Jacobs

Project Tango Data Center Preliminary Sound Impact Assessment

PBA Holdings, Inc.
Project Tango

April 2026

Project Tango Data Center Preliminary Sound Impact Assessment

Client Name:	PBA Holdings, Inc.		
Project Name:	Project Tango		
Document No:	260323110843_8403e38c	**Project No:**	D4068200
Date:	April 2026	**Project Manager:**	Kristin McCue/Jacobs
		File Name:	Project Tango Preliminary Sound Impact Assessment

Jacobs Engineering Group Inc.

7108 Fairway Drive, Suite 170
Palm Beach Gardens, FL 33418
United States

T + 1.561.799.3855
www.jacobs.com

Executive Summary

This preliminary noise impact assessment provides a systematic evaluation of the potential noise impacts resulting from the preliminary test fit design of Project Tango (Project), a proposed data center with an information technology (IT) capacity of 600 megawatts in Loxahatchee, Florida. The data center will contain IT server racks and required support equipment. The thermal loads generated by IT equipment at the proposed data center facility will be cooled primarily with a dry cooler fan-based system. The primary equipment emitting sound to the outdoors during normal operations has been identified as the dry cooler, one for each of the five buildings. Secondary sources are one air-cooled chiller per building and four substation transformers.

Jacobs conducted short- and long-term ambient sound monitoring the week of January 12, 2026, and the week of February 9, 2026, in the vicinity of the proposed Project. Short-term (15-minute) baseline noise measurements at the property line of the receiving residential development east of the site were performed at 400-foot intervals during the day, evening, and nighttime hours. Sound levels ranged from 47 to 74 decibels on an A-weighted scale (dBA). Longer-term measurements, conducted over several days in the same area, generally ranged between an average of 40 and 60 dBA, with lower sound levels measured at night, as expected. Sound levels increased toward the end of the week during the January monitoring event as a cold front approached, and additional gas turbines at the existing, nearby power plant may have started operations. Short-term (15-minute) daytime sound levels collected adjacent to the Project site, on the western side of the levee ranged, from 57 to 69 dBA, with higher sound levels closer to the existing, nearby power plant.

Standard acoustical engineering methods, such as the International Organization for Standardization 9613 standard for outdoor propagation, and vendor sound data for low noise equipment options, were used to determine predicted Project sound levels during normal operations. The resulting preliminary predicted Project sound level at the nearest residence is 45 dBA. Overall predicted Project sound levels fall within the range of measured existing sound levels at monitoring locations M2 and M3 (representative of nearest residences) and are below expected regulatory thresholds (60 decibels for fixed mechanical equipment at the receiving residential development to the east of the Project). In addition, although not expected to be applicable, the predicted Project sound levels comply with the lowest regulatory limit of 50 dBA at night for noise sources other than fixed mechanical equipment sources. Proposed noise control measures to minimize sound levels during facility operation include placing sound barriers adjacent to the substation transformers and implementing low noise design features. Low noise design features include, for example, locating equipment on the western portion of the site, selecting outdoor cooling equipment that is acoustically optimized to the Project site, and placing other mechanical equipment inside sound-attenuating (reducing) buildings.

Contents

Appendices

Tables

Figures (located at the end of text)

Acronyms and Abbreviations

Acronym	Description
ANSI	American National Standards Institute
dB	decibel
dBA	decibel (A-weighted scale)
ISO	International Organization for Standardization
IT	information technology
L_{ai}	A-weighted L_{eq} with high-frequency noise above 1 kilohertz removed.
L_{eq}	equivalent sound pressure level
L_n	percentile sound pressure level
MW	megawatt
Project	Project Tango

1. Introduction

PBA Holdings, Inc., retained Jacobs to conduct a preliminary noise impact assessment that systematically evaluates potential noise impacts resulting from the preliminary test fit design of Project Tango (Project), a proposed data center with an information technology (IT) capacity of 600 megawatts in Loxahatchee, Palm Beach County, Florida. The Tango site is designed to house multiple data centers containing IT server racks and required support equipment. As part of the design process, Jacobs conducted ambient sound monitoring to document existing sound levels and evaluate the requirements set forth by the Board of County Commissioners of the Department of Planning, Zoning and Building, West Palm Beach, Florida (Board of County Commissioners 2025). Methodologies for conducting the noise assessment include field measurements, mathematical modeling, and scenario analysis.

2. Acoustical Background

Acoustics is the study of sound and noise is defined as unwanted sound. Airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure to create a sound wave. Table 2-1 summarizes key acoustical terms used in this preliminary noise impact assessment.

Table 2-1. Definitions of Acoustical Terms

Term	Definition
Ambient noise level	The composite of noise from all sources near and far. The normal or existing level of environmental noise or sound at a given location. The ambient level is typically defined by the equivalent sound pressure level (L_{eq}).
Sound pressure level decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
A-weighted sound pressure level (dBA)	The sound level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighted filter de-emphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear, and generally correlates well with subjective reactions to environmental sounds. All sound levels in this assessment are A-weighted unless otherwise noted.
Equivalent sound pressure level (L_{eq})	The average A-weighted sound pressure level, on an equal energy basis, during the measurement period.
Percentile sound pressure level (L_n)	The sound pressure level exceeded during n percent of the measurement period, where n is a number between 0 and 100 (e.g., L_{90} represents the sound pressure level that is exceeded during 90 percent of the measurement period).
A-weighted L_{eq} with high-frequency noise above 1 kilohertz removed (L_{ai})	The A-weighted L_{eq} (average sound level) with high-frequency noise above 1 kilohertz removed. Large differences between the A-weighted L_{eq} (LA_{eq}) and the L_{ai} are typically indicative of high-frequency insect noise (crickets, cicadas) or birds chirping. Such sounds may be seasonal and may not provide masking.

The most common metric is the overall A-weighted sound level measurement that has been adopted by regulatory bodies worldwide. The A-weighting network measures sound in a similar fashion to the way in which a person perceives or hears sound.

A-weighted sound levels are typically measured or presented as equivalent sound pressure level (L_{eq}), which is defined as the average noise level, on an equal energy basis for a stated period of time, and is commonly used to measure steady-state sound or noise that is usually dominant. Statistical methods are used to capture the dynamics of a changing acoustical environment. Statistical measurements are typically denoted by L_n, where n represents the percentile of time the sound level is exceeded. The L_{90} is a measurement that represents the noise level that is exceeded during 90 percent of the measurement period (e.g., quietest 6 minutes of a 60-minute measurement). Similarly, the L_{10} represents the noise level exceeded for 10 percent of the measurement period (e.g., loudest 6 minutes of a 60-minute measurement).

Figure 2-1 depicts the relative A-weighted noise levels of common sounds measured in the environment and in industry for various sound levels.

It is also important to note that decibels cannot be directly added arithmetically; that is, 50 decibels on an A-weighted scale (dBA) + 50 dBA does not equal 100 dBA. When two sources of equal level are added together, the result will always be 3 decibels (dB) greater; that is, 50 dBA + 50 dBA = 53 dBA and 70 dBA + 70 dBA = 73 dBA. If the difference between the two sources is 10 dBA, the level (when rounded to the nearest whole decibel) will not increase; that is, 40 dBA + 50 dBA = 50 dBA and 60 dBA + 70 dBA = 70 dBA.

The decrease in sound level caused by distance from any single sound source normally follows the inverse square law; that is, the sound pressure level changes in inverse proportion to the square of the distance from the sound source. In a large open area with no obstructive or reflective surfaces, it is a general rule that at distances greater than approximately the largest dimension of the noise-emitting surface, the sound pressure level from a single source of sound drops off at a rate of 6 dB with each doubling of the distance from the source. Sound energy is absorbed in the air as a function of temperature, humidity, and the frequency of the sound. This attenuation can be up to 2 dB over 1,000 feet. The drop-off rate will also vary based on terrain conditions and the presence of obstructions in the sound's propagation path. These factors are considered in the development of detailed acoustical models.

3. Regulatory Requirements

The Project is located in unincorporated Palm Beach County, Florida. Noise in unincorporated portions of the County is regulated by the *Unified Land Development Code* (Palm Beach County 2025). Noise limitations and prohibitions are stated in Section 4, *Nuisances*, of Chapter E, *Performance Standards* in the Code. Maximum sound levels are established in Section 4.B.2 as follows:

> *2. Maximum Sound Levels a. No person shall operate or cause to be operated any source of sound from any location in such a manner as to create a sound level which exceeds the limits set forth below in Table 5.E.4.B* [reproduced as Table 3-1 in this preliminary noise impact assessment]*, Maximum Sound Levels, for more than ten percent of any measurement period, which period shall not be less than ten minutes. Sound Level Measurement Compliance shall be determined with a Type 2 or equivalent sound level meter using the A-Weighting Scale in accordance with the standards of the American National Standards Institute (ANSI). All measurements shall be made with a sound meter at or within the boundary of the complaining landowner within the property lines of the receiving land.*

As stated in the preceding excerpt, Table 3-1 presents the maximum sound levels established in Section 4.B.2 of the *Unified Land Development Code* (Palm Beach County 2025).

Table 3-1. Maximum Sound Levels

Receiving Land Use Type	Sound Source	Time of Day	Maximum Sound Level	
			USA	RSA
Residential	Fixed mechanical equipment	Any time	60 dB	60 dB
Residential	Permanent generator	See Art. 5.B.1.A.19, Permanent Generators[a]	75 dB	75 dB
Residential	All other sources	7:00 a.m. to 8:00 p.m.	60 dB	55 dB
		8:00 p.m. to 10:00 p.m.	55 dB	50 dB
		10:00 p.m. to 7:00 a.m.	50 dB	50 dB
Commercial Nonresidential	All sources	Any time	70 dB	70 dB
Nonresidential	Permanent generator	See Art. 5.B.1.A.19, Permanent Generators[a]	75 dB	75 dB

Source: Palm Beach County 2025.

Notes:

[a] Art. 5.B.1.A.19 states the maintenance cycle operation of generators as follows: *Generators may be operated for exercising purposes one time per week, excluding Sundays, for a period not exceeding 30 minutes between the hours of 10:00 a.m. to 5:00 p.m.*

RSA = rural service area; USA = urban service area

Section 4.B.1 of the *Unified Land Development Code* includes an additional regulation for noise from construction work, as follows:

> *e. Machinery and Construction Work*
>
> *The operation of any machinery, demolition equipment, construction equipment, excavating equipment, power tool, equipment of a semi-mechanical device, or undertaking construction work which generates excessive noise at the property line of inhabited residential land between the hours of 10:00 p.m. and 7:00 a.m. Construction work other than minor repairs by a homeowner and work permitted to an owner-builder shall be prohibited on Sunday. This restriction shall not prohibit the use of pumps or machinery which, because of their nature and purpose, are required to be in operation 24 hours a day.*

Maximum noise thresholds for the Project data center were established by the Board of County Commissioners during their December 10, 2025, meeting (Board of County Commissioners 2025):

> *2. The maximum noise levels at the receiving residential development to the east shall be a maximum of:*
>
> *a. Fixed Mechanical Equipment: Any time maximum is 60 dB*
>
> *b. Permanent generators: During applicable times of testing and power outages Testing shall be during the day between the hours of 10 am and 2 pm. Maximum is 75 dB.*
>
> *c. All sources:*
>
> *7:00 am to 8:00 pm 60 dB*
> *8:00 pm to 10:00 pm 55 dB*
> *10:00 pm to 7:00 am 50 dB*

4. Ambient Sound Level Monitoring

Baseline noise measurements were conducted during January and February both onsite and west of the Arden community. Offsite measurements were conducted on the east side of the levee adjacent to the Arden residential development and the south side of the levee adjacent to the Loxahatchee National Wildlife Refuge. Onsite measurements were collected along the northern property boundary of the Project site. Both short- and long-term measurements were collected. The following sections describe the results of the data collection beginning with short-term measurements conducted adjacent to the residential development; short-term measurements were established as a requirement of the Board of County Commissioners during their December 10, 2025, meeting (Board of County Commissioners 2025).

4.1 Offsite Monitoring

Baseline noise measurements at the property line of the receiving residential development east of the site were performed in accordance with the requirements set forth in Board of County Commissioners 2025. Short-term (15-minute) ambient noise was monitored over multiple days and nights from February 10 through 13, 2026, at the monitoring locations depicted on Figure 4-1. The monitoring equipment was placed at representative locations near the neighborhood to the east of the Project at 400-foot intervals (ST1 through ST13) and measurements were collected during various times over a 24-hour period to include day, evening, and nighttime hours. Additional day and evening monitoring was conducted at the wildlife area south of the Project (ST14 and ST15). The monitoring was conducted with American National Standards Institute (ANSI) S1.4 Type 1 and Type 2 sound level meters. The sound level metrics reported are LA_{eq}, LA_{10}, LA_{50}, and LA_{90}, defined as the average A-weighted sound pressure level, where the LA_{eq} is reported on an equal energy basis and the LA_{10}, LA_{50}, and LA_{90} are the sound level exceeding 10, 50, and 90 percent of the measurement interval duration, respectively. The measurement results are tabulated in Table 4-1 and presented graphically on Figures 4-2 through 4-5. Sound levels fluctuated throughout the monitoring period with higher levels generally found closer to the highway (Southern Boulevard).

Table 4-1. Short-Term (15-minute) Measurement Data – Offsite

Location	Measurement Start Date and Time	LA_{eq} (dBA)	LA_{10} (dBA)	LA_{50} (dBA)	LA_{90} (dBA)
ST1	2/10/2026 5:32 PM	74	78	67	57
ST1	2/10/2026 9:12 PM	68	73	60	50
ST1	2/10/2026 10:01 PM	68	73	59	48
ST2	2/10/2026 5:09 PM	61	64	60	56
ST2	2/10/2026 9:31 PM	56	58	53	46
ST2	2/10/2026 10:20 PM	54	57	53	47
ST3	2/10/2026 5:26 PM	57	60	56	51
ST3	2/10/2026 10:17 PM	53	56	52	47
ST3	2/11/2026 8:13 PM	56	59	55	51
ST4	2/10/2026 5:44 PM	54	57	53	50

Location	Measurement Start Date and Time	LA_{eq} (dBA)	LA_{10} (dBA)	LA_{50} (dBA)	LA_{90} (dBA)
ST4	2/10/2026 9:37 PM	53	55	51	48
ST4	2/10/2026 10:00 PM	53	56	52	48
ST5	2/10/2026 5:59 PM	54	57	52	49
ST5	2/10/2026 9:17 PM	52	55	51	48
ST5	2/12/2026 12:19 AM	56	57	56	55
ST6	2/11/2026 1:02 PM	50	51	49	46
ST6	2/11/2026 8:38 PM	55	56	54	53
ST6	2/12/2026 12:38 AM	55	56	55	54
ST6	2/12/2026 5:48 PM	55	57	53	50
ST7	2/11/2026 1:22 PM	49	51	48	46
ST7	2/11/2026 9:03 PM	54	55	54	52
ST7	2/12/2026 12:58 AM	54	55	54	53
ST7	2/12/2026 6:07 PM	56	58	54	52
ST8	2/11/2026 1:41 PM	57	54	50	48
ST8	2/11/2026 9:24 PM	54	56	54	52
ST8	2/12/2026 1:17 AM	53	54	53	52
ST9	2/12/2026 5:54 PM	56	58	52	50
ST9	2/12/2026 8:23 PM	49	50	41	39
ST9	2/13/2026 12:12 AM	56	57	56	54
ST9	2/13/2026 1:26 PM	51	53	50	48
ST10	2/12/2026 6:14 PM	56	59	54	52
ST10	2/12/2026 8:42 PM	47	50	41	39
ST10	2/13/2026 12:32 AM	57	58	56	54
ST11	2/11/2026 1:12 PM	52	54	51	48
ST11	2/11/2026 8:25 PM	55	56	54	53
ST11	2/12/2026 1:07 AM	55	56	55	54
ST12	2/11/2026 1:31 PM	55	53	51	49

Location	Measurement Start Date and Time	LA_{eq} (dBA)	LA_{10} (dBA)	LA_{50} (dBA)	LA_{90} (dBA)
ST12	2/11/2026 8:45 PM	56	58	56	55
ST12	2/12/2026 12:48 AM	57	58	56	55
ST13	2/11/2026 1:49 PM	53	55	52	51
ST13	2/11/2026 9:04 PM	56	57	56	55
ST13	2/12/2026 12:30 AM	55	57	55	54
ST14	2/12/2026 9:06 PM	56	58	55	51
ST14	2/13/2026 12:50 PM	60	64	58	52
ST15	2/12/2026 4:56 PM	62	64	61	57
ST15	2/12/2026 8:15 PM	56	59	54	48

Longer-term continuous monitoring was conducted over multiple days and nights from January 12 through 15, 2026, at monitoring locations along the eastern side of the levee (M2, M3, and M4 shown on Figure 4-1). The monitoring was conducted with ANSI S1.4 Type 1 (precision) sound level meters. Photographs of the monitoring equipment are included in Appendix A. The sound level metrics reported are LA_{eq} and LA_{90}, where LA_{eq} is defined as the average A-weighted sound pressure level on an equal energy basis for each hour period, and LA_{90} is the sound level exceeded 90 percent of each hour (for 54 minutes of every 60-minute period, the sound level is higher than the LA_{90}). Results are tabulated in Table B-1 of Appendix B and presented graphically for monitoring locations M2, M3, and M4 on Figures 4-6, 4-7, and 4-8, respectively.

Sound levels fluctuated throughout the period and were also noted to increase toward the end of the week as a cold front approached, and additional gas turbines may have started operations. To assess the impact of biological/insect noise on the measurements, high-frequency noise above 1 kilohertz was removed from the average sound levels to obtain the L_{ai}. Large differences between the A-weighted L_{eq} (LA_{eq}) and the L_{ai} are typically indicative of high-frequency insect noise (crickets, cicadas) or birds chirping. Such sounds may be seasonal. Monitoring locations M2 and M4 show the LA_{eq} to be about the same as the L_{ai}, indicating minimal effect from biological noise outside of a few measurements at M2. However, there is a greater divergence between LA_{eq} and the L_{ai} at M3, suggesting more pronounced impacts from insects or birds chirping in the bushes.

Regulatory thresholds at the receiving residential development for sources, fixed mechanical equipment, and permanent generators are also included on the graphs, for comparison. The regulatory threshold for sources varies over time and is depicted based on the measurement hour reported. Longer-term monitoring results show general agreement with short-term measurements conducted during February.

4.2 Onsite Monitoring

Short-term (15-minute) daytime measurements were conducted along the northern property boundary over multiple days and nights from January 12 through 15, 2026, at the monitoring locations depicted on Figure 4-1. Photographs of the monitoring equipment are included in Appendix A. The monitoring was conducted with ANSI S1.4 Type 1 (precision) sound level meters. The sound level metrics reported are LA_{eq}, LA_{10}, LA_{50}, and LA_{90}, as presented in Table 4-2.

Table 4-2. Short-Term (15-minute) Measurement Data – Onsite

Location	Measurement Start Date and Time	LA_{eq} (dBA)	LA_{10} (dBA)	LA_{50} (dBA)	LA_{90} (dBA)
M1	1/14/2026 11:08 AM	69	70	68	67
M5	1/14/2026 9:57 AM	57	57	57	56
M6	1/14/2026 10:19 AM	60	61	60	59
M7	1/14/2026 10:44 AM	65	66	65	64

The measurement dataset was collected from February 10 through 13, 2026, at a continuous monitor located at LT1 along the northern Project boundary (Figure 4-1). The sound level metrics reported are LA_{eq}, LA_{10}, LA_{50}, and LA_{90}; they are tabulated in Table B-2 (Appendix B) and presented graphically on Figure 4-9.

5. Operational Noise Levels

The data center will contain IT server racks and required support equipment located within Project buildings. The thermal loads generated by IT equipment at the proposed data center facility will be cooled via a dry cooler fan-based system. The primary equipment emitting sound to the outdoors during normal operations has been identified as the dry cooler, one for each of the five buildings. Secondary sources are one air-cooled chiller per building and four substation transformers.

An acoustical model of the proposed facility was developed using source input levels derived from data supplied by manufacturers, the design team, and information found in the technical literature. The sound levels presented represent the anticipated steady-state level from the facility with essentially all equipment operating.

Standard acoustical engineering methods were used in the noise analysis. The acoustical model known as Cadna/A, developed by DataKustik GmbH of Munich, Germany (DataKustik 2025), is a sophisticated tool that enables users to fully model complex industrial plants. The sound propagation factors considered in the model have been adopted from International Organization for Standardization (ISO) 9613-2 *Acoustics—Sound Attenuation During Propagation Outdoors* (Part 2: General Method of Calculation). Atmospheric absorption was estimated for conditions of 10 degrees Celsius and 70 percent relative humidity (conditions that favor propagation) and computed in accordance with ISO 9613-1 *Acoustics—Sound Attenuation During Propagation Outdoors* (Part 1: Calculation of the Absorption of Sound by the Atmosphere). The model divides the proposed facility into a list of individual sound sources representing each piece of sound-emitting equipment. The sound power levels representing the standard performance of each of these components are assigned based on data supplied by manufacturers or information found in the technical literature. Using these sound power levels as a basis, the model calculates the sound pressure level that would occur at each receptor from each source after losses from distance, air absorption, and other factors are considered. The sum of the individual levels is the total plant level at the modeling point.

The ISO 9613-2 method is based on an omnidirectional downwind condition. That is, the sound prediction algorithms assume every point at which sound level is calculated is downwind of all sound-emitting equipment simultaneously. In essence, the prediction assumes each receiver or prediction point is a “black hole” and the wind is blowing from each source and into this black hole. While this is physically impossible, the ISO 9613-2 model has been widely and successfully used to develop acoustical models for power facilities. Numerous agencies and regulatory bodies rely on ISO 9613-2 modeling. The ISO 9613-2

parameters used in this assessment are a receptor height of 4 meters and hard ground (G = 0, where G may vary between 0 for hard pavement or water and 1 for acoustically absorptive ground such as plowed earth).

The sound-emitting equipment consists of dry cooler modules, air-cooled chillers, and four 180-megavolt-ampere substation transformers. The dry cooler modeling was based on Kelvion Mega-Bay modules. Each Mega-Bay module consists of three fans and has a sound pressure level of approximately 70 dBA at 3 feet. A sound barrier that was approximately 6 feet taller than the substation transformers was also included in the modeling. Table 5-1 provides the modeled octave band sound power levels for the equipment.

Table 5-1. Equipment Octave Band Sound Power Levels

	Octave Band Sound Power Leve (dB, Unweighted)									Overall	
Equipment	31.5	63	125	250	500	1000	2000	4000	8000	dBA	Quantity
Dry Cooler Fan Bay	94	96	94	89	86	83	75	71	67	88	36 bays per 100-MW DC building, 54 bays per 150-MW DC building
Air-Cooled Chiller	N/A	93	98	99	100	100	91	84	82	103	1 per DC building
Substation Transformer	99	105	107	102	102	96	91	86	79	102	4

Notes:

The Project consists of three 100-megawatt (MW) data center (DC) buildings and two 150-MW DC buildings.

N/A = not applicable

As is typical at this stage of a project, these data are representative and detailed vendor specifications will ultimately be developed to ensure the facility complies with the applicable requirements. Sound power level data comprise one form of data used in acoustical models to predict sound pressure levels and are not representative of what one would directly measure or hear.

The operational sound pressure levels (i.e., what one would directly measure or hear) are presented on Figure 5-1. The figure illustrates how sound levels decrease with increasing distance from the Project. The resulting preliminary predicted Project sound level at the nearest residence is 45 dBA. The predicted Project sound levels fall within the range of measured existing levels at M2 and M3 (representative of nearest residences) and below expected regulatory thresholds (Figures 4-6 through 4-8).

6. Conclusion

This preliminary noise impact assessment documents predicted sound levels during Project operation based on the field measurements, mathematical modeling, and equipment scenarios described herein. The operational sound model was developed based on the ISO 9613-2 standard for outdoor propagation. As is typical at this stage of a project, these data are representative and detailed vendor specifications will ultimately be developed to ensure the facility complies with the applicable requirements. Proposed noise control measures to minimize sound levels during facility operation include placing sound barriers adjacent to the substation transformers and implementing low noise design features. Low noise design features include, for example, locating equipment on the western portion of the site, selecting outdoor cooling equipment that is acoustically optimized to the Project site, and placing other mechanical equipment inside sound-attenuating (reducing) buildings. Additional sound minimization measures will be considered as detailed design progresses. Based on the current design, the predicted Project sound levels

are less than the regulatory requirements and fall within the range of measured existing sound levels at locations representative of nearest residences.

7. References

Board of County Commissioners. 2025. *Amendments to the Agenda.* Zoning Hearing. Department of Planning, Zoning and Building, West Palm Beach, Florida. December 10.

DataKustik GmbH, Munich, Germany (DataKustik). 2025. Cadna/A. https://www.datakustik.com/products/cadnaa/cadnaa.

Florida Department of Transportation (FDOT). 2026. *Highway Traffic Noise*. "Noise Overview: How Highway Traffic Noise is Evaluated." Office of Environmental Management. https://www.fdot.gov/environment/oem-divisions/eng/highway-traffic-noise.

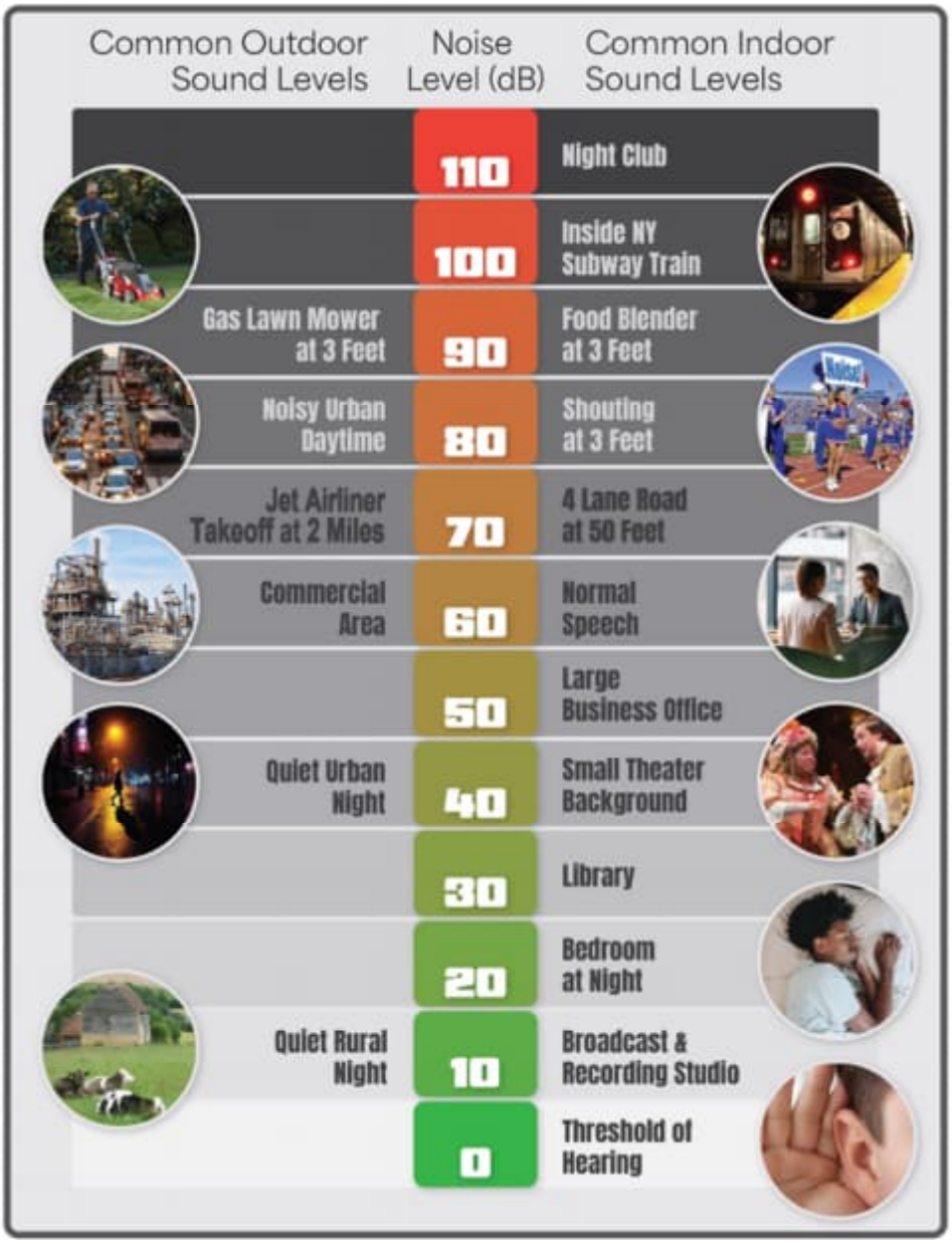
International Organization for Standardization (ISO). 1993. ISO 9613-1, *Acoustics—Sound Attenuation During Propagation Outdoors*. Part 1: Calculation of the Absorption of Sound by the Atmosphere. Geneva, Switzerland.

International Organization for Standardization (ISO). 2024. ISO 9613-2, *Acoustics—Sound Attenuation During Propagation Outdoors*. Part 2: General Method of Calculation. Geneva, Switzerland.

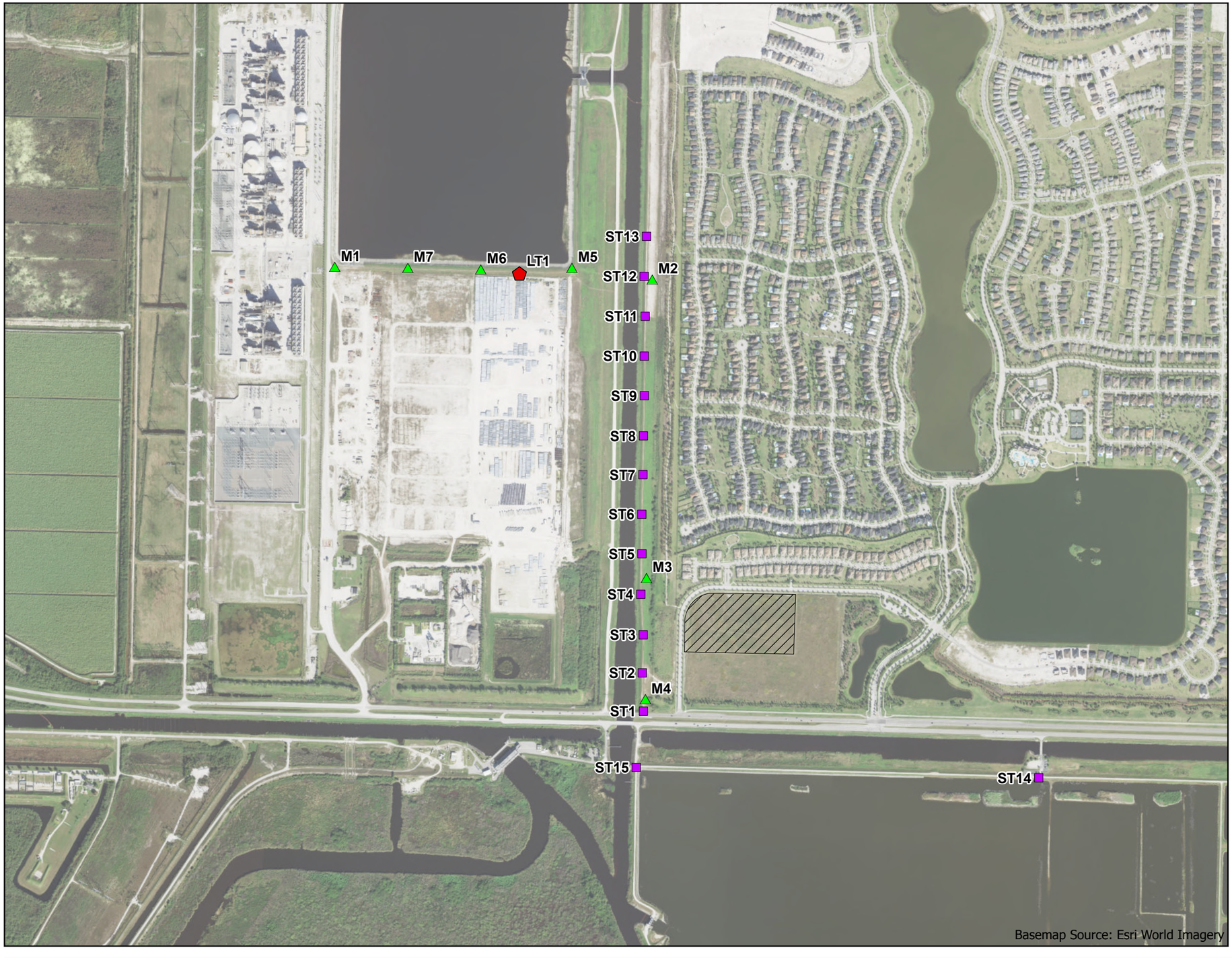
Palm Beach County. 2025. *Unified Land Development Code*. October. https://www.pbcgov.com/uldc/pdf/Entire_ULDC.pdf.

Figures

Figure 2-1. Summary of Typical Sound Levels



Source: Florida Department of Transportation (FDOT) 2026.



LEGEND

- Short-Term Sound Monitoring Location (February)
- Long-Term Sound Monitoring Location (February)
- Sound Monitoring Location (January)
- School

N

0 500 1,000 2,000

Feet

Figure 4-1
Sound Monitoring Locations
Project Tango
Loxahatchee, Florida

Jacobs

LEGEND

- Short-Term Sound Monitoring Location (February)
- School

Notes:
Equivalent sound pressure level (LAeq) values in A-weighted sound pressure level decibels (dBA).
Daytime measurements conducted from 0700 to 2000
Evening measurements conducted from 2000 to 2200
Nighttime measurements conducted from 2200 to 0700
Locations ST6, ST7, ST9 were monitored twice during the daytime. Both results are summarized ##/##.

N

0 500 1,000 2,000
Feet

Figure 4-2
Summary of Sound Pressure Level Measurements at 400-foot intervals (dBA)
Daytime
Project Tango
Loxahatchee, Florida

Jacobs

LEGEND

- Short-Term Sound Monitoring Location (February)
- School

Notes:
Equivalent sound pressure level (LAeq) values in A-weighted sound pressure level decibels (dBA).
Daytime measurements conducted from 0700 to 2000
Evening measurements conducted from 2000 to 2200
Nighttime measurements conducted from 2200 to 0700

N

0 500 1,000 2,000
Feet

Figure 4-3
Summary of Sound Pressure Level Measurements at 400-foot intervals (dBA) Evening
Project Tango
Loxahatchee, Florida

Jacobs

LEGEND

- Short-Term Sound Monitoring Location (February)
- School

Notes:
Equivalent sound pressure level (LAeq) values in A-weighted sound pressure level decibels (dBA).
Daytime measurements conducted from 0700 to 2000
Evening measurements conducted from 2000 to 2200
Nighttime measurements conducted from 2200 to 0700
ST 14 and ST15 were monitored during the day and evening only (day, evening).
NM = Not Measured

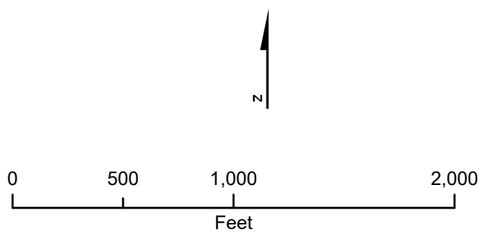


Figure 4-4
Summary of Sound Pressure Level Measurements at 400-foot intervals (dBA)
Nighttime
Project Tango
Loxahatchee, Florida

Jacobs

LEGEND

- Short-Term Sound Monitoring Location (February)
- School

Notes:
Equivalent sound pressure level (LAeq) values in A-weighted sound pressure level decibels (dBA).
Daytime measurements conducted from 0700 to 2000
Evening measurements conducted from 2000 to 2200
Nighttime measurements conducted from 2200 to 0700
Locations ST6, ST7, ST9 were monitored twice during the daytime. Both results are summarized ##/##.
ST 14 and ST15 were monitored during the day and evening only (day, evening).
NM = Not Measured

N

0 500 1,000 2,000
Feet

Figure 4-5
Summary of Sound Pressure Level Measurements at 400-foot intervals (dBA) Summary
Project Tango
Loxahatchee, Florida

Jacobs

Figure 4-6. Time Series of Measured Sound Pressure Levels at M2

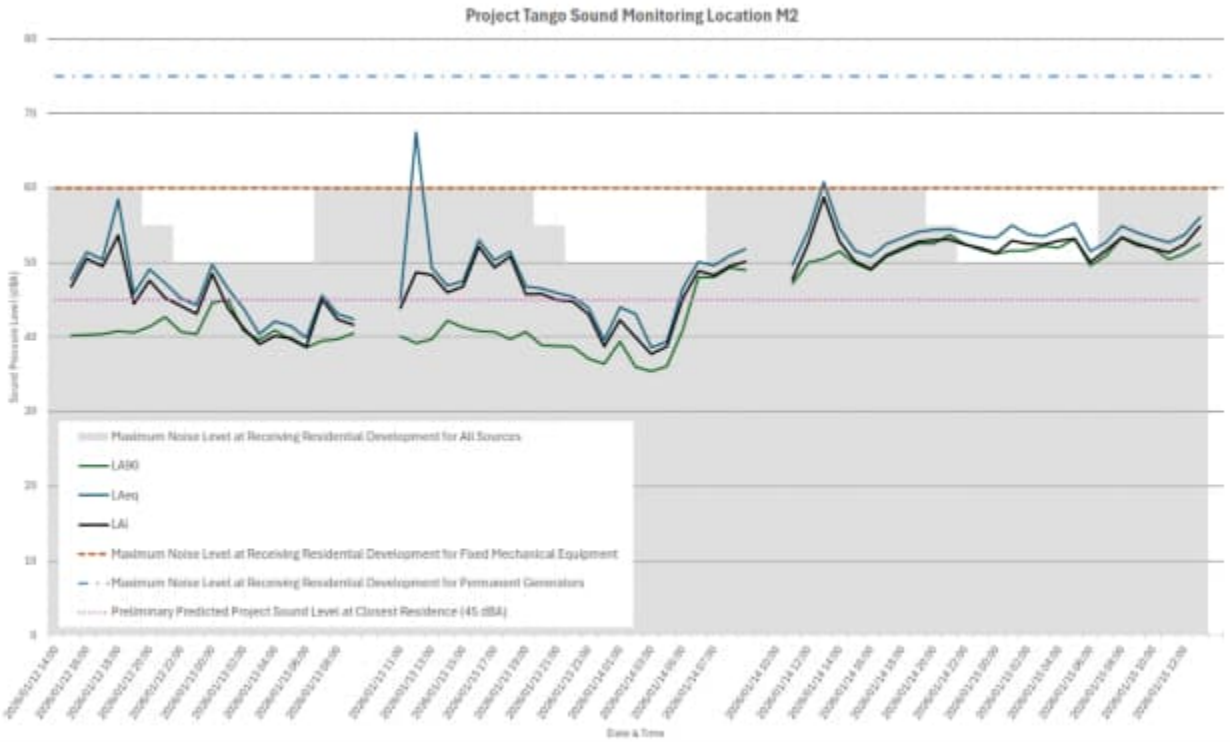


Figure 4-7. Time Series of Measured Sound Pressure Levels at M3

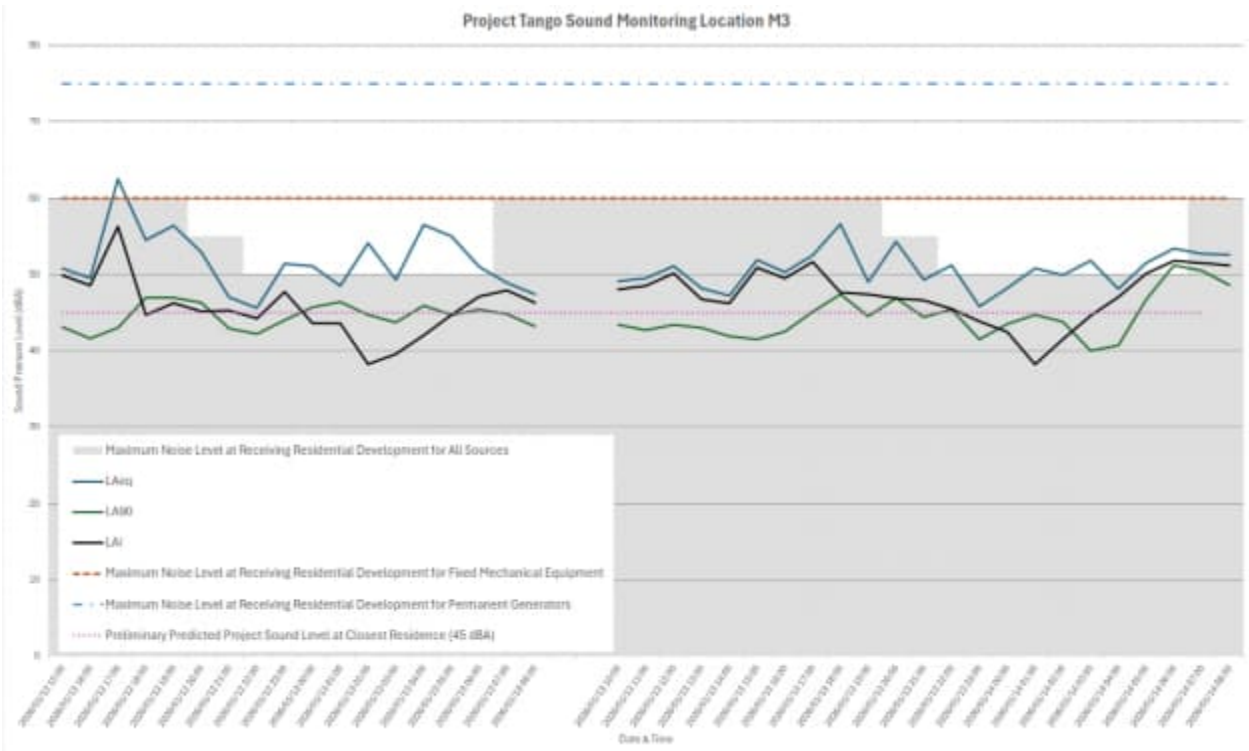


Figure 4-8. Time Series of Measured Sound Pressure Levels at M4

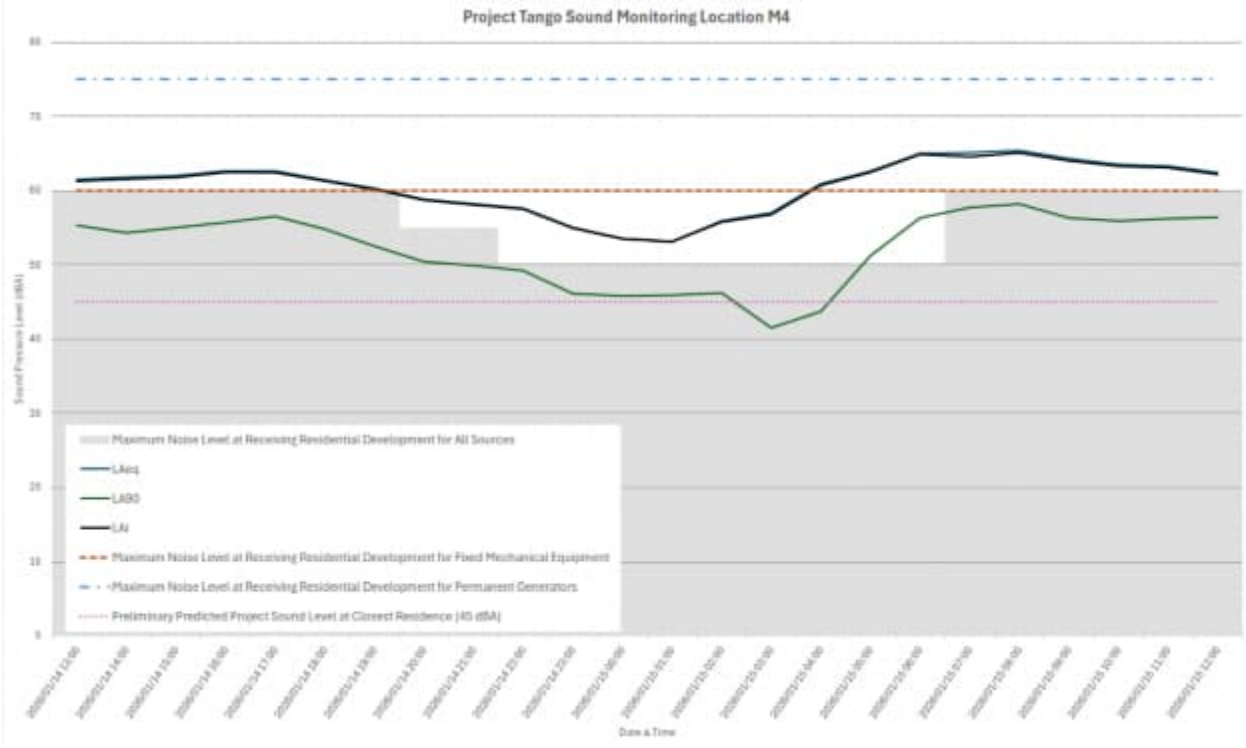
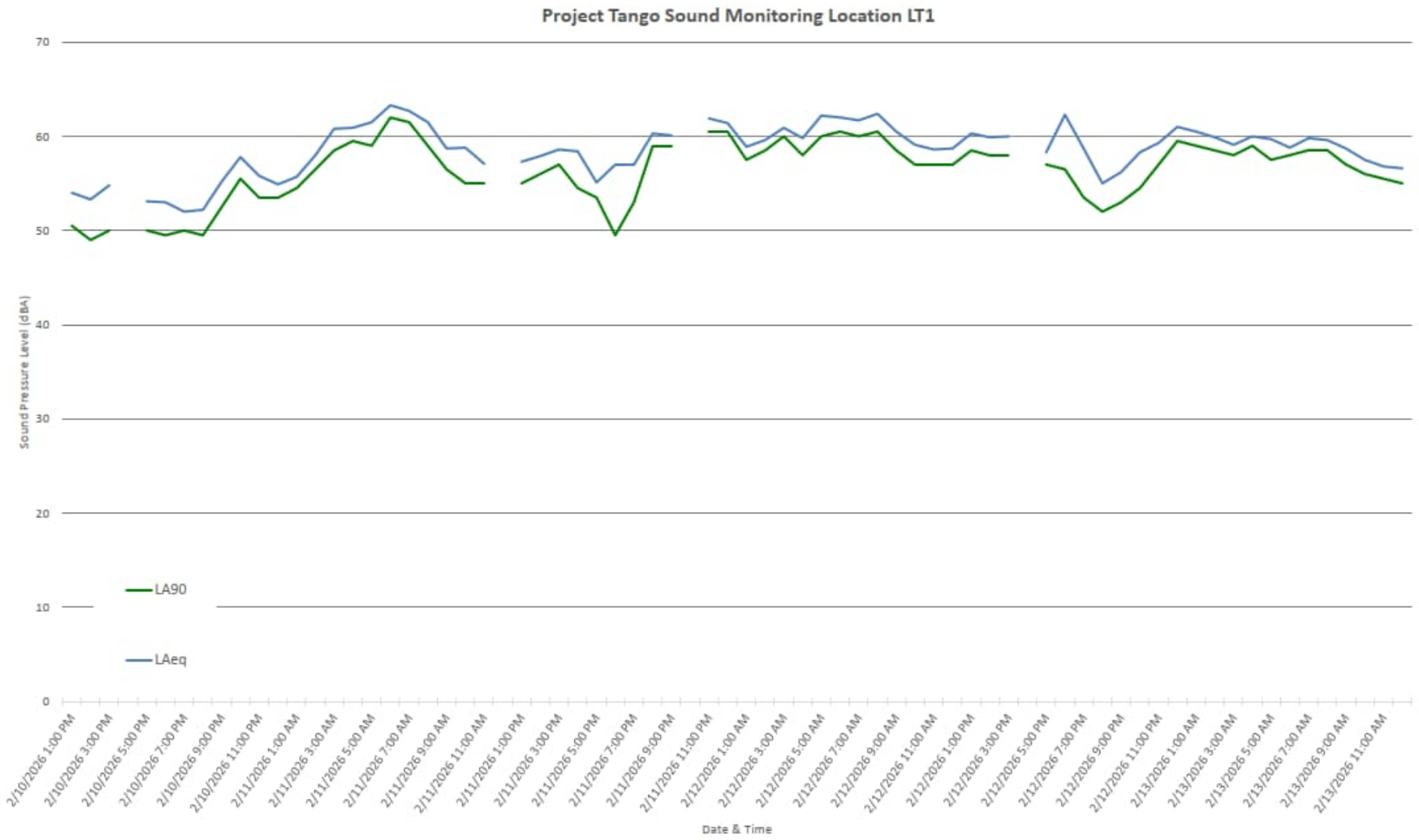
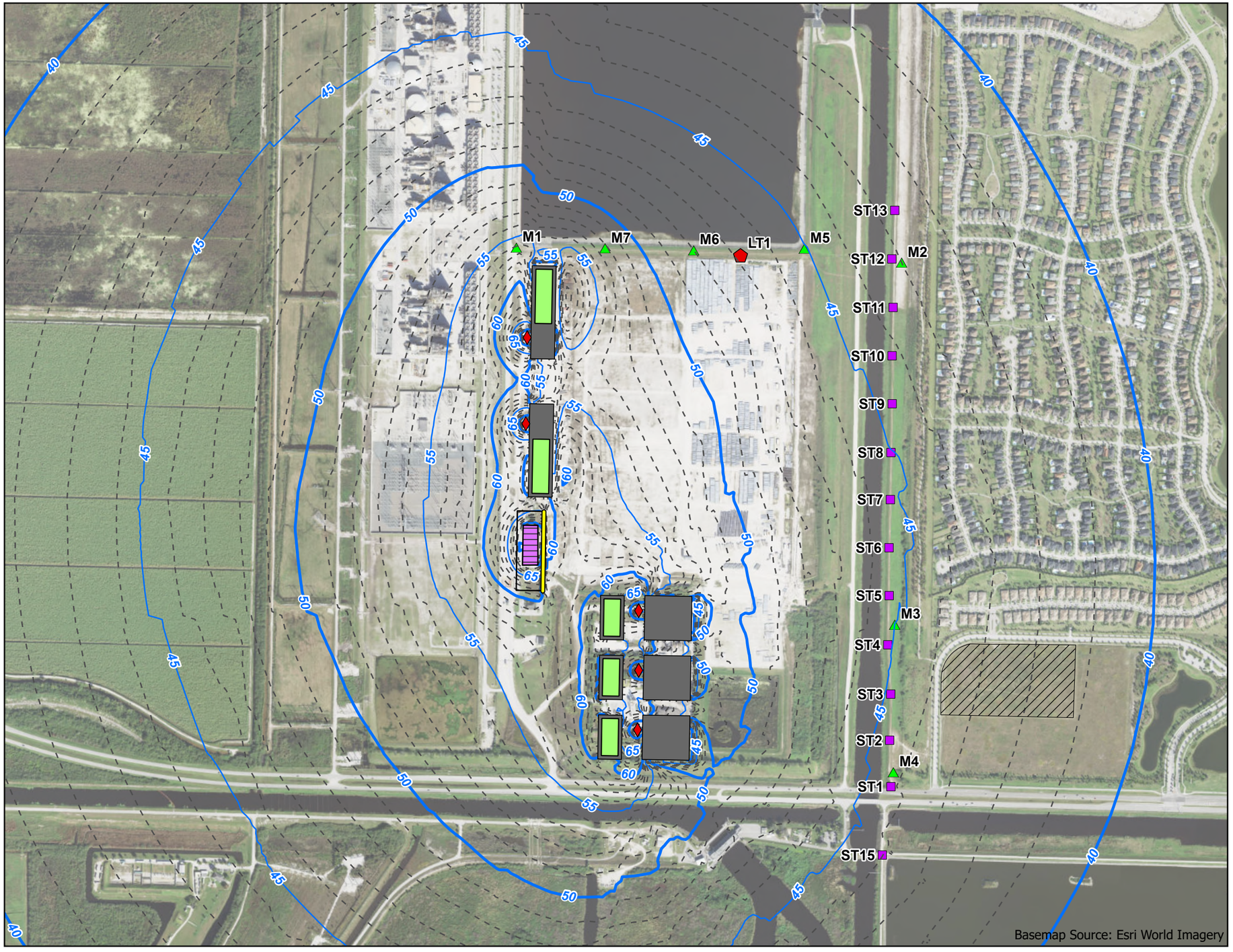


Figure 4-9. Time Series of Measured Sound Pressure Levels at LT1





LEGEND

Predicted Sound Pressure Level (dBA)

- 10 dBA Contour Interval
- 5 dBA Contour Interval
- 1 dBA Contour Interval
- Air-Cooled Chiller
- Dry Coolers
- Four 180-MVA Transformers
- Substation Barrier
- Substation Fenceline
- Building
- School
- Short-Term Sound Monitoring Location (February)
- Long-Term Sound Monitoring Location (February)
- Sound Monitoring Location (January)

Notes:
dBA = decibels on an A-weighted scale
MVA = megavolt-ampere

N

0 300 600 1,200
Feet

Figure 5-1
Predicted Sound Pressure Levels (dBA)
Project Tango
Loxahatchee, Florida

Jacobs

Appendix A
Monitoring Equipment Photographs

Photograph 1: Monitoring Location M1

Photograph 2: Monitoring Location M1_a

Photograph 3: Monitoring Location M2 Looking East

Photograph 4: Monitoring Location M2 Looking West

Photograph 5: Monitoring Location M3 Looking East

Photograph 6: Monitoring Location M3 Looking North

Photograph 7: Monitoring Location M3 Looking West

Photograph 8: Monitoring Location M4

Photograph 9: Monitoring Location M5 Looking North

Photograph 10: Monitoring Location M6

Photograph 11: Monitoring Location M7

Appendix B
Sound Measurement Data

Table B-1. Long-Term Measurement Data – Offsite

Location	Measurement Date and Time	LA_{eq} (dBA)	LA_{10} (dBA)	LA_{50} (dBA)	LA_{90} (dBA)	L_{ai} (dBA)
Location M2						
M2	1/12/2026 2:00 PM	48	49	42	40	47
M2	1/12/2026 3:00 PM	51	54	43	40	51
M2	1/12/2026 4:00 PM	50	54	43	40	49
M2	1/12/2026 5:00 PM	59	49	43	41	54
M2	1/12/2026 6:00 PM	46	46	42	41	44
M2	1/12/2026 7:00 PM	49	44	42	41	48
M2	1/12/2026 8:00 PM	47	48	45	43	45
M2	1/12/2026 9:00 PM	45	44	42	41	44
M2	1/12/2026 10:00 PM	44	43	41	40	43
M2	1/12/2026 11:00 PM	50	49	47	45	48
M2	1/13/2026 12:00 AM	47	48	46	45	44
M2	1/13/2026 1:00 AM	44	46	44	41	41
M2	1/13/2026 2:00 AM	40	41	40	40	39
M2	1/13/2026 3:00 AM	42	43	42	41	40
M2	1/13/2026 4:00 AM	42	42	41	40	40
M2	1/13/2026 5:00 AM	40	41	40	39	39
M2	1/13/2026 6:00 AM	46	42	41	40	45
M2	1/13/2026 7:00 AM	43	42	41	40	42
M2	1/13/2026 8:00 AM	42	44	42	41	42
M2	1/13/2026 10:00 AM	45	46	42	40	44
M2	1/13/2026 11:00 AM	68	50	42	39	49
M2	1/13/2026 12:00 PM	49	51	42	40	48
M2	1/13/2026 1:00 PM	47	50	44	42	46
M2	1/13/2026 2:00 PM	48	49	44	41	47
M2	1/13/2026 3:00 PM	53	55	43	41	52
M2	1/13/2026 4:00 PM	50	54	43	41	49
M2	1/13/2026 5:00 PM	52	52	42	40	51

Location	Measurement Date and Time	LA_{eq} (dBA)	LA_{10} (dBA)	LA_{50} (dBA)	LA_{90} (dBA)	L_{ai} (dBA)
M2	1/13/2026 6:00 PM	47	50	42	41	46
M2	1/13/2026 7:00 PM	47	45	42	39	46
M2	1/13/2026 8:00 PM	46	46	40	39	45
M2	1/13/2026 9:00 PM	45	44	40	39	45
M2	1/13/2026 10:00 PM	44	43	39	37	43
M2	1/13/2026 11:00 PM	40	42	39	36	39
M2	1/14/2026 12:00 AM	44	46	42	39	42
M2	1/14/2026 1:00 AM	43	48	39	36	40
M2	1/14/2026 2:00 AM	39	41	38	35	38
M2	1/14/2026 3:00 AM	39	42	38	36	39
M2	1/14/2026 4:00 AM	47	49	46	41	45
M2	1/14/2026 5:00 AM	50	51	50	48	49
M2	1/14/2026 6:00 AM	50	51	49	48	48
M2	1/14/2026 7:00 AM	51	52	51	49	50
M2	1/14/2026 8:00 AM	52	53	51	49	50
M2	1/14/2026 10:00 AM	50	51	49	47	48
M2	1/14/2026 11:00 AM	54	53	51	50	52
M2	1/14/2026 12:00 PM	61	55	52	51	59
M2	1/14/2026 1:00 PM	55	57	54	52	53
M2	1/14/2026 2:00 PM	52	53	51	50	50
M2	1/14/2026 3:00 PM	51	52	51	49	49
M2	1/14/2026 4:00 PM	53	54	52	51	51
M2	1/14/2026 5:00 PM	53	55	53	52	52
M2	1/14/2026 6:00 PM	54	55	54	53	53
M2	1/14/2026 7:00 PM	54	56	54	53	53
M2	1/14/2026 8:00 PM	55	55	54	54	53
M2	1/14/2026 9:00 PM	54	55	54	53	52
M2	1/14/2026 10:00 PM	54	55	53	52	52
M2	1/14/2026 11:00 PM	53	55	53	51	51

Location	Measurement Date and Time	LA_{eq} (dBA)	LA_{10} (dBA)	LA_{50} (dBA)	LA_{90} (dBA)	L_{ai} (dBA)
M2	1/15/2026 12:00 AM	55	58	54	52	53
M2	1/15/2026 1:00 AM	54	56	53	52	53
M2	1/15/2026 2:00 AM	54	55	53	52	52
M2	1/15/2026 3:00 AM	54	56	54	52	53
M2	1/15/2026 4:00 AM	55	57	55	53	53
M2	1/15/2026 5:00 AM	52	53	51	50	50
M2	1/15/2026 6:00 AM	53	54	52	51	52
M2	1/15/2026 7:00 AM	55	56	55	53	53
M2	1/15/2026 8:00 AM	54	55	54	53	52
M2	1/15/2026 9:00 AM	53	54	53	52	52
M2	1/15/2026 10:00 AM	53	54	53	50	51
M2	1/15/2026 11:00 AM	54	55	53	51	52
M2	1/15/2026 12:00 PM	56	59	55	53	55
Location M3						
M3	1/12/2026 3:00 PM	51	53	45	43	50
M3	1/12/2026 4:00 PM	50	53	44	42	49
M3	1/12/2026 5:00 PM	63	50	46	43	56
M3	1/12/2026 6:00 PM	55	58	49	47	45
M3	1/12/2026 7:00 PM	56	62	51	47	46
M3	1/12/2026 8:00 PM	53	55	48	46	45
M3	1/12/2026 9:00 PM	47	47	45	43	45
M3	1/12/2026 10:00 PM	46	46	44	42	44
M3	1/12/2026 11:00 PM	51	55	46	44	48
M3	1/13/2026 12:00 AM	51	54	49	46	44
M3	1/13/2026 1:00 AM	49	50	48	46	44
M3	1/13/2026 2:00 AM	54	59	50	45	38
M3	1/13/2026 3:00 AM	49	53	46	44	40
M3	1/13/2026 4:00 AM	57	61	51	46	42
M3	1/13/2026 5:00 AM	55	60	48	45	45

Location	Measurement Date and Time	LA_{eq} (dBA)	LA_{10} (dBA)	LA_{50} (dBA)	LA_{90} (dBA)	L_{ai} (dBA)
M3	1/13/2026 6:00 AM	51	54	49	45	47
M3	1/13/2026 7:00 AM	49	52	48	45	48
M3	1/13/2026 8:00 AM	47	50	46	43	46
M3	1/13/2026 10:00 AM	49	51	47	43	48
M3	1/13/2026 11:00 AM	50	51	46	43	49
M3	1/13/2026 12:00 PM	51	54	48	43	50
M3	1/13/2026 1:00 PM	48	52	46	43	47
M3	1/13/2026 2:00 PM	47	50	45	42	46
M3	1/13/2026 3:00 PM	52	54	44	42	51
M3	1/13/2026 4:00 PM	50	54	46	43	49
M3	1/13/2026 5:00 PM	53	53	48	45	52
M3	1/13/2026 6:00 PM	57	60	51	47	48
M3	1/13/2026 7:00 PM	49	50	47	45	47
M3	1/13/2026 8:00 PM	54	58	51	47	47
M3	1/13/2026 9:00 PM	49	51	48	44	47
M3	1/13/2026 10:00 PM	51	54	48	45	45
M3	1/13/2026 11:00 PM	46	49	45	42	44
M3	1/14/2026 12:00 AM	48	51	47	44	42
M3	1/14/2026 1:00 AM	51	53	46	45	38
M3	1/14/2026 2:00 AM	50	55	46	44	41
M3	1/14/2026 3:00 AM	52	55	47	40	45
M3	1/14/2026 4:00 AM	48	52	46	41	47
M3	1/14/2026 5:00 AM	52	54	50	47	50
M3	1/14/2026 6:00 AM	53	55	53	51	52
M3	1/14/2026 7:00 AM	53	54	52	51	51
M3	1/14/2026 8:00 AM	53	54	51	49	51
Location M4						
M4	1/14/2026 1:00 PM	62	65	60	55	61
M4	1/14/2026 2:00 PM	62	65	60	54	62

Location	Measurement Date and Time	LA_{eq} (dBA)	LA_{10} (dBA)	LA_{50} (dBA)	LA_{90} (dBA)	L_{ai} (dBA)
M4	1/14/2026 3:00 PM	62	66	60	55	62
M4	1/14/2026 4:00 PM	63	66	61	56	62
M4	1/14/2026 5:00 PM	63	66	61	57	62
M4	1/14/2026 6:00 PM	61	65	60	55	61
M4	1/14/2026 7:00 PM	60	64	58	53	60
M4	1/14/2026 8:00 PM	59	63	56	50	59
M4	1/14/2026 9:00 PM	58	62	56	50	58
M4	1/14/2026 10:00 PM	58	61	55	49	57
M4	1/14/2026 11:00 PM	55	59	52	46	55
M4	1/15/2026 12:00 AM	54	57	50	46	54
M4	1/15/2026 1:00 AM	53	57	50	46	53
M4	1/15/2026 2:00 AM	56	59	50	46	56
M4	1/15/2026 3:00 AM	57	60	48	42	57
M4	1/15/2026 4:00 AM	61	65	55	44	61
M4	1/15/2026 5:00 AM	63	67	60	51	62
M4	1/15/2026 6:00 AM	65	69	63	56	65
M4	1/15/2026 7:00 AM	65	69	63	58	65
M4	1/15/2026 8:00 AM	65	69	63	58	65
M4	1/15/2026 9:00 AM	64	68	62	56	64
M4	1/15/2026 10:00 AM	64	67	61	56	63
M4	1/15/2026 11:00 AM	63	67	61	56	63
M4	1/15/2026 12:00 PM	62	66	61	56	62

Table B-2. Long-Term Measurement Data – Onsite

Location	Measurement Date and Time	LA_{eq} (dBA)	LA_{10} (dBA)	LA_{50} (dBA)	LA_{90} (dBA)
LT1	2/10/2026 1:00 PM	54	56	53	51
LT1	2/10/2026 2:00 PM	53	55	52	49
LT1	2/10/2026 3:00 PM	55	58	53	50
LT1	2/10/2026 5:00 PM	53	54	52	50
LT1	2/10/2026 6:00 PM	53	54	51	50
LT1	2/10/2026 7:00 PM	52	53	51	50
LT1	2/10/2026 8:00 PM	52	53	51	50
LT1	2/10/2026 9:00 PM	55	57	55	53
LT1	2/10/2026 10:00 PM	58	58	57	56
LT1	2/10/2026 11:00 PM	56	58	56	54
LT1	2/11/2026 12:00 AM	55	56	55	54
LT1	2/11/2026 1:00 AM	56	57	56	55
LT1	2/11/2026 2:00 AM	58	59	58	57
LT1	2/11/2026 3:00 AM	61	63	61	59
LT1	2/11/2026 4:00 AM	61	62	61	60
LT1	2/11/2026 5:00 AM	62	64	61	59
LT1	2/11/2026 6:00 AM	63	65	63	62
LT1	2/11/2026 7:00 AM	63	64	63	62
LT1	2/11/2026 8:00 AM	62	64	62	59
LT1	2/11/2026 9:00 AM	59	61	59	57
LT1	2/11/2026 10:00 AM	59	59	57	55
LT1	2/11/2026 11:00 AM	57	59	57	55
LT1	2/11/2026 1:00 PM	57	59	57	55
LT1	2/11/2026 2:00 PM	58	59	58	56
LT1	2/11/2026 3:00 PM	59	60	59	57
LT1	2/11/2026 4:00 PM	58	61	58	55
LT1	2/11/2026 5:00 PM	55	57	55	54
LT1	2/11/2026 6:00 PM	57	57	54	50
LT1	2/11/2026 7:00 PM	57	59	57	53

Location	Measurement Date and Time	LA_{eq} (dBA)	LA_{10} (dBA)	LA_{50} (dBA)	LA_{90} (dBA)
LT1	2/11/2026 8:00 PM	60	62	60	59
LT1	2/11/2026 9:00 PM	60	61	60	59
LT1	2/11/2026 11:00 PM	62	63	62	61
LT1	2/12/2026 12:00 AM	61	63	61	61
LT1	2/12/2026 1:00 AM	59	60	59	58
LT1	2/12/2026 2:00 AM	60	61	60	59
LT1	2/12/2026 3:00 AM	61	62	61	60
LT1	2/12/2026 4:00 AM	60	62	60	58
LT1	2/12/2026 5:00 AM	62	64	62	60
LT1	2/12/2026 6:00 AM	62	63	62	61
LT1	2/12/2026 7:00 AM	62	63	62	60
LT1	2/12/2026 8:00 AM	62	64	62	61
LT1	2/12/2026 9:00 AM	61	62	61	59
LT1	2/12/2026 10:00 AM	59	61	59	57
LT1	2/12/2026 11:00 AM	59	60	59	57
LT1	2/12/2026 12:00 PM	59	61	59	57
LT1	2/12/2026 1:00 PM	60	62	60	59
LT1	2/12/2026 2:00 PM	60	62	60	58
LT1	2/12/2026 3:00 PM	60	62	60	58
LT1	2/12/2026 5:00 PM	58	60	58	57
LT1	2/12/2026 6:00 PM	62	66	60	57
LT1	2/12/2026 7:00 PM	59	61	55	54
LT1	2/12/2026 8:00 PM	55	56	55	52
LT1	2/12/2026 9:00 PM	56	58	56	53
LT1	2/12/2026 10:00 PM	58	60	58	55
LT1	2/12/2026 11:00 PM	59	61	59	57
LT1	2/13/2026 12:00 AM	61	63	61	60
LT1	2/13/2026 1:00 AM	61	62	60	59
LT1	2/13/2026 2:00 AM	60	61	60	59
LT1	2/13/2026 3:00 AM	59	61	59	58

Location	Measurement Date and Time	LA_{eq} (dBA)	LA_{10} (dBA)	LA_{50} (dBA)	LA_{90} (dBA)
LT1	2/13/2026 4:00 AM	60	61	60	59
LT1	2/13/2026 5:00 AM	60	62	59	58
LT1	2/13/2026 6:00 AM	59	60	59	58
LT1	2/13/2026 7:00 AM	60	61	60	59
LT1	2/13/2026 8:00 AM	60	61	60	59
LT1	2/13/2026 9:00 AM	59	60	59	57
LT1	2/13/2026 10:00 AM	58	59	58	56
LT1	2/13/2026 11:00 AM	57	58	57	56
LT1	2/13/2026 12:00 PM	57	58	56	55