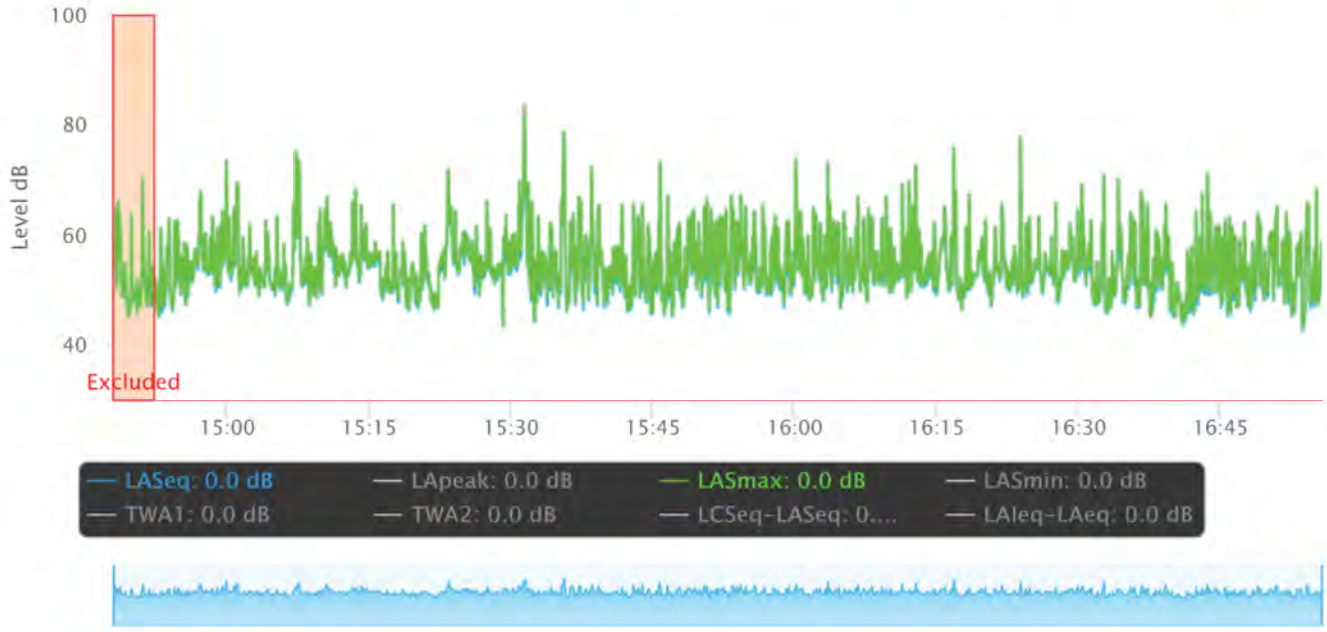
LDEN	LDay	LEve	LNight
58.8 dB	58.8 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	17.7 dB		--- dB		--- dB	
$LS_{(max)}$	19.2 dB	2024-04-09 15:31:24	--- dB		--- dB	
$LS_{(min)}$	16.3 dB	2024-04-09 16:53:41	--- dB		--- dB	
$L_{Peak(max)}$	20.2 dB	2024-04-09 16:03:28	--- dB		--- dB	

Excluded data collected before pregame activities started around 2:53 pm.

Time History



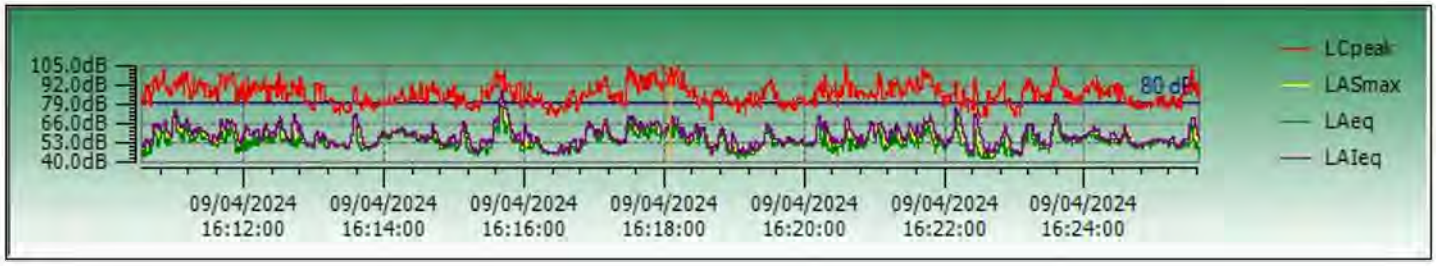
Lacrosse ST-8

Casella CEL Ltd.

Report On CEL-63X

Instrument Model	**CEL-633C**			
Serial Number	0499599	Response	Random	Result
Start Date & Time	4/9/2024 4:10:32 PM	End Date & Time	4/9/2024 4:25:38 PM	
Duration	00:15:06 HH:MM:SS	Pause Duration	00:00:00 HH:MM:SS	
LAeq	59.4 dB	Calibration (Before) Date	4/9/2024 2:14:47 PM	
LASmax with Time	79.6 dB (4/9/2024 4:15:40 PM)	Calibration (Before) SPL	114 dB	
LAF 90%	47.5 dB	Calibration (After) Date		
LAF 50%	54 dB	Calibration Drift	0.0 dB	
LAF 10%	62 dB	Overload	No	
LASmax	79.6 dB	Battery Low	No	

Notes



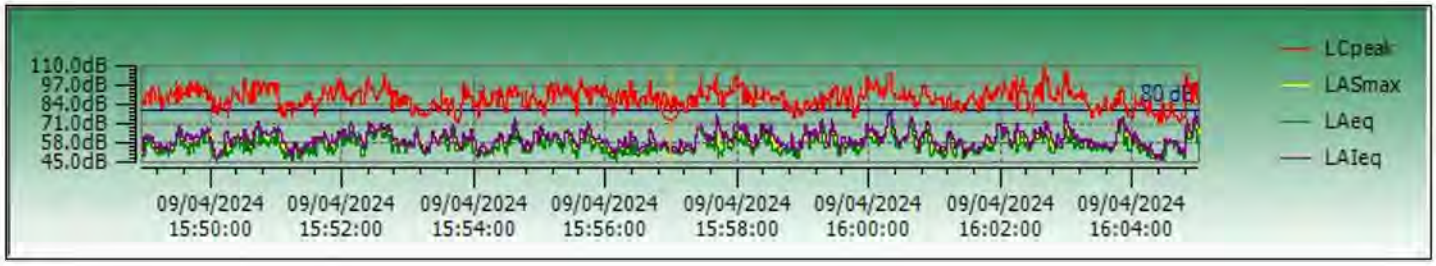
Lacrosse ST-9

Report On CEL-63X

Casella CEL Ltd.

Instrument Model	**CEL-633C**			
Serial Number	0499599	Response	Random	Result
Start Date & Time	4/9/2024 3:48:57 PM	End Date & Time	4/9/2024 4:05:00 PM	
Duration	00:16:03 HH:MM:SS	Pause Duration	00:00:00 HH:MM:SS	
LAeq	61.2 dB	Calibration (Before) Date	4/9/2024 2:14:47 PM	
LASmax with Time	76.2 dB (4/9/2024 4:00:19 PM)	Calibration (Before) SPL	114 dB	
LAF 90%	51 dB	Calibration (After) Date		
LAF 50%	56.5 dB	Calibration Drift	0.0 dB	
LAF 10%	64.5 dB	Overload	No	
LASmax	76.2 dB	Battery Low	No	

Notes



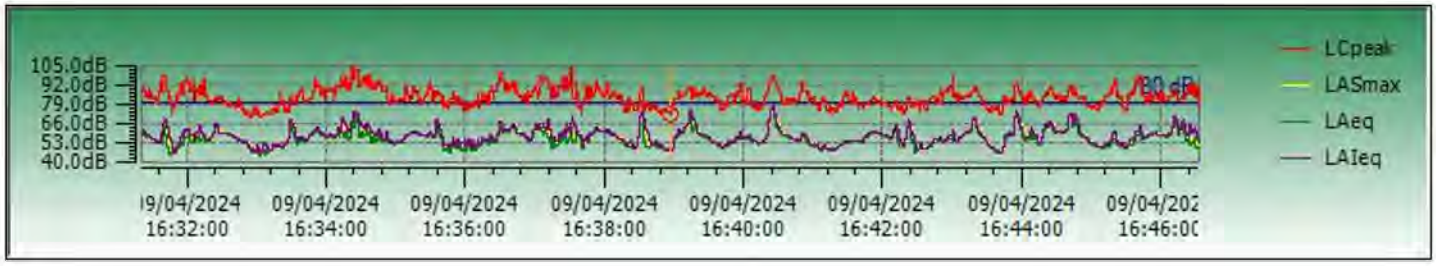
Lacrosse ST-10

Casella CEL Ltd.

Report On CEL-63X

Instrument Model	**CEL-633C**			
Serial Number	0499599	Response	Random	Result
Start Date & Time	4/9/2024 4:31:20 PM	End Date & Time	4/9/2024 4:46:32 PM	
Duration	00:15:12 HH:MM:SS	Pause Duration	00:00:00 HH:MM:SS	
LAeq	59.7 dB	Calibration (Before) Date	4/9/2024 2:14:47 PM	
LASmax with Time	75.4 dB (4/9/2024 4:40:25 PM)	Calibration (Before) SPL	114 dB	
LAF 90%	49.5 dB	Calibration (After) Date		
LAF 50%	56 dB	Calibration Drift	0.0 dB	
LAF 10%	62.5 dB	Overload	No	
LASmax	75.4 dB	Battery Low	No	

Notes



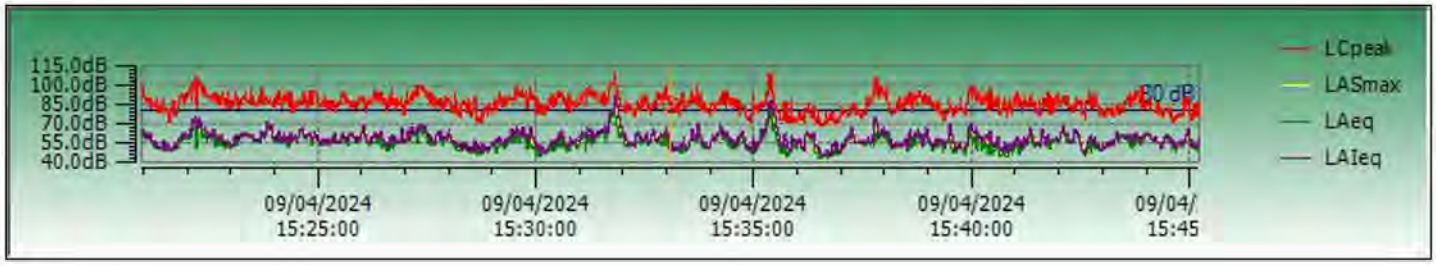
Lacrosse ST-11

Report On CEL-63X

Casella CEL Ltd.

Instrument Model	**CEL-633C**			
Serial Number	0499599	Response	Random	Result
Start Date & Time	4/9/2024 3:20:57 PM	End Date & Time	4/9/2024 3:45:12 PM	
Duration	00:24:15 HH:MM:SS	Pause Duration	00:00:00 HH:MM:SS	
LAeq	62.1 dB	Calibration (Before) Date	4/9/2024 2:14:47 PM	
LASmax with Time	85.5 dB (4/9/2024 3:31:49 PM)	Calibration (Before) SPL	114 dB	
LAF 90%	49.5 dB	Calibration (After) Date		
LAF 50%	55.5 dB	Calibration Drift	0.0 dB	
LAF 10%	62 dB	Overload	No	
LASmax	85.5 dB	Battery Low	No	

Notes



Track and Field ST-7

Measurement Report

Report Summary

Meter's File Name	LxT_Data.010.s	Computer's File Name	LxT_0006386-20240410 163302-LxT_ST-7 Track & Field.ldbin
Meter	LxT1 0006386		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2024-04-10 16:33:02	Duration	2:27:27.8
End Time	2024-04-10 19:00:30	Run Time	2:27:27.8
		Pause Time	0:00:00.0

Results

Overall Metrics

LA_{eq}	60.1 dB		
LAE	99.6 dB	SEA	--- dB
EA	1.0 mPa²h		
EA8	3.3 mPa²h		
EA40	16.6 mPa²h		
LAS_{peak}	108.2 dB	2024-04-10 17:21:13	
LAS_{max}	88.3 dB	2024-04-10 17:21:13	
LAS_{min}	46.2 dB	2024-04-10 17:19:14	
LA_{eq}	60.1 dB		
LC_{eq}	68.5 dB	$LC_{eq} - LA_{eq}$	8.3 dB
LAI_{eq}	65.2 dB	$LAI_{eq} - LA_{eq}$	5.0 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	1	0:00:06.6
LAS > 115.0 dB	0	0:00:00.0
LASpeak > 135.0 dB	0	0:00:00.0
LASpeak > 137.0 dB	0	0:00:00.0
LASpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
60.1 dB	60.1 dB	0.0 dB

LDEN	LDay	LEve	LNight
59.6 dB	60.2 dB	51.0 dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	60.1 dB		--- dB		--- dB	
$LS_{(max)}$	88.3 dB	2024-04-10 17:21:13	--- dB		--- dB	
$LS_{(min)}$	46.2 dB	2024-04-10 17:19:14	--- dB		--- dB	
$L_{Peak(max)}$	108.2 dB	2024-04-10 17:21:13	--- dB		--- dB	

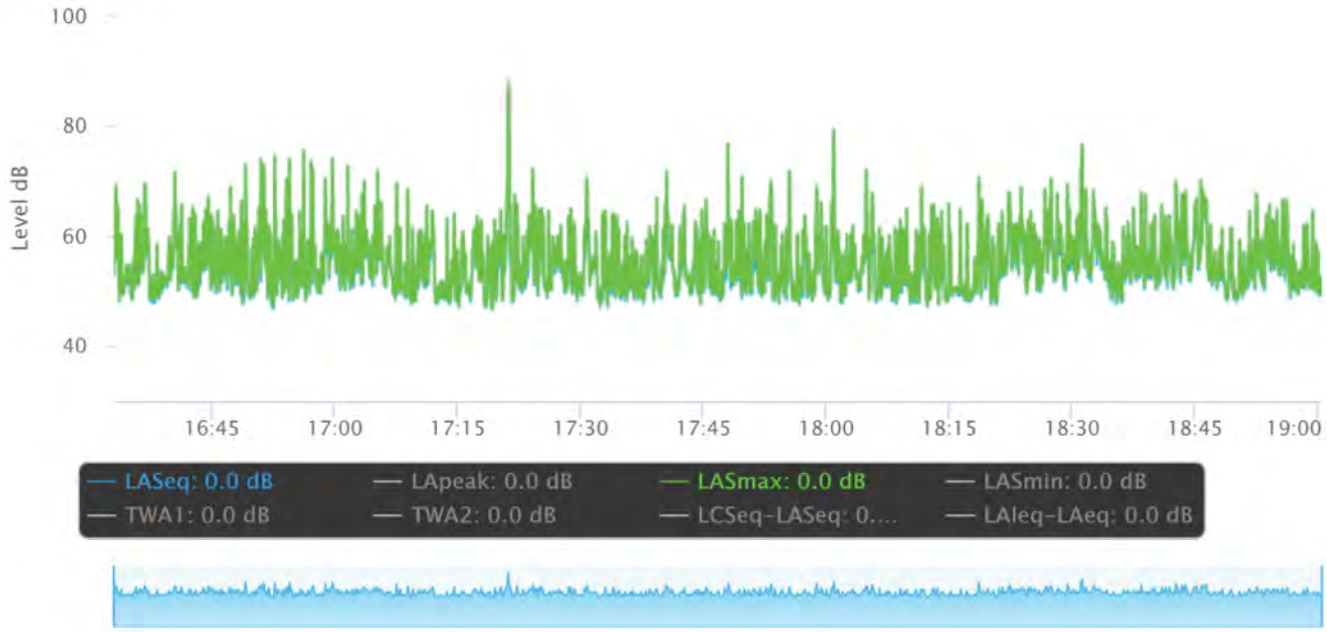
Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	64.1 dB
LAS 10.0	61.7 dB
LAS 33.3	56.4 dB
LAS 50.0	53.8 dB
LAS 66.6	51.8 dB
LAS 90.0	49.2 dB

Time History



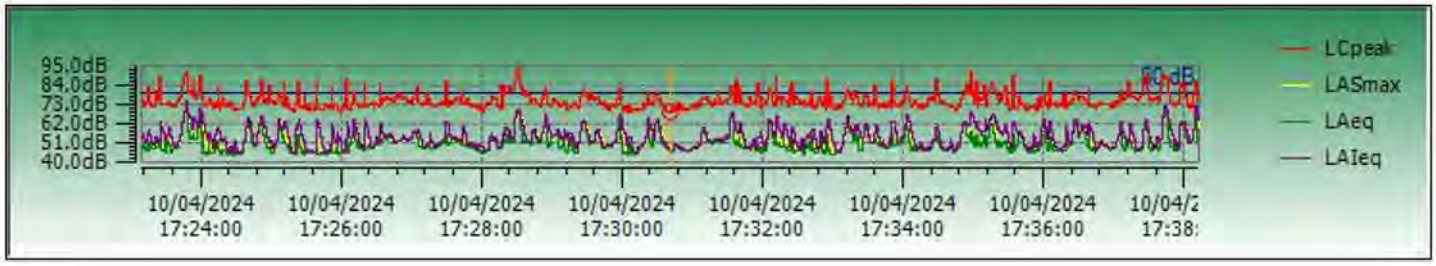
Track and Field ST-8

Casella CEL Ltd.

Report On CEL-63X

Instrument Model	**CEL-633C**			
Serial Number	2511397	Response	Random	Result
Start Date & Time	4/10/2024 5:23:09 PM	End Date & Time	4/10/2024 5:38:12 PM	
Duration	00:15:03 HH:MM:SS	Pause Duration	00:00:00 HH:MM:SS	
LAeq	55.9 dB	Calibration (Before) Date	4/10/2024 3:26:27 PM	
LASmax with Time	73.2 dB (4/10/2024 5:23:47 PM)	Calibration (Before) SPL	114 dB	
LAF 90%	46.5 dB	Calibration (After) Date		
LAF 50%	50.5 dB	Calibration Drift	0.0 dB	
LAF 10%	59.5 dB	Overload	No	
LASmax	73.2 dB	Battery Low	No	

Notes



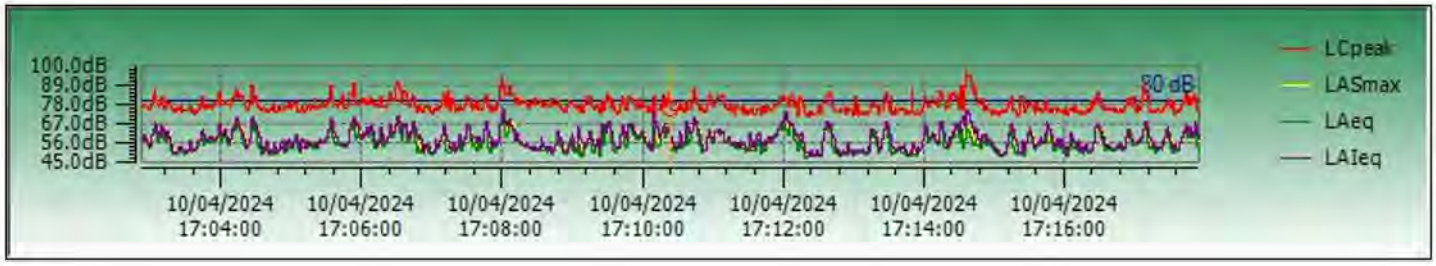
Track and Field ST-9

Casella CEL Ltd.

Report On CEL-63X

Instrument Model	**CEL-633C**			
Serial Number	2511397	Response	Random	Result
Start Date & Time	4/10/2024 5:02:52 PM	End Date & Time	4/10/2024 5:17:55 PM	
Duration	00:15:03 HH:MM:SS	Pause Duration	00:00:00 HH:MM:SS	
LAeq	59.4 dB	Calibration (Before) Date	4/10/2024 3:26:27 PM	
LASmax with Time	74.1 dB (4/10/2024 5:08:00 PM)	Calibration (Before) SPL	114 dB	
LAF 90%	50.5 dB	Calibration (After) Date		
LAF 50%	55.5 dB	Calibration Drift	0.0 dB	
LAF 10%	63.5 dB	Overload	No	
LASmax	74.1 dB	Battery Low	No	

Notes



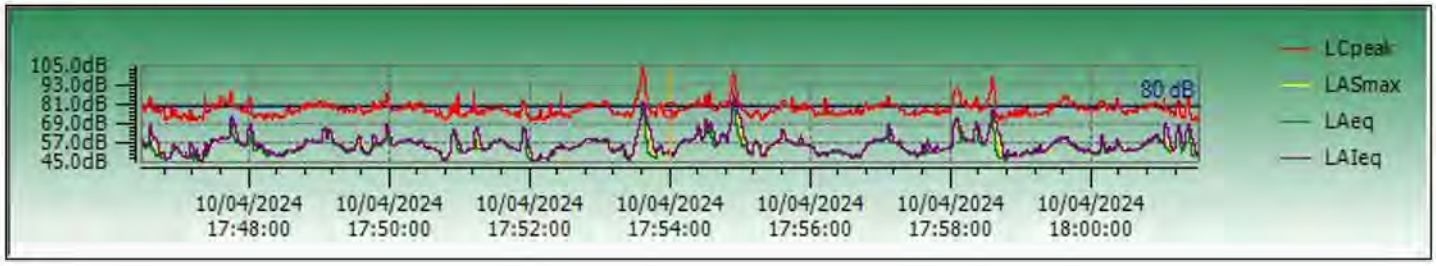
Track and Field ST-10

Casella CEL Ltd.

Report On CEL-63X

Instrument Model	**CEL-633C**			
Serial Number	2511397	Response	Random	Result
Start Date & Time	4/10/2024 5:46:28 PM	End Date & Time	4/10/2024 6:01:32 PM	
Duration	00:15:04 HH:MM:SS	Pause Duration	00:00:00 HH:MM:SS	
LAeq	62.2 dB	Calibration (Before) Date	4/10/2024 3:26:27 PM	
LASmax with Time	84.5 dB (4/10/2024 5:54:55 PM)	Calibration (Before) SPL	114 dB	
LAF 90%	49 dB	Calibration (After) Date		
LAF 50%	54 dB	Calibration Drift	0.0 dB	
LAF 10%	61.5 dB	Overload	No	
LASmax	84.5 dB	Battery Low	No	

Notes



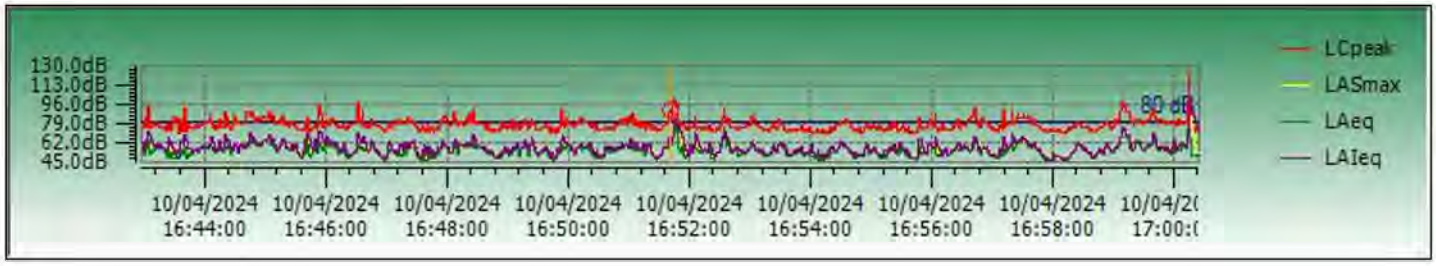
Track and Field ST-11 1

Report On CEL-63X

Casella CEL Ltd.

Instrument Model	**CEL-633C**			
Serial Number	2511397	Response	Random	Result
Start Date & Time	4/10/2024 4:42:58 PM	End Date & Time	4/10/2024 5:00:25 PM	
Duration	00:17:27 HH:MM:SS	Pause Duration	00:00:00 HH:MM:SS	
LAeq	62.7 dB	Calibration (Before) Date	4/10/2024 3:26:27 PM	
LASmax with Time	89.4 dB (4/10/2024 5:00:15 PM)	Calibration (Before) SPL	114 dB	
LAF 90%	49.5 dB	Calibration (After) Date		
LAF 50%	55.5 dB	Calibration Drift	0.0 dB	
LAF 10%	61.5 dB	Overload	No	
LASmax	89.4 dB	Battery Low	No	

Notes

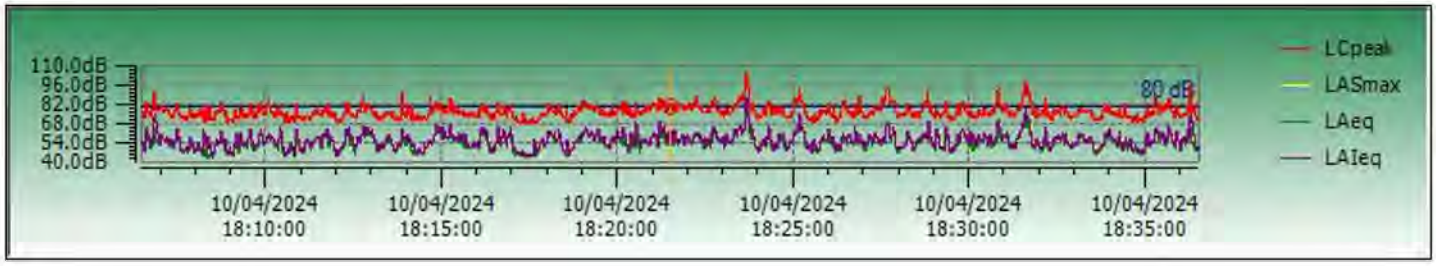


Track and Field ST-11 2

Casella CEL Ltd.

Report On CEL-63X

Instrument Model	**CEL-633C**			
Serial Number	2511397	Response	Random	Result
Start Date & Time	4/10/2024 6:06:28 PM	End Date & Time	4/10/2024 6:36:33 PM	
Duration	00:30:05 HH:MM:SS	Pause Duration	00:00:00 HH:MM:SS	
LAeq	60.3 dB	Calibration (Before) Date	4/10/2024 3:26:27 PM	
LASmax with Time	84.6 dB (4/10/2024 6:23:40 PM)	Calibration (Before) SPL	114 dB	
LAF 90%	48 dB	Calibration (After) Date		
LAF 50%	55 dB	Calibration Drift	0.0 dB	
LAF 10%	61.5 dB	Overload	No	
LASmax	84.6 dB	Battery Low	No	
Notes				



Football ST-7

LARSON DAVIS
A PCB DIVISION

SoundExpert 821 Summary: 2024-09-13 13:34:45

User:

Location:

Job Description:

Notes: Could not parse section, making sure you have the latest G4 installed may resolve this issue.

Meter General Information

	Model	Serial
Meter	SoundExpert 821	40355
Preamp	PRM821	
Microphone	377B02	
Unique File Id	00C:00009DA3:66DB3CCE:00000826	

Overall Measurement

Start Date & Time	2024-09-06 17:33:02			
Stop Date & Time	2024-09-06 21:11:33			
Run Time	03:38:15			
Pre-Calibration				
Date/Time	2024-08-06 09:30:27			
Calibrator Level	114.0 dB			
Meter Sensitivity	-25.24 dB re 1V/Pa			
Post-Calibration				
Date/Time	2024-09-06 21:16:52			
Calibrator Level	114.0 dB			
Meter Sensitivity	-25.27 dB re 1V/Pa			
Sensitivity Delta	-0.04 dB			
LAleq	67.8 dB			
	A	**C**	**Z**	
Lweq	65.0	74.7	76.0	
Lwpk	99.8 dB	103.4 dB	105.3 dB	
	2024-09-06 18:50:16	2024-09-06 20:18:07	2024-09-06 20:18:07	
LwSmin	50.2 dB	61.0 dB	63.3 dB	
	2024-09-06 17:37:29	2024-09-06 19:31:39	2024-09-06 19:43:04	
LwSmax	81.5 dB	93.0 dB	94.3 dB	
	2024-09-06 20:32:49	2024-09-06 20:03:41	2024-09-06 20:03:41	
LwFmin	48.2 dB	59.0 dB	61.1 dB	
	2024-09-06 17:37:28	2024-09-06 18:34:46	2024-09-06 19:19:23	
LwFmax	83.9 dB	95.8 dB	96.8 dB	
	2024-09-06 19:02:37	2024-09-06 20:03:39	2024-09-06 20:03:39	
Lwlmin	52.4 dB	62.6 dB	65.4 dB	
	2024-09-06 18:16:17	2024-09-06 19:31:43	2024-09-06 19:42:59	
Lwlmax	85.5 dB	96.4 dB	98.4 dB	
	2024-09-06 20:02:33	2024-09-06 20:03:39	2024-09-06 20:18:07	

w = frequency weighting (A, C or Z)

Community Noise	**LDN**	**LDay (07:00-22:00)**	**LNight (22:00-07:00)**	
	65.0 dB	65.0 dB	— dB	
	LDEN	**LDay (07:00-19:00)**	**LEve (19:00-22:00)**	**LNight (22:00-07:00)**
	66.4 dB	64.2 dB	65.5 dB	— dB
LCeq - LAeq	9.6 dB			
LAleq	67.8 dB			
Overload Count	0			
Overload Duration	00:00:00			
	A	**C**	**Z**	
Under Range Peak	50.0 dB	50.0 dB	62.0 dB	
Under Range Limit	24.0 dB	27.0 dB	37.0 dB	
Noise Floor	17.0 dB	18.0 dB	25.0 dB	

Ln Percentiles

LAS 5.0	69.7 dB
LAS 10.0	67.8 dB
LAS 33.3	64.3 dB
LAS 50.0	62.5 dB
LAS 66.6	60.3 dB
LAS 90.0	57.3 dB

Exceedances

	Count	Duration
LAS > 85 dB	0	0
LAS > 95 dB	0	0
LCpk > 135 dB	0	0
LCpk > 137 dB	0	0
LCpk > 140 dB	0	0

Sound Exposure

SELA	106.2 dB
EA (Pa²s)	16.7 Pa²s
EA,8 h (Pa²s)	36.8 Pa²s
EA,40 h (Pa²s)	184.1 Pa²s
EA (Pa²h)	0.0 Pa²h
EA,8 h (Pa²h)	0.0 Pa²h
EA,40 h (Pa²h)	0.1 Pa²h

Modified Summary

Overall Measurement

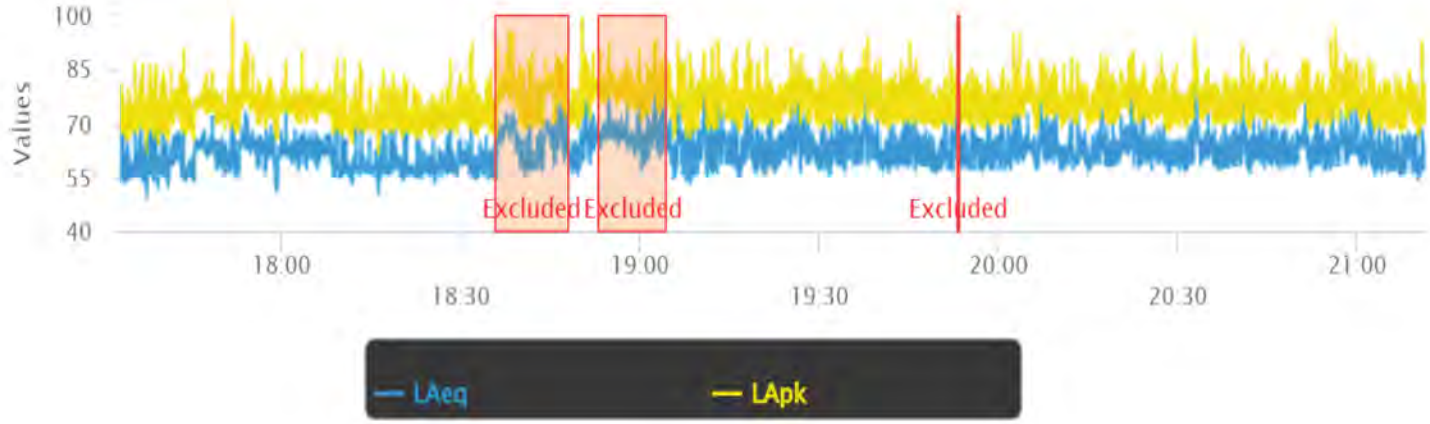
Start Date & Time	2024-09-06 17:33:02	
Stop Date & Time	2024-09-06 21:11:33	
Run Time	03:14:28.00	
L_{Aeq}	64.5 dB	
L_{Apk}	99.8 dB	2024-09-06 18:50:16
L_{Ceq}	74.5 dB	
L_{Cpk}	103.4 dB	2024-09-06 20:18:07
L_{Zeq}	75.9 dB	
L_{Zpk}	105.3 dB	2024-09-06 20:18:07
$L_{Ceq} - L_{Aeq}$	10.0 dB	

Excluded data collected when leaf blower and pressure washer were used near the noise monitoring location.

Sound Exposure

SEL_A	105.2 dB
E_A (Pa²s)	13.1 Pa²s
$E_{A,8\,h}$ (Pa²s)	32.4 Pa²s
$E_{A,40\,h}$ (Pa²s)	161.9 Pa²s
E_A (Pa²h)	0.0 Pa²h
$E_{A,8\,h}$ (Pa²h)	0.0 Pa²h
$E_{A,40\,h}$ (Pa²h)	0.0 Pa²h

Time History



Football ST-8 Pre-game

Measurement Report

Report Summary

Meter's File Name	LxT_Data.002.s	Computer's File Name	LxT_0006386-20240906 175850-LxT_Data.002.ldbin
Meter	LxT1 0006386	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2024-09-06 17:58:50	Duration	0:15:04.0		
End Time	2024-09-06 18:13:54	Run Time	0:15:04.0	Pause Time	0:00:00.0
Pre-Calibration	2024-09-06 16:33:04	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	57.2 dB		
LAE	86.8 dB	SEA	--- dB
EA	52.7 µPa²h		
EA8	1.7 mPa²h		
EA40	8.4 mPa²h		
LAS_{peak}	88.7 dB	2024-09-06 18:11:09	
LAS_{max}	74.6 dB	2024-09-06 18:13:18	
LAS_{min}	45.5 dB	2024-09-06 18:07:57	
LA_{eq}	57.2 dB		
LC_{eq}	68.9 dB	LC_{eq} - LA_{eq}	11.7 dB
$LA_{I_{eq}}$	59.8 dB	$LA_{I_{eq}}$ - LA_{eq}	2.6 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpk > 135.0 dB	0	0:00:00.0
LASpk > 137.0 dB	0	0:00:00.0
LASpk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
57.2 dB	57.2 dB	0.0 dB

LDEN	LDay	LEve	LNight
57.2 dB	57.2 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	57.2 dB		--- dB		--- dB	
$LS_{(max)}$	74.6 dB	2024-09-06 18:13:18	--- dB	None	--- dB	None
$LS_{(min)}$	45.5 dB	2024-09-06 18:07:57	--- dB	None	--- dB	None
$L_{Peak(max)}$	88.7 dB	2024-09-06 18:11:09	--- dB	None	--- dB	None

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	63.0 dB
LAS 10.0	60.2 dB
LAS 33.3	54.8 dB
LAS 50.0	53.0 dB
LAS 66.6	51.7 dB
LAS 90.0	48.9 dB

Time History



Football ST-8 Game

Measurement Report

Report Summary

Meter's File Name	LxT_Data.007.s	Computer's File Name	LxT_0006386-20240906 202850-LxT_Data.007.ldbin
Meter	LxT1 0006386	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2024-09-06 20:28:50	Duration	0:15:03.2		
End Time	2024-09-06 20:43:54	Run Time	0:15:03.2	Pause Time	0:00:00.0
Pre-Calibration	2024-09-06 16:33:04	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	60.6 dB		
LAE	90.2 dB	SEA	--- dB
EA	115.2 µPa²h		
EA8	3.7 mPa²h		
EA40	18.4 mPa²h		
LAS_{peak}	106.3 dB	2024-09-06 20:32:00	
LAS_{max}	81.6 dB	2024-09-06 20:32:00	
LAS_{min}	45.5 dB	2024-09-06 20:39:27	
LA_{eq}	60.6 dB		
LC_{eq}	70.0 dB	LC_{eq} - LA_{eq}	9.4 dB
LA_{Leq}	69.1 dB	LA_{Leq} - LA_{eq}	8.5 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpk > 135.0 dB	0	0:00:00.0
LASpk > 137.0 dB	0	0:00:00.0
LASpk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
60.6 dB	60.6 dB	0.0 dB

LDEN	LDay	LEve	LNight
--- dB	--- dB	60.6 dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	60.6 dB		--- dB		--- dB	
$LS_{(max)}$	81.6 dB	2024-09-06 20:32:00	--- dB	None	--- dB	None
$LS_{(min)}$	45.5 dB	2024-09-06 20:39:27	--- dB	None	--- dB	None
$L_{Peak(max)}$	106.3 dB	2024-09-06 20:32:00	--- dB	None	--- dB	None

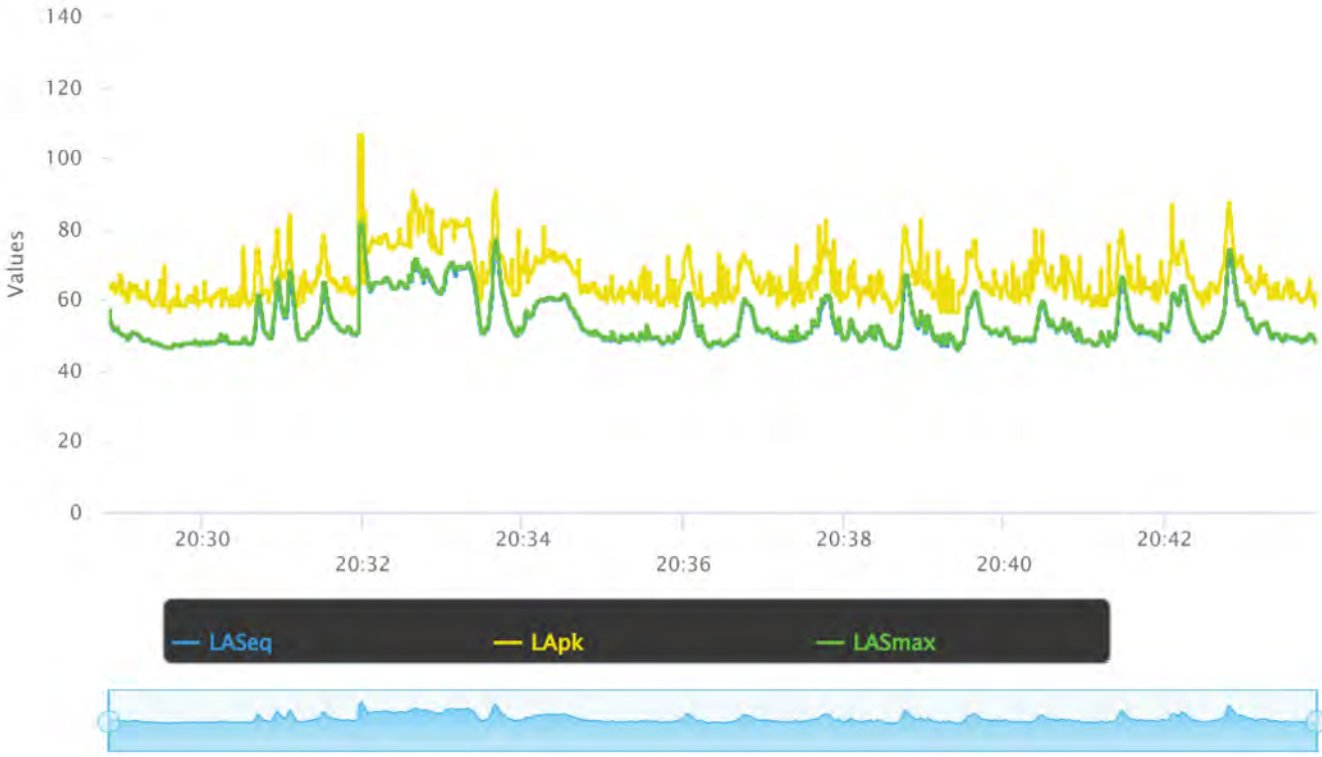
Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	66.7 dB
LAS 10.0	63.6 dB
LAS 33.3	53.3 dB
LAS 50.0	50.7 dB
LAS 66.6	49.2 dB
LAS 90.0	47.6 dB

Time History



Football ST-9 Pre-game

Measurement Report

Report Summary

Meter's File Name	LxT_Data.003.s	Computer's File Name	LxT_0006386-20240906 181850-LxT_Data.003.ldbin
Meter	LxT1 0006386	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2024-09-06 18:18:50	Duration	0:15:02.1		
End Time	2024-09-06 18:33:52	Run Time	0:15:02.1	Pause Time	0:00:00.0
Pre-Calibration	2024-09-06 16:33:04	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	62.4 dB		
LAE	92.0 dB	SEA	--- dB
EA	174.2 µPa²h		
EA8	5.6 mPa²h		
EA40	27.8 mPa²h		
LAS_{peak}	96.9 dB	2024-09-06 18:29:32	
LAS_{max}	76.3 dB	2024-09-06 18:31:22	
LAS_{min}	52.0 dB	2024-09-06 18:19:38	
LA_{eq}	62.4 dB		
LC_{eq}	72.0 dB	LC_{eq} - LA_{eq}	9.6 dB
LA_{Leq}	65.8 dB	LA_{Leq} - LA_{eq}	3.4 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpk > 135.0 dB	0	0:00:00.0
LASpk > 137.0 dB	0	0:00:00.0
LASpk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
62.4 dB	62.4 dB	0.0 dB

LDEN	LDay	LEve	LNight
62.4 dB	62.4 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	62.4 dB		--- dB		--- dB	
$LS_{(max)}$	76.3 dB	2024-09-06 18:31:22	--- dB	None	--- dB	None
$LS_{(min)}$	52.0 dB	2024-09-06 18:19:38	--- dB	None	--- dB	None
$L_{Peak(max)}$	96.9 dB	2024-09-06 18:29:32	--- dB	None	--- dB	None

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	67.1 dB
LAS 10.0	65.3 dB
LAS 33.3	61.9 dB
LAS 50.0	60.4 dB
LAS 66.6	58.7 dB
LAS 90.0	55.7 dB

Time History



Football ST-9 Game

Measurement Report

Report Summary

Meter's File Name	LxT_Data.006.s	Computer's File Name	LxT_0006386-20240906 191850-LxT_Data.006.ldbin
Meter	LxT1 0006386	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2024-09-06 19:18:50	Duration	0:15:01.3		
End Time	2024-09-06 19:33:52	Run Time	0:15:01.3	Pause Time	0:00:00.0
Pre-Calibration	2024-09-06 16:33:04	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	65.4 dB		
LAE	94.9 dB	SEA	--- dB
EA	347.2 µPa²h		
EA8	11.1 mPa²h		
EA40	55.5 mPa²h		
LAS_{peak}	90.9 dB	2024-09-06 19:26:20	
LAS_{max}	78.4 dB	2024-09-06 19:24:14	
LAS_{min}	55.2 dB	2024-09-06 19:32:28	
LA_{eq}	65.4 dB		
LC_{eq}	72.6 dB	$LC_{eq} - LA_{eq}$	7.2 dB
LAI_{eq}	66.9 dB	$LAI_{eq} - LA_{eq}$	1.5 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpk > 135.0 dB	0	0:00:00.0
LASpk > 137.0 dB	0	0:00:00.0
LASpk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
65.4 dB	65.4 dB	0.0 dB

LDEN	LDay	LEve	LNight
--- dB	--- dB	65.4 dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	65.4 dB		--- dB		--- dB	
$LS_{(max)}$	78.4 dB	2024-09-06 19:24:14	--- dB	None	--- dB	None
$LS_{(min)}$	55.2 dB	2024-09-06 19:32:28	--- dB	None	--- dB	None
$L_{Peak(max)}$	90.9 dB	2024-09-06 19:26:20	--- dB	None	--- dB	None

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	69.0 dB
LAS 10.0	68.0 dB
LAS 33.3	65.3 dB
LAS 50.0	63.7 dB
LAS 66.6	62.3 dB
LAS 90.0	59.1 dB

Time History



Football ST-10 Pre-game

Measurement Report

Report Summary

Meter's File Name	LxT_Data.004.s	Computer's File Name	LxT_0006386-20240906 183950-LxT_Data.004.ldbin
Meter	LxT1 0006386	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2024-09-06 18:39:50	Duration	0:15:02.2		
End Time	2024-09-06 18:54:53	Run Time	0:15:02.2	Pause Time	0:00:00.0
Pre-Calibration	2024-09-06 16:33:04	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	59.8 dB		
LAE	89.4 dB	SEA	--- dB
EA	95.7 µPa²h		
EA8	3.1 mPa²h		
EA40	15.3 mPa²h		
LAS_{peak}	97.7 dB	2024-09-06 18:50:38	
LAS_{max}	77.9 dB	2024-09-06 18:50:38	
LAS_{min}	48.7 dB	2024-09-06 18:47:04	
LA_{eq}	59.8 dB		
LC_{eq}	71.1 dB	LC_{eq} - LA_{eq}	11.3 dB
LA_{Leq}	64.8 dB	LA_{Leq} - LA_{eq}	5.0 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpk > 135.0 dB	0	0:00:00.0
LASpk > 137.0 dB	0	0:00:00.0
LASpk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
59.8 dB	59.8 dB	0.0 dB

LDEN	LDay	LEve	LNight
59.8 dB	59.8 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	59.8 dB		--- dB		--- dB	
$LS_{(max)}$	77.9 dB	2024-09-06 18:50:38	--- dB	None	--- dB	None
$LS_{(min)}$	48.7 dB	2024-09-06 18:47:04	--- dB	None	--- dB	None
$L_{Peak(max)}$	97.7 dB	2024-09-06 18:50:38	--- dB	None	--- dB	None

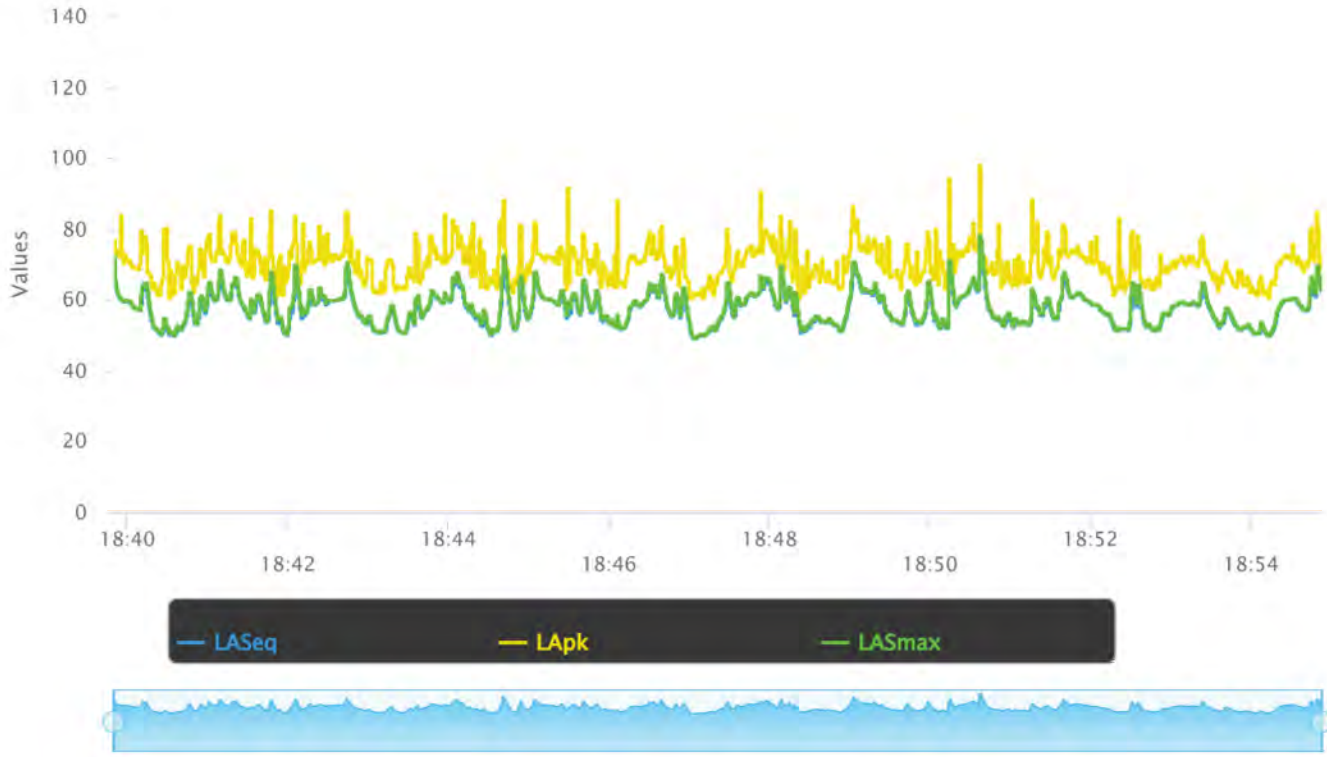
Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	64.8 dB
LAS 10.0	62.9 dB
LAS 33.3	59.4 dB
LAS 50.0	57.2 dB
LAS 66.6	54.6 dB
LAS 90.0	51.4 dB

Time History



Football ST-10 Game

Measurement Report

Report Summary

Meter's File Name	LxT_Data.005.s	Computer's File Name	LxT_0006386-20240906 185835-LxT_Data.005.ldbin
Meter	LxT1 0006386	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2024-09-06 18:58:35	Duration	0:15:16.1		
End Time	2024-09-06 19:13:51	Run Time	0:15:16.1	Pause Time	0:00:00.0
Pre-Calibration	2024-09-06 16:33:04	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	59.7 dB		
LAE	89.3 dB	SEA	--- dB
EA	95.0 µPa²h		
EA8	3.0 mPa²h		
EA40	14.9 mPa²h		
LAS_{peak}	86.3 dB	2024-09-06 19:02:10	
LAS_{max}	71.5 dB	2024-09-06 19:11:58	
LAS_{min}	46.8 dB	2024-09-06 19:06:58	
LA_{eq}	59.7 dB		
LC_{eq}	69.7 dB	LC_{eq} - LA_{eq}	10.0 dB
LA_{Leq}	62.2 dB	LA_{Leq} - LA_{eq}	2.5 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpk > 135.0 dB	0	0:00:00.0
LASpk > 137.0 dB	0	0:00:00.0
LASpk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
59.7 dB	59.7 dB	0.0 dB

LDEN	LDay	LEve	LNight
61.3 dB	59.8 dB	59.7 dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	59.7 dB		--- dB		--- dB	
$LS_{(max)}$	71.5 dB	2024-09-06 19:11:58	--- dB	None	--- dB	None
$LS_{(min)}$	46.8 dB	2024-09-06 19:06:58	--- dB	None	--- dB	None
$L_{Peak(max)}$	86.3 dB	2024-09-06 19:02:10	--- dB	None	--- dB	None

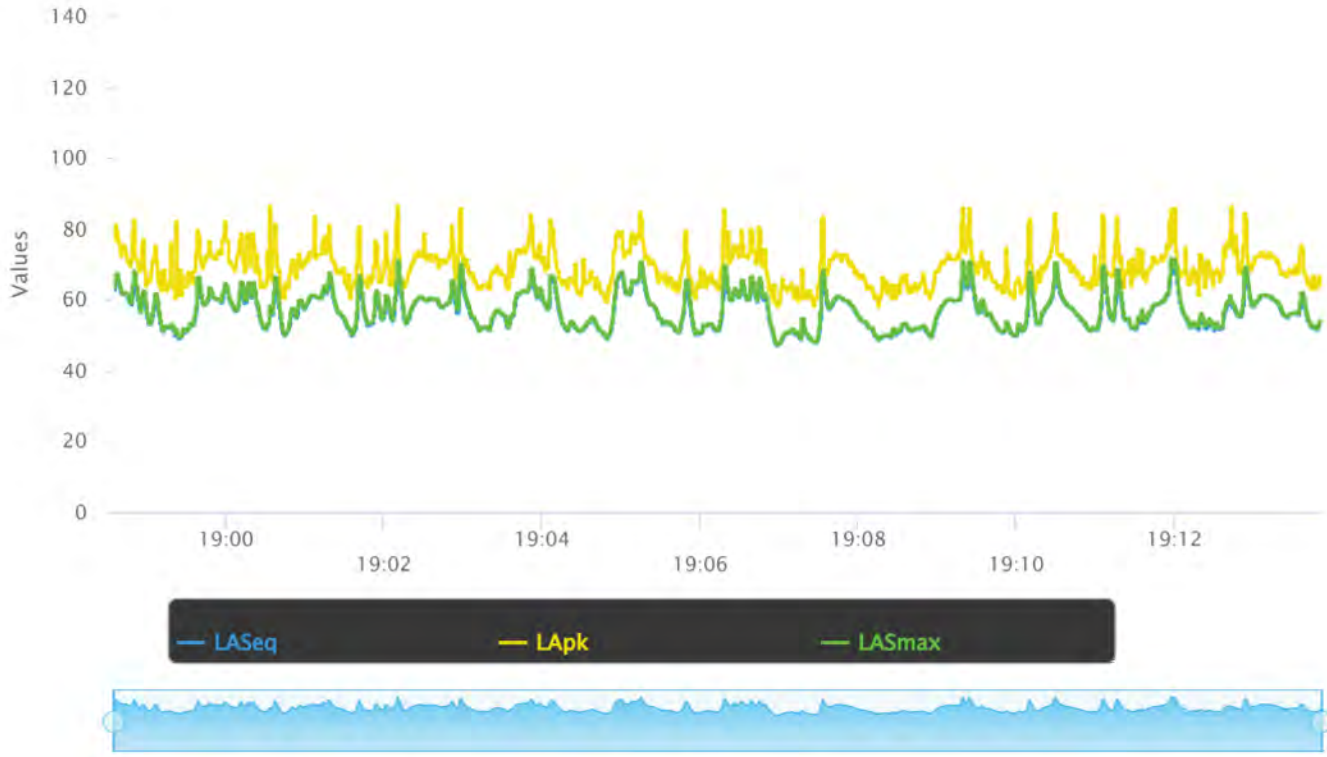
Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	65.5 dB
LAS 10.0	63.2 dB
LAS 33.3	59.2 dB
LAS 50.0	56.3 dB
LAS 66.6	53.4 dB
LAS 90.0	50.8 dB

Time History



MEMORANDUM

Date: 28 March 2024 **Job No.:** 21215-08

To: Chelsea Fordham, Principal Planner, San Francisco Planning Department

From: Yilin Tian, Project Environmental Engineer, Baseline Environmental Consulting

Subject: **Noise Monitoring and Impact Assessment Methodology, St. Ignatius Field Lighting Project, San Francsico, California**

Baseline Environmental Consulting (Baseline) and Panorama Environmental (Panorama) will conduct an ambient noise monitoring survey and prepare a noise impact assessment for the St. Ignatius Field Lighting Project (project) in San Francisco, California. Baseline has prepared this document to describe the methodology for characterizing the existing ambient noise conditions in the project vicinity and the noise levels during sporting events held at the project site, and evaluating potential noise impacts to nearby receptors. Noise monitoring activities will be conducted by Baseline and potential noise impacts will be assessed by Panorama. This study will be used to support environmental review of the project under the California Environmental Quality Act (CEQA).

Project Understanding

The project site consists of an athletic stadium (J.B. Murphy Field) and an upper practice field at the St. Ignatius College Preparatory School (school) campus, as shown in **Figure 1**. The athletic stadium has an amplified sound system (PA System). The project would involve operation of four 90-foot-tall, light-emitting diode (LED) stadium lights, which were installed in November 2021, and expanded use of four existing 40-foot-tall LED outdoor lights at the school's upper practice field. Use of both the stadium and upper practice field lights would allow school athletic teams to shift the timing of early morning practices to evening practices on up to 135 evenings and shift the timing of up to 15 games from Saturday morning and afternoon to Thursday and Friday evening during the school year, which runs from approximately August 15 to May 31. As a result, operation of the existing PA system would also shift to the evenings.

Noise Sensitive Receptors

The San Francisco Planning Department has defined noise-sensitive receptors as residents, hospitals, convalescent homes, schools, places of worship, hotels, and sensitive wildlife habitat. Based on review of existing Google aerial and street-view imagery and the San Francisco Zoning

Map,[1] existing noise sensitive receptors in the project vicinity include residences about 75 feet to the west across 39th Avenue and about 75 feet to the south across Rivera Street. There are no sensitive receptors adjacent to the north and east project boundaries. The nearest residential land uses to the east are located about 630 feet away from the eastern boundary of the athletic stadium.

Noise Level Measurements

The primary source of existing ambient noise in the vicinity of the project is vehicular traffic on major roadways. To characterize the existing ambient noise conditions, two long-term (24-hour) noise measurements and six short-term (15-minute) noise measurements will be collected in the project vicinity (**Figure 1**). The noise measurements will be performed on days when sporting events at the athletic stadium are not scheduled. The purpose of the long-term measurements is to characterize the ambient noise environment at sensitive receptors to the west and south of the project site along 39th Avenue and Rivera Street, respectively. The purpose of the short-term measurements will be to describe the ambient noise environment further away from the project site that could be affected by amplified noise levels during sporting events. For security, the long-term measurements (LT-1 and LT-2) will be collected along the perimeter of the project site within fenced enclosures, if accessible. The short-term measurements (ST-1 through ST-6) will be collected along the sidewalk adjacent to nearby sensitive receptors during the same time as the long-term measurements. Three sound level meters will be deployed, including two meters for long-term noise measurements and one for short-term noise measurements.

During project operation, the primary concern would be the noise levels generated by the school's stadium PA system during sporting events extended into the evening hours when the LED lights are in use. Baseline will conduct a noise monitoring survey in the vicinity of the project site to characterize the noise levels generated by the existing PA system during a varsity lacrosse game and a varsity Track and Field meet held at the school's athletic stadium. If required, Baseline will conduct an additional noise monitoring survey during a varsity football game in fall 2024 to supplement the other operational noise measurements described above. Short-term measurements (ST-7 through ST-11 will be collected at the nearby residential receptors and at 100 feet from the project property plane per Article 15.1 of the San Francisco Police Code (Section 1060.16). Two sound level meters will be deployed, including one meter for ST-7, and another meter for ST-8 through ST-11.

For each sporting event, noise levels will be monitored at location ST-7, which represents the nearest residence, during the entire game period. Noise levels at locations ST-8 through ST-11

[1] San Francisco Planning, 2023. San Francisco Zoning Map, April. Available at: https://sfplanning.org/resource/zoning-use-districts. Accessed: March 2024.

will be monitored for at least 15 minutes to capture noise generated by the PA system, depending on the duration of the game and the frequency of PA system usage. These short-term measurements will focus specifically on the noise levels generated by the PA system when it is in use. Some games also include playing music with the PA system about 30 minutes prior to the game, such as lacrosse and football. During the pre-game music period, noise levels will be monitored at location ST-7 (nearest residence to the west) and ST-11 (100 feet from project property plane) for 15 minutes. If time allows, noise levels at locations ST-9 and ST-10 will be monitored for up to 15 minutes.

The approximate locations of the proposed noise level measurements are shown in **Figure 1** and described in **Table 1**. The exact location of the measurements may be adjusted based on conditions observed in the field.

Consistent with Article 29 of the San Francisco Police Code (section 2901), Baseline will collect sound level measurements using Type 1 sound level meters, using slow response and "A" weighting. Consistent with Article 29 of the San Francisco Police Code (section 2902), the microphones will be positioned at least four feet above ground and protected from the effects of wind noises and other extraneous sounds by the use of appropriate windscreens. The meters will be field calibrated immediately prior to use. Observations of existing major sound sources (e.g., traffic), weather conditions, and other parameters will be documented during deployment and retrieval of long-term measurement equipment, as well as during the short-term measurements.

Table 1. Proposed Noise Level Measurements

Scenario	Type	ID	Purpose
Existing Ambient Environment	Long-term	LT-1	Determine existing ambient noise levels at the closest sensitive receptors adjacent to the west and south of the project site.
		LT-2	
	Short-term	ST-1	Determine existing ambient noise levels at sensitive receptors in the vicinity of the project site.
		ST-2	
		ST-3	
		ST-4	
		ST-5	
		ST-6	
Sporting Events (with PA system)	Short-term[1]	ST-7	Determine noise levels at the closest sensitive receptors adjacent to the west, south, and east of the project site.
		ST-8	
		ST-9	
		ST-10	

Scenario	Type	ID	Purpose
		ST-11	Determine noise levels at 100 feet from project property plane.

Note: Measurement locations are shown on **Figure 1**.

[1] For each sporting event, noise levels will be monitored at location ST-7 during the entire game period. Noise levels at locations ST-8 through ST-11 will be monitored for at least 15-minutes, depend on the duration of the game. During the pre-game music period (if any), noise levels will be monitored at location ST-7 and ST-11 for 15 minutes. If time allows, noise levels at locations ST-9 and ST-10 will be monitored for up to 15 minutes.

Data collected from the noise level measurements will be processed to calculate the types of noise levels summarized in Table 2. Additional types of noise levels may be calculated, as needed, to support environmental review of the project.

Table 2. Proposed Noise Level Calculations

Type	Purpose
Long-Term Measurements	24-hour L90 or Ldn to evaluate the existing ambient noise condition.
Short-Term Measurements	15-min L90 and Leq to evaluate the existing ambient noise condition in the vicinity of the project site
	ST-7: Leq and Lmax during the entire game to evaluate the noise levels generated by the amplified sound system during sport events held at the athletic stadium ST-8 through ST-11: 15-min (or longer) Leq and Lmax to evaluate the noise levels generated by the amplified sound system during sport events held at the athletic stadium

Notes:
L90 is the A-weighted noise levels that are exceeded 90 percent of the time during the measurement period.
Ldn is the day-night average sound level, which is the energy average of the A-weighted sound levels occurring during a 24-hour period, with a 10 dB penalty added to sound levels between 10 p.m. and 7 a.m.
Leq is the equivalent steady-state sound level containing the same total acoustical energy as a time-varying signal over a given sample period.
Lmax is the maximum sound level measured during a given measurement period.

Noise Impact Assessment

Based on the results of Baseline's noise measurements, Panorama technical staff will assess the project's impacts by considering and applying the following criteria:

- **San Francisco Police Code Article 15.1, Entertainment Regulations Permit and License Provisions, Section 1060.16, including but not limited to (b)(3):** The volume of outdoor amplified sound shall be controlled so that it does not exceed ambient levels at a

distance of 100 feet measured from the property plane (per requirements identified by the Entertainment Commission in permit #ECOTE23-224).

- **San Francisco Planning Department Ambient Noise Level Increase Criteria:** Section 2901 of the noise ordinance defines ambient as "the lowest sound level repeating itself during a minimum ten-minute period as measured with a type 1 precision sound level meter, using slow response and 'A' weighting." The duration over which ambient noise is measured can vary. An increase or decrease of 10 dB in sound pressure is perceived by an observer to be a doubling or halving of the sound.[2] The planning department considers an increase of 10 dBA Leq over existing daytime ambient noise levels at the nearest sensitive receptor, using the Federal Transit Administration methodology, to be a substantial temporary increase in noise levels.

- **San Francisco Noise Ordinance, Section 2909 (d), Fixed Residential Interior Noise Limits:** In order to prevent sleep disturbance, protect public health and prevent the acoustical environment from progressive deterioration due to the increasing use and influence of mechanical equipment, no fixed noise source may cause the noise level measured inside any sleeping or living room in any dwelling unit located on residential property to exceed 45 dBA between the hours of 10:00 p.m. to 7:00 a.m. or 55 dBA between the hours of 7:00 a.m. to 10:00p.m. with windows open except where building ventilation is achieved through mechanical systems that allow windows to remain closed.[3]

The impact assessment will be a quantitative analysis with the goal of determining whether the school's use of the PA system complies with applicable permit terms, local ordinance requirements, and CEQA standards for significance.

Noise Technical Report

Baseline and Panorama will collaboratively develop a Noise Technical Report, which will include the following:

- **Project Background and Description.** A brief summary of the project history, past and current use of the PA system, and project description.
- **Noise Measurement Methodology.** An overview of the noise measurement locations and methodology.

[2] Federal Highway Administration, Highway Traffic Noise Analysis and Abatement Policy and Guidance, December 2011.

[3] Panorama and Baseline assume only the daytime (7 am-10 pm) noise threshold of 55 dBA will be considered because all school athletic games occur during these hours.

- **Existing Noise Environment.** A summary of the long- and short-term noise measurement results for ambient noise conditions and sources of ambient noise.
- **Existing Noise-Sensitive Receptors.** A description of the existing noise-sensitive receptors in the project vicinity.
- **Noise Criteria.** A summary of the criteria and thresholds applicable to the noise analysis.
- **Noise Analysis.** A description of the sources of project operational noise (i.e., PA system), summary of the short-term noise measurement results during project operation (i.e., during athletic events), and analysis of whether the operational noise complies with criteria and is below thresholds. The noise analysis will specifically review noise levels under the following criteria-driven scenarios/locations:
  - 100 feet measured from the property plane, per San Francisco Police Code Article 15.1, Entertainment Regulations Permit and License Provisions, Section 1060.16,
  - Nearest sensitive receptor (outdoor noise analysis), per San Francisco Planning Department ambient noise level increase threshold
  - Nearest noise sensitive receptor (indoor noise analysis), per San Francisco Noise Ordinance, Section 2909 (d), Fixed Residential Interior Noise Limits

  If the operational noise levels exceed any aforementioned criteria/thresholds, noise reduction measures to reduce operational noise impacts will be provided.

Panorama and Baseline will prepare three iterations of the noise technical report: NTR-1, NTR-2, and NTR-3, which will provide the Planning Department with two rounds of review and comment.

Figure



Legend

- Project Site (J.B. Murphy Field and Upper Practice Field)
- LT-1 — Long-term noise measurement location (Existing Ambient)
- ST-1 — Short-term noise measurement location (Existing Ambient)
- ST-7 — Short-term noise measurement location (Sporting Event)

0 300 Feet

N

BASELINE ENVIRONMENTAL CONSULTING

Figure 1
Noise Measurement Locations

21215-08 Figures 03/06/24

St. Ignatius Field Lighting Project