

July 29, 2022

Deputy Chief Paul Lasiewicki
Flagstaff Police Department – City of Flagstaff
911 E Sawmill Road
Flagstaff, AZ 86001

Subject: City Nuisance Noise Ordinance – Noise Study and Recommendations – City of Flagstaff, AZ

Dear Deputy Chief Lasiewicki:

MD Acoustics, LLC (MD) has completed a baseline noise study in the City of Flagstaff, AZ. This study evaluates noise emanating from 1) vehicle noise and 2) commercially-zoned uses to residential uses. The noise levels were measured at over forty (40) locations at different times of the day and on different days of the week to provide information regarding the existing noise levels at these locations. Additional recommendations have been provided to further guide policy-makers.

1.0 Assessment Overview

The focus of this study is to evaluate the baseline noise levels at various receptor sites pre-determined by MD and the City of Flagstaff Police due to 1) vehicle noise and 2) commercially-zoned uses adjacent to residential uses. This assessment also provides MD's recommendations to provide guidance on noise ordinance policies that are enforceable using industry best practices. A location map is provided in Exhibit A, and a glossary of Acoustical Terms is located in Appendix A.


2.0 Study Method and Procedure

MD has conducted a baseline noise survey at forty-three (43) locations within the City limits. MD worked in conjunction with the City to select the locations measured. Measurements were performed to evaluate the typical sound levels at roadway intersections, parks, restaurants/bars, other commercial uses, near passing trains, and at residential uses.

Prior to conducting the readings, MD and the City developed a noise monitoring plan which MD followed and conducted the readings during the agreed-upon time of day. MD measured both daytime and nighttime noise levels (per the City's requested time of day) as well as noise levels during periods of typical traffic patterns. Each measurement is 5 minutes in duration and measured the second-by-second sound level over the 5-minute duration. The measurements included the A-weighted and C-weighted noise levels, as well as several other metrics common to the noise measurement industry. MD documented the sources of the sound being recorded and has provided field notes that describe the environmental conditions as is standard industry practice. Measurements were performed at different times and on different days to get a sense of the existing noise levels.

Exhibit A shows the Locations Measured (map with pins), and Appendix B shows the entire list of the measurement locations selected as well as field sheets for the noise measurements.



 = 5-min measurement location

3.0 Results

In order to get a sense of the existing noise levels in the City of Flagstaff, MD measured the noise level at Parks, at Traffic intersections, in Residential areas, and at Commercial uses. The site number is provided to allow coordination between the tables and the respective field sheets contained in Appendix B. The day, date, and time of the measurements are provided as well. This section provides the equivalent noise levels (Leq) in both A-weighted (dBA) and C-weighted levels (dBC).

3.1 Parks

Table 1 shows the measurement results at the parks measured during the baseline survey. Exhibit B shows the

Table 1: Park Noise Measurements

Type of usage	Site #	Measurement Location	Date	Time	LAeq (dBA)	LCeq (dBC)
Park	ST 1	Wheeler Park during Festival (Busy Day)	Sat 6/4/22	3:41 PM	74.0	87.4
Park	ST 2	Wheeler Park (Idle Day)	Tue 6/7/22	10:41 AM	59.2	69.6
Park	ST 11	Thorpe Park (Idle)	Tue 6/14/22	11:09 AM	59.3	74.1
Park	ST 14	Mars Hill	Tue 6/14/22	10:55 AM	45.0	57.3
Park	ST 17	Heritage Square (Idle Day)	Tue 6/7/22	10:55 AM	55.1	72.0
Park	ST 18	Heritage Square during show (Busy Day)	Sat 6/4/22	3:54 PM	67.0	81.4
Park	ST 42	Foxglenn Park (Idle Day)	Sat 6/4/22	11:36 AM	57.8	67.9


As shown in Table 1, the noise level at Wheeler Park both during the Hullabaloo Festival and after the Hullabaloo Festival. During the Festival, the sound level was 74 dBA and 87 dBC; the Tuesday following the Festival, the noise level measured 59 dBA and 70 dBC.

At Heritage Park, the noise levels were measured during a show on a Saturday afternoon and also on an idle Tuesday morning. The noise levels during the show were 67 dBA and 81 dBC, and the noise levels when there was no performance were 55 dBA and 72 dBC.

The noise levels at Thorpe Park and Foxglenn Park were similar: 59 and 58 dBA, respectively. The noise levels were significantly quieter at Mars Hill, measuring only 45 dBA.

Exhibit B
Location Map – Park Noise Measurements



 = 5-min measurement location

3.2 Traffic Noise

The City of Flagstaff is home to several major crossroads, including Historic Route 66, Interstate 40 (I-40), and the BNSF Railroad Tracks. Traffic noise was measured at fourteen (14) intersections to determine the existing noise levels due to traffic noise throughout the City. Table 2 summarizes the measurement results, and Exhibit C shows the measurement location map.

Table 2 : Traffic Noise Measurements

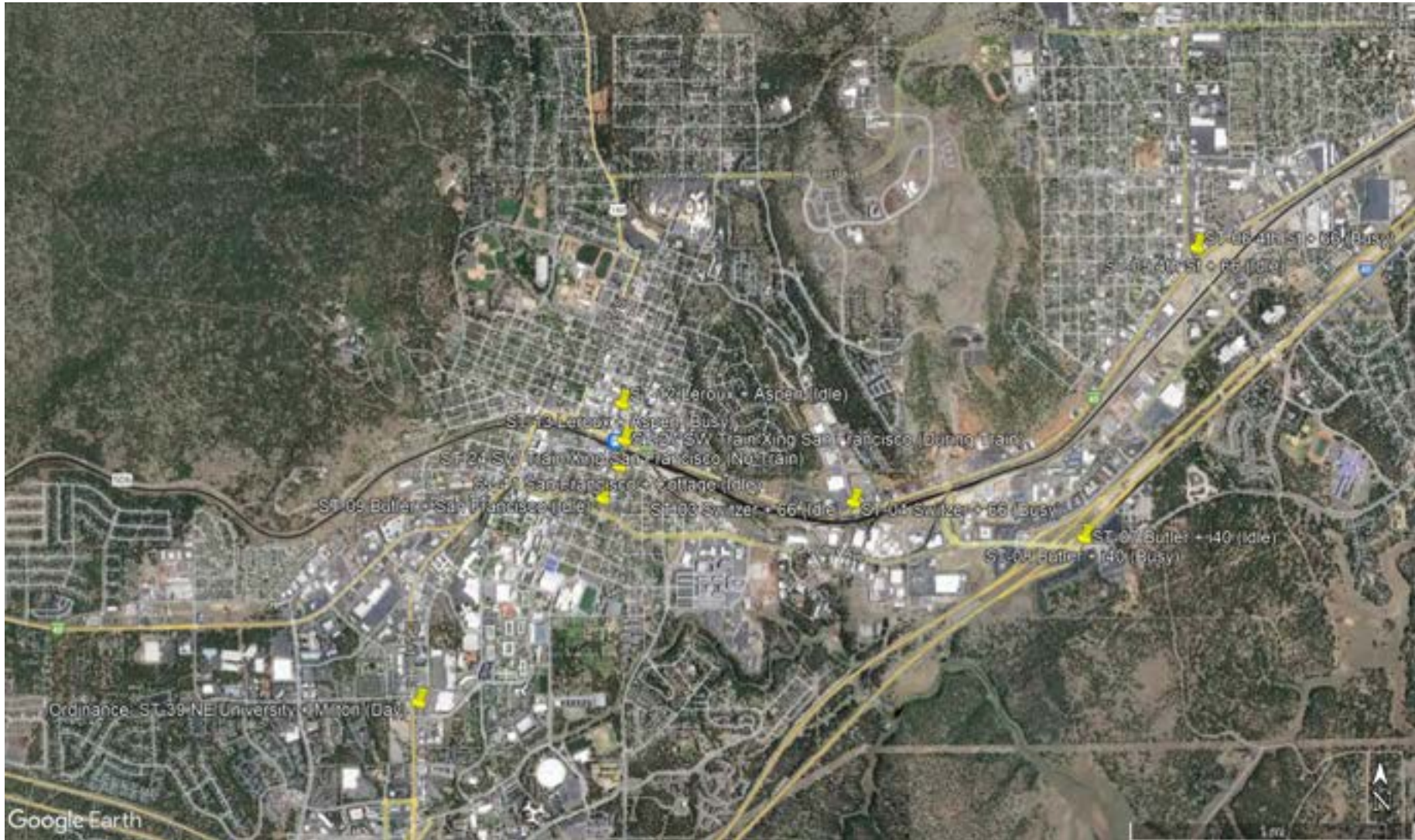
Type of usage	Site #	Measurement Location	Date	Time	LAeq (dBA)	Lceq (dBC)
Traffic	ST 3	Switzer + 66 (Idle Day)	Wed 6/8/22	10:50 AM	73.2	79.5
Traffic	ST 4	NW Switzer + 66 (Busy Day)	Mon 6/20/22	5:04 PM	74.4	80.0
Traffic	ST 5	NE Corner 4 th St + 66 (Idle Day)	Wed 6/8/22	10:29 AM	70.4	79.1
Traffic	ST 6	NE Corner 4 th St + 66 (Busy Day)	Mon 6/20/22	4:46 PM	70.2	80.0
Traffic	ST 7	SE Corner I-40 E + Butler (Idle Day)	Wed 6/8/22	10:12 AM	73.2	82.7
Traffic	ST 8	SE Corner I-40 E + Butler (Busy Day)	Mon 6/20/22	5:17 PM	73.2	85.4
Traffic	ST 9	W Bulter + San Francisco (Busy)	Wed 6/15/22	12:32 PM	67.6	78.4
Traffic	ST 10	W Bulter + San Francisco (Idle)	Wed 6/15/22	4:56 PM	69.7	80.4
Traffic	ST 12	NW Leroux + Aspen (Idle Day)	Tue 6/7/22	11:03 AM	60.7	74.2
Traffic	ST 13	NW Leroux + Aspen (Busy Day)	Sat 6/4/22	4:02 PM	68.8	75.4
Traffic	ST 24	SW Train Crossing San Francisco (No Train)	Wed 6/15/22	1:01 PM	57.3	70.3
Traffic	ST 27	SW Train Crossing San Francisco – (During Train)	Sat 6/4/22	3:19 PM	79.2	91.9
Traffic	ST 40	SW Riordan Rd + Milton	Wed 6/8/22	11:59 AM	69.5	79.9
Traffic	ST 41	NE Corner San Fran + Cottage (Idle Day)	Wed 6/15/22	12:53 PM	66.9	77.0


Noise levels were measured during a peak time (between 4 and 6 PM) and an off-peak time (10 AM to 1 PM). Along Route 66, the noise levels measured between 70-75 dBA and between 79 and 80 dBC. Noise measured at the corner of I-40 and Butler was 73 dBA and 83-85 dBC. Noise at the corner of Butler and San Francisco ranged from 68-70 dBA and 78-80 dBC.

Traffic noise along Leroux and Aspen varied by as much as 9 dBA, measuring 61 dBA at 11 am and 69 dBA at 4 PM.

In addition to measuring several roadways, MD measured the noise levels at the San Fransisco Train Crossing during a train crossing and when there was no train. When the train went by, the noise level was 79 dBA, and when there was no train, the noise level was 57 dBA.

Exhibit C
Location Map – Traffic Noise Measurements



 = 5-min measurement location

3.3 Residential Noise

Table 3 shows the results of the residential noise measurements.

Table 3: Residential Uses

Type of usage	Site #	Measurement Location	Date	Time	LAeq (dBA)	LCeq (dBC)
Residential ¹	ST 36	Annex Patio Alley (Idle Day)	Tue 6/7/22	11:49 AM	48.5	62.1
Residential ¹	ST 35	Annex Patio During Concert Alley (Busy Night)	Sat 6/4/22	6:16 PM	55.5	70.2
Residential	ST 47	Cherry Hill Residential	Tue 6/21/22	10:48 AM	47.5	59.6
Residential	ST 37	End of Butler Ave (Idle)	Mon 6/6/22	10:21 AM	39.0	53.5
Residential	ST 43	Jay Lively Residential	Tue 6/21/22	10:34 AM	54.7	62.4
Residential	ST 16	Jim Collen Park (Idle)	Tue 6/14/22	11:41 AM	45.9	58.4
Residential	ST 44	Lake Mary Residential	Tue 6/21/22	11:14 AM	45.7	57.1
Residential	ST 15	Pine Canyon (Construction)	Tue 6/14/22	10:33 AM	62.2	74.0
Residential ¹	ST 31	Southside Tavern Alley (Busy Night)	Sat 6/4/22	10:44 PM	56.6	63.7
Residential ¹	ST 30	Southside Tavern Alley (Idle Day)	Tue 6/7/22	11:25 AM	49.6	60.9
Residential	ST 46	Upper Green Law Residential	Tue 6/21/22	10:16 AM	49.4	60.8
Residential	ST 45	Walnut Canyon Residential	Tue 6/21/22	9:52 AM	42.9	57.3

¹ The Annex Patio Alley and Southside Tavern Alley represent residential uses in a community commercial zoning.
² Noise measurements highlighted in orange were measured during a period of higher activity; unhighlighted measurements are during periods with little to no activity and would be considered the daytime ambient noise level.

In general, residential neighborhoods measured between 39-55 dBA and 54-62 dBC, except for the three (3) highlighted values measured near construction or an operating business.

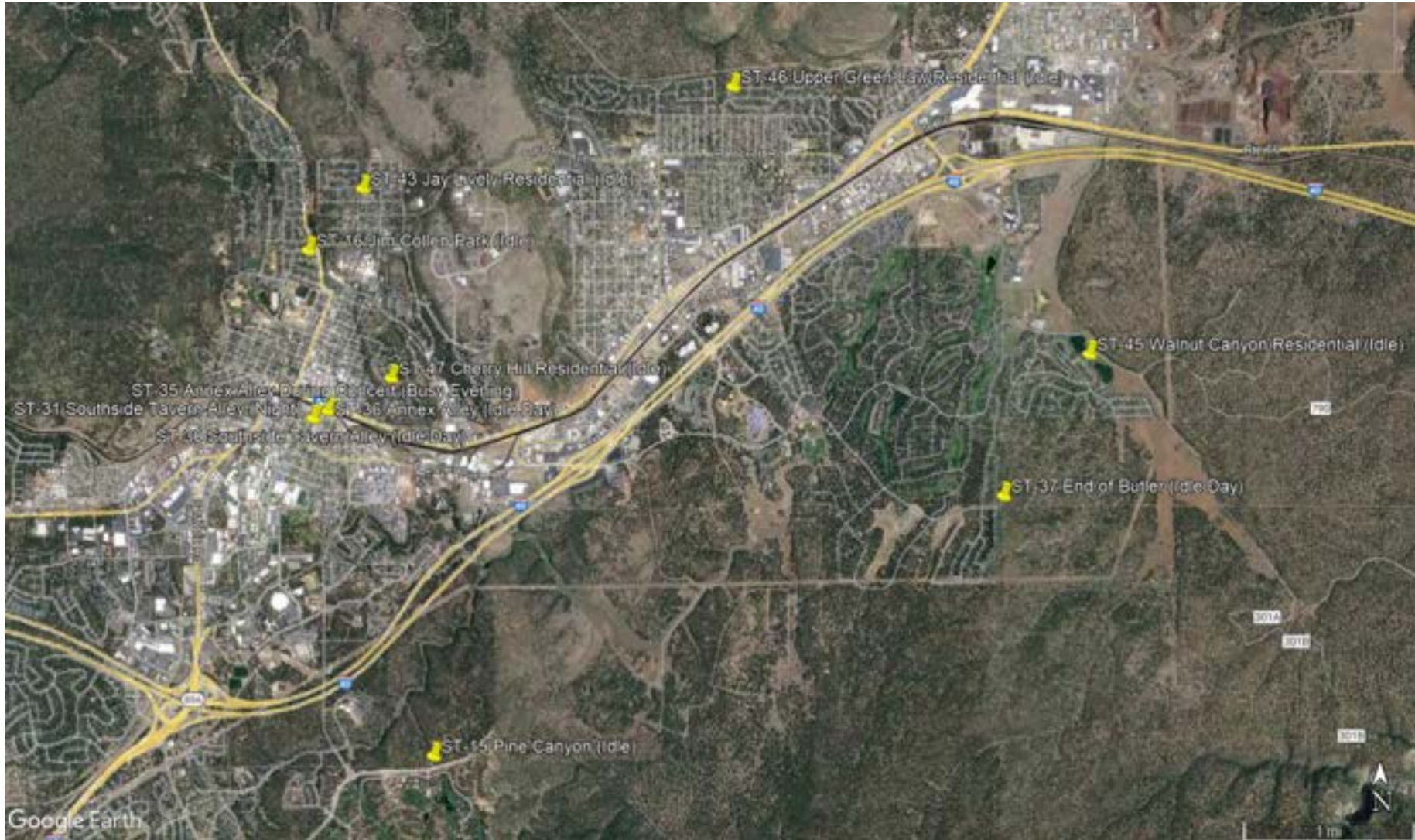
The Pine Canyon measurement was taken approximately 300 feet from a construction site and about 60 feet from trucks that were unloading and loading. The construction site was in the grading phase.


The Annex is a cocktail lounge with an outdoor performance area adjacent to commercial uses along San Francisco St and single-family homes located to the southeast along Cottage Avenue and S WC Riles Dr. The noise level during performances as measured in the alley behind the lounge was 56 dBA and 70 dBC; the noise level at the same location when there was no concert was 49 dBA and 62 dBC.

Similarly, the Southside Tavern is adjacent to commercial uses along San Francisco St and single-family homes along Benton Avenue. The noise level measured in the alleyway behind the tavern was 56.6 dBA and 64 dBC on a Saturday night and measured 50 dBA and 61 dBC on a Tuesday morning when the business was closed.

Exhibit D shows the measurement location map.

Exhibit D
Location Map – Residential Noise Measurements



 = 5-min measurement location

3.4 Commercial Noise

Table 4 shows the measurement results for commercial noise measurements.

Table 4: Commercial Noise Measurements

Type of usage ¹	Site #	Measurement Location	Date	Time	LAeq (dBA)	LCeq (dBC)
C (Bar/Club)	ST 19	Collins Irish Pub Entrance (Idle Night)	Wed 6/15/22	8:11 PM	59.5	70.1
C (Bar/Club) ²	ST 20	Collins Irish Pub Entrance (Busy Night)	Fri 6/17/22	11:17 PM	74.0	89.0
C (Bar/Club)	ST 28	Southside Tavern Entrance (Idle Day)	Wed 6/15/22	12:40 PM	60.4	73.0
C (Bar/Club)	ST 29	Southside Tavern Entrance (Busy Night)	Sat 6/4/22	11:00 PM	64.8	76.9
C (Bar/Club)	ST 32	The Mayor Entrance (Idle Day)	Wed 6/15/22	12:47 PM	58.0	67.2
C (Bar/Club)	ST 33	The Mayor Entrance (Busy Night)	Sat 6/4/22	10:52 PM	61.6	71.8
C (Lounge)	ST 34	Annex Patio During Concert (Busy Night)	Sat 6/4/22	6:08 PM	71.5	82.3
C (Music Venue)	ST 21	Orpheum during show (Busy Night)	Wed 6/15/22	8:02 PM	65.0	77.6
C (Music Venue)	ST 23	Yucca North (Busy Night)	Fri 6/17/22	11:08 PM	67.2	73.1
C (Restaurant Patio)	ST 22	Lumberyard patio (Busy Day)	Sat 6/4/22	3:24 PM	60.1	69.7
C (Restaurant Patio)	ST 25	Flag Brew Patio - (Idle)	Tue 6/7/22	11:11 AM	58.2	69.4
C (Restaurant Patio)	ST 26	Flag Brew Patio - (Busy)	Fri 6/17/22	11:25 PM	83.7	89.6
C (Shopping)	ST 38	Safeway + Plaza Way	Wed 6/8/22	12:10 PM	62.0	70.4
C (Shopping)	ST 39	NE University + Milton	Wed 6/8/22	12:20 PM	68.4	77.9

¹ All uses considered in this table are commercial uses. For convenience, a description of the use is provided in parentheses.
² Noise measurements highlighted in orange were measured during a period of higher activity; unhighlighted measurements are during periods with little to no activity and would be considered the daytime ambient noise level.

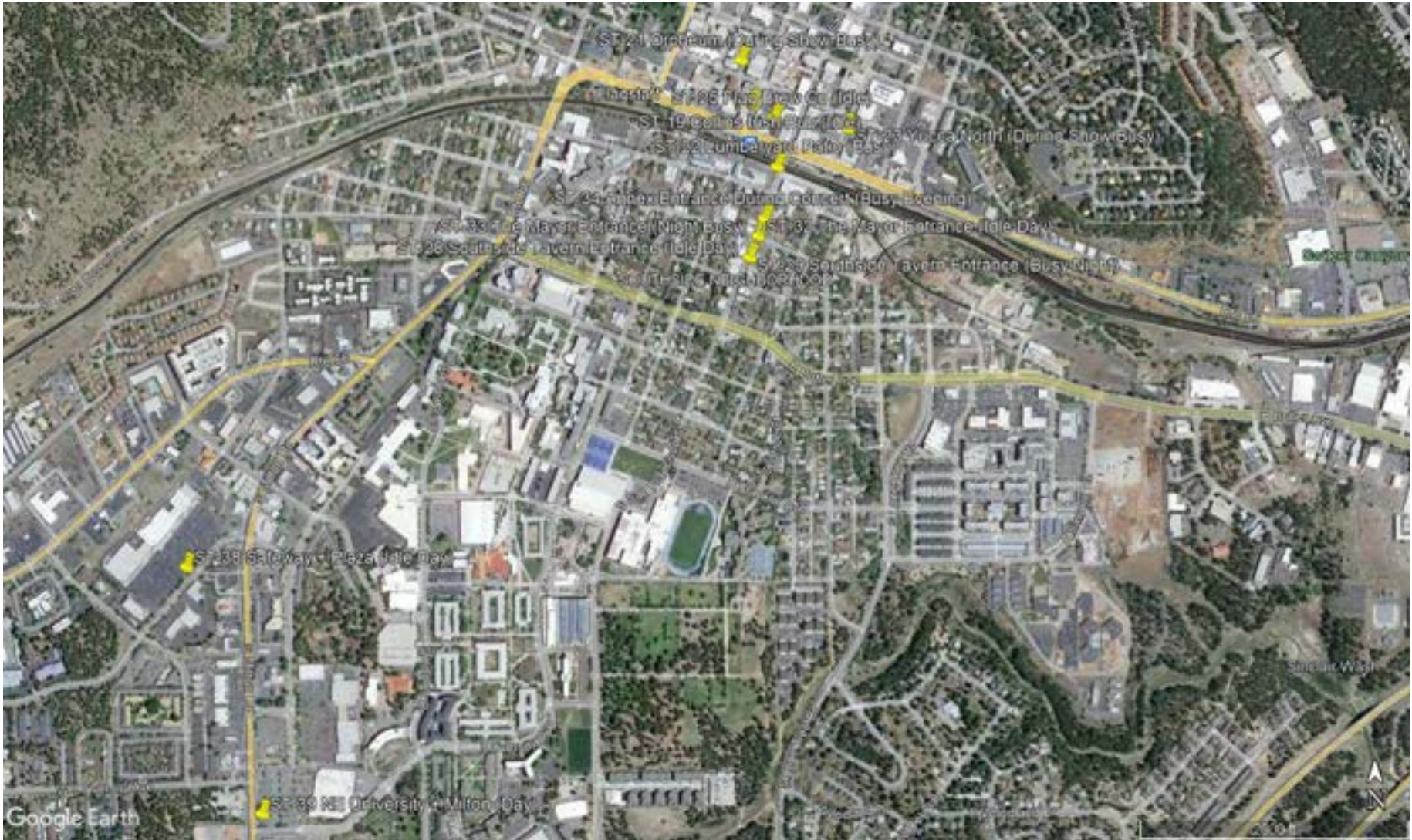
MD measured the noise level near several bars, clubs, lounges, music venues, and restaurants. The noise characteristics of these businesses can vary widely from day to night and from weekdays to weekends. As a point of comparison, MD also measured the noise levels at a Safeway and a Target parking lot (ST 38 and 39, respectively).


During periods of higher activity, the businesses measured had noise levels ranging from 60 to 84 dBA and from 70 to 90 dBC. All noise levels were measured near the property line of the use.

Measurements were taken after most college students have left the city, and therefore it is anticipated that some commercial areas will be louder during the fall, winter, and spring times.

Exhibit E shows the measurement locations.

Exhibit E
Location Map – Commercial Noise Measurements



 = 5-min measurement location

4.0 Existing Acoustical Regulations

Appendix C contains the City of Flagstaff's current noise regulations. In general, enforcement of the code is determined by the enforcing officer's perception of the volume of the noise, whether the nature of the noise is usual or unusual, the volume of background noise, if any, and the duration of the noise. This makes determining whether a violation has occurred completely subjective. MD recommends modifying the noise ordinance such that it will include objective and subjective measures to determine violations of the code.

5.0 Recommendations for New Acoustical Regulations

As a third-party consultant, MD is uniquely qualified to provide recommendations to modify the City of Flagstaff's noise regulations. MD has read hundreds of noise regulations and provided noise assessments to address noise issues in hundreds of towns, cities, counties, and other municipalities throughout the United States.

MD considered dozens of ordinances in cities in the western United States similar to Flagstaff. In order to address the specific issues pertaining to the City of Flagstaff, MD recommends the City Council consider the noise ordinances of the City of Sedona, Arizona and the City of Boulder, Colorado. The Sedona Noise Ordinance is relevant because Sedona is near Flagstaff, and the Boulder Noise Ordinance is relevant because it is from a city of comparable size and character (high-altitude city with a large college influence). These ordinances are included in Appendix D.

In order to add an element of objectivity to the enforcement of the City of Flagstaff noise ordinance, the noise ordinance should consider the following elements:

1. Noise limits based on zoning
 - a. MD recommends using separate Residential, Mixed Use, Commercial, and Industrial limits for the receiving properties. Mixed-Use receivers include residential uses within nonresidential zones. Commercial receivers include public facilities such as parks.
 - b. MD recommends that where two different uses are adjacent to each other, the quieter noise limit be applied.
 - c. MD recommends including both a dBA and a dBC noise limit for the Leq (continuous average noise) limit.
 - d. MD recommends incorporating a time-averaged limit (Leq) for continuous noise sources
 - e. MD recommends separate day/night limits
2. Specifications as to where the noise is to be measured
 - a. MD recommends measuring the noise at the property line of the complainant's property
3. Specifications for the time period over which sound is to be measured
 - a. MD recommends measuring the noise level at the property line for a period of at least 2-5 minutes for enforcement of continuous noise.
4. Consideration of ambient noise levels
 - a. Ambient sound is defined as follows¹:
 - i. at a specified time, the all-encompassing sound associated with a given environment, being usually a composite of sound from many sources from many directions, near and far, including the specific sound source(s) of interest.
 - b. Residual sound is defined as follows:

¹ Per ANSI/ASA S12.9-2013/Part1

- i. at a specified time, the all-encompassing sound, being usually a composite of sound from many sources from many directions, near and far, remaining at a given position in a given situation when all uniquely identifiable discrete sound sources are eliminated, rendered insignificant, or otherwise not included.
 - c. If the residual sound exceeds the limits in the table, the residual sound plus 3 dB becomes the limit.
- 5. Consideration of impulsive noise
 - a. Extremely high noise levels for a short duration of time (i.e., noise similar to a gunshot, firecracker, etc)
- 6. MD recommends incorporating exemptions to the nuisance noise regulations for activities such as the following:
 - a. MD recommends exempting power tools and lawn maintenance equipment when used during allowed hours (e.g., noise from those sources would be exempt from 7 am to 8 pm weekdays and from 9 am to 8 pm on weekends or federal holidays)
 - b. Construction noise provided that construction takes place during allowable times of day and days of the week.
 - c. Noises from activities for school, governmental, or community groups
 - d. Safety signals, warning and alarm devices ro shouts, emergency generators, storm warning sirens, etc., and the authorized testing of such equipment
 - e. Noises created by utilities (including garbage collection), aircraft, or trains
 - f. Regular traffic noise
 - g. Special events
- 7. Vehicular noise regulations
 - a. MD recommends including language to prohibit the operation of vehicles without exhaust mufflers designed to prevent excessive or unusual noise
 - b. Vehicle noise limits based on the size/type of motor vehicle and based on the speed limit where the offense takes place

Table 5 outlines the recommended limits based on the noise measurements and feedback from the community and City. These limits reflect typical annoyance levels in various land uses for broadband and low-frequency noise.

<Table 5, next page>

Table 5: Community Noise Standards

Zone	Time	Noise Standard Maximum Leq dB(A) / dB(C)
Residential area	10:00 p.m. – 7:00 a.m.	50 / 65
	7:00 a.m. – 10:00 p.m.	55 / 70
Mixed Use area	10:00 p.m. – 7:00 a.m.	55 / 70
	7:00 a.m. – 10:00 p.m.	60 / 75
Commercial area	10:00 p.m. – 7:00 a.m.	65 / 80
	7:00 a.m. – 10:00 p.m.	65 / 80
Industrial area	10:00 p.m. – 7:00 a.m.	75 / 90
	7:00 a.m. – 10:00 p.m.	75 / 90

Table 6 outlines the recommended vehicle noise limits.

Table 6: Motor Vehicle Noise Limit

Vehicle Classification	Speed Limit of 35 mph or Less	Speed Limit of More Than 35 mph
(i) Any motor vehicle with a manufacturer’s gross vehicle weight rating of 6,000 pounds or more, any combination of vehicles towed by such motor vehicle, and any motorcycle other than a motor-driven cycle (moped)	88 dB(A)	92 dB(A)
(ii) Any other motor vehicle and any combination of vehicles towed by such motor vehicles	82 dB(A)	86 dB(A)

6.0 Conclusions

Baseline noise readings and noise readings were recorded and evaluated. In addition, MD has provided detailed recommendations for modifying the City of Flagstaff Noise Ordinance.

MD is pleased to provide City of Flagstaff with this noise assessment. If you have any questions regarding this analysis, please call our office at (602) 774-1950.

Sincerely,
 MD Acoustics, LLC



Samuel Hord, INCE-USA
 Acoustical Consultant



Claire Pincock, INCE-USA
 Acoustical Consultant

Appendix A
Glossary of Acoustical Terms

Glossary of Terms

A-Weighted Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear at low volumes. A numerical method of rating human judgment of loudness.

Ambient Noise Level: The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

C-Weighted Sound Level: The sound pressure level in decibels as measured on a sound level meter using the C-weighted filter network. The C-weighting filter greatly de-emphasizes very high frequency components of the sound and slightly de-emphasizes the very low frequency components. A numerical method of rating human judgment of loudness.

Community Noise Equivalent Level (CNEL): The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

Decibel (dB): A unit for measuring the amplitude of a 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 micro-pascals.

dB(A): A-weighted sound level (see definition above).

dB(C): C-weighted sound level (see definition above).

dB(Z): Z- weighted is the unfiltered or flat weighted response. It can commonly be referred to as the Z-weighted data. Furthermore, most Type 1 sound level meters (ANSI 1.4-2014) output the data using the acronyms dBA, dBC, dBZ for further clarity. When measurements are taken they can be converted to A, C, or Z from the other scales.

Equivalent Sound Level (LEQ): The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time varying noise level. The energy average noise level during the sample period.

Habitable Room: Any room meeting the requirements of the Uniform Building Code or other applicable regulations which is intended to be used for sleeping, living, cooking or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting

corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms and similar spaces.

Human Sensitivity to Sound: In general, the healthy human ear can hear between 20 Hz to 20,000 Hz. Frequencies below 125 Hz are typically associated with low frequencies or bass. Frequencies between 125 Hz and 5,000 Hz are typically associated with mid-range tones. Finally, frequencies between 5,000 and 20,000Hz are typically associated with higher range tones.

The human ear is sensitive to changes in noise levels, depending on the frequency. Generally speaking, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz (A-weighted scale) and perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. At lower and higher frequencies, the ear can become less sensitive depending on a number of factors. Table 1 provides a brief summary of how humans perceive changes in noise levels.

Table 1: Change in Noise Level Characteristics¹

Changes in Intensity Level, dBA	Changes in Apparent Loudness
1	Not perceptible
3	Just perceptible
5	Clearly noticeable
10	Twice (or half) as loud

https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm

L(n): The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 is the sound level exceeded 10 percent of the sample time. Similarly, L50, L90 and L99, etc.

Noise: Any unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

Percent Noise Levels: See L(n).

Sound Level (Noise Level): The weighted sound pressure level obtained by use of a sound level meter having a standard frequency-filter for attenuating part of the sound spectrum.

Sound Level Meter: An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL): The dB(A) level which, if it lasted for one second, would produce the same A-weighted sound energy as the actual event.

Appendix B
Field Sheets

5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-01 Wheeler Park (Busy Day) **Site Observations:**

Project: #/Name: 0357-2022-001 Hullabaloo. Moderate traffic, 200-300 people in park, live music

Site Address/Location: Flagstaff, AZ

Date: 06/04/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 01



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-01 Wheeler Park (Busy Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 01

Figure 1:



Figure 2:

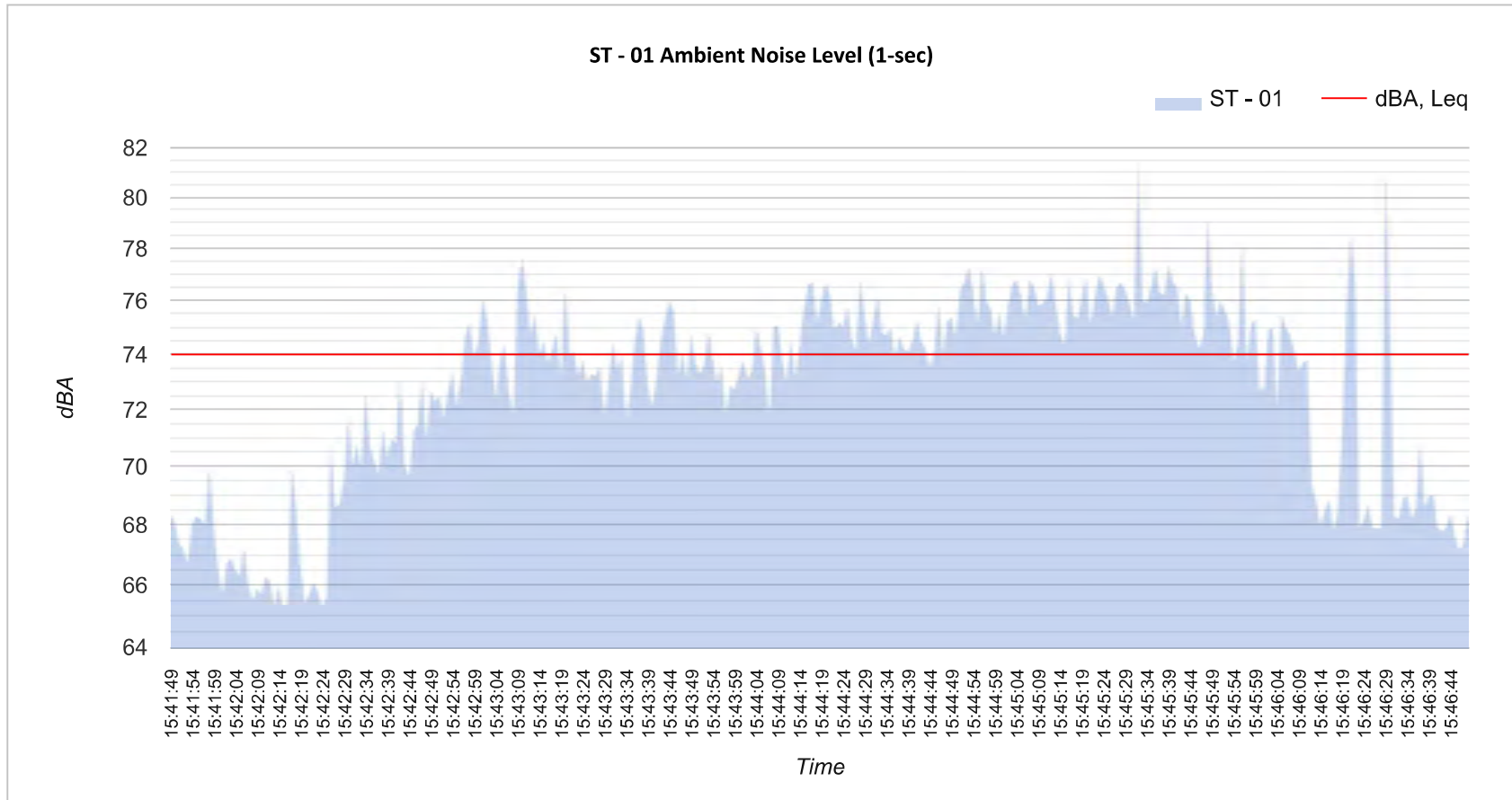


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 01	3:41 PM	3:47 PM	74	81.5	65.2	77.4	76.6	75.4	73.9	67.8

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-01 Wheeler Park (Busy Day)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	76°, clear and sunny, Winds 5-10 mph	Hullabaloo, 150'
Site Id:	ST - 01	Ground Type:	Asphalt	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-02 Wheeler Park (Idle Day)

Site Observations:

Project: #/Name: 0357-2022-001

Light-moderate traffic, 10-15 people in park, conversing and listening to music.

Site Address/Location: Flagstaff, AZ

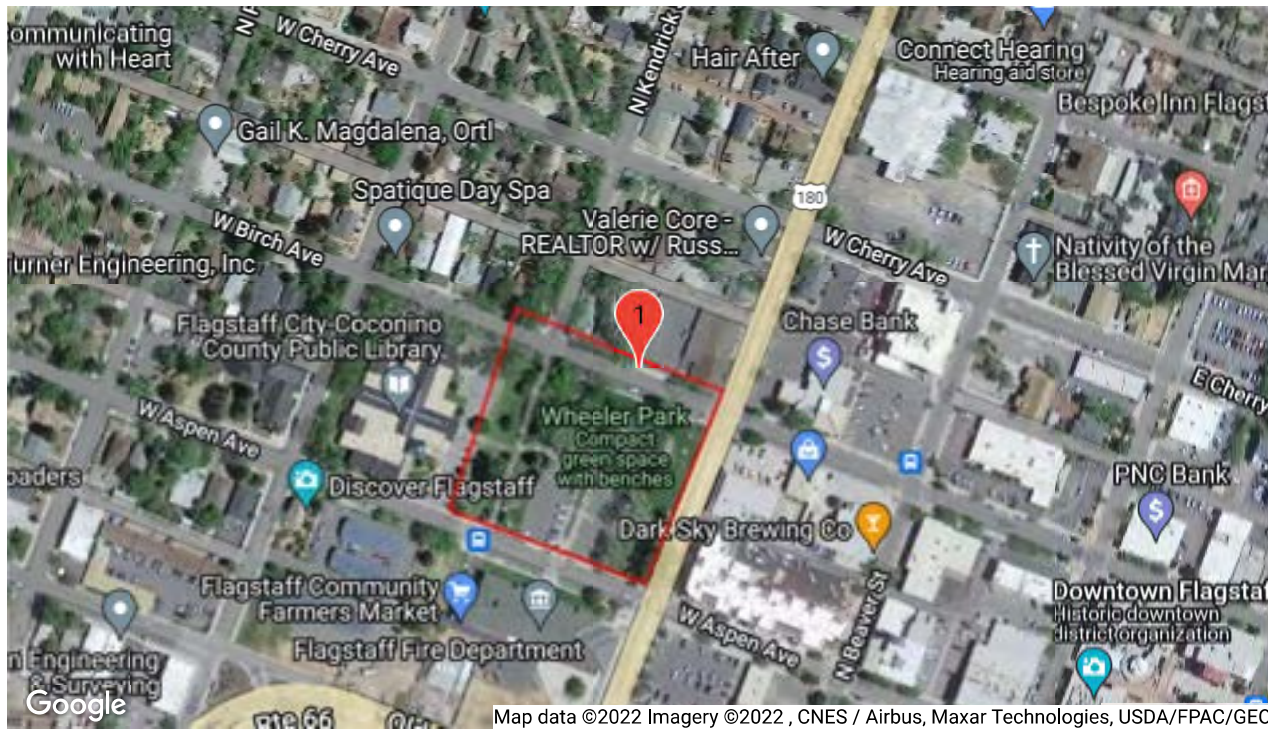
Date: 06/07/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 02



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-02 Wheeler Park (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 02

Figure 1:



Figure 2:

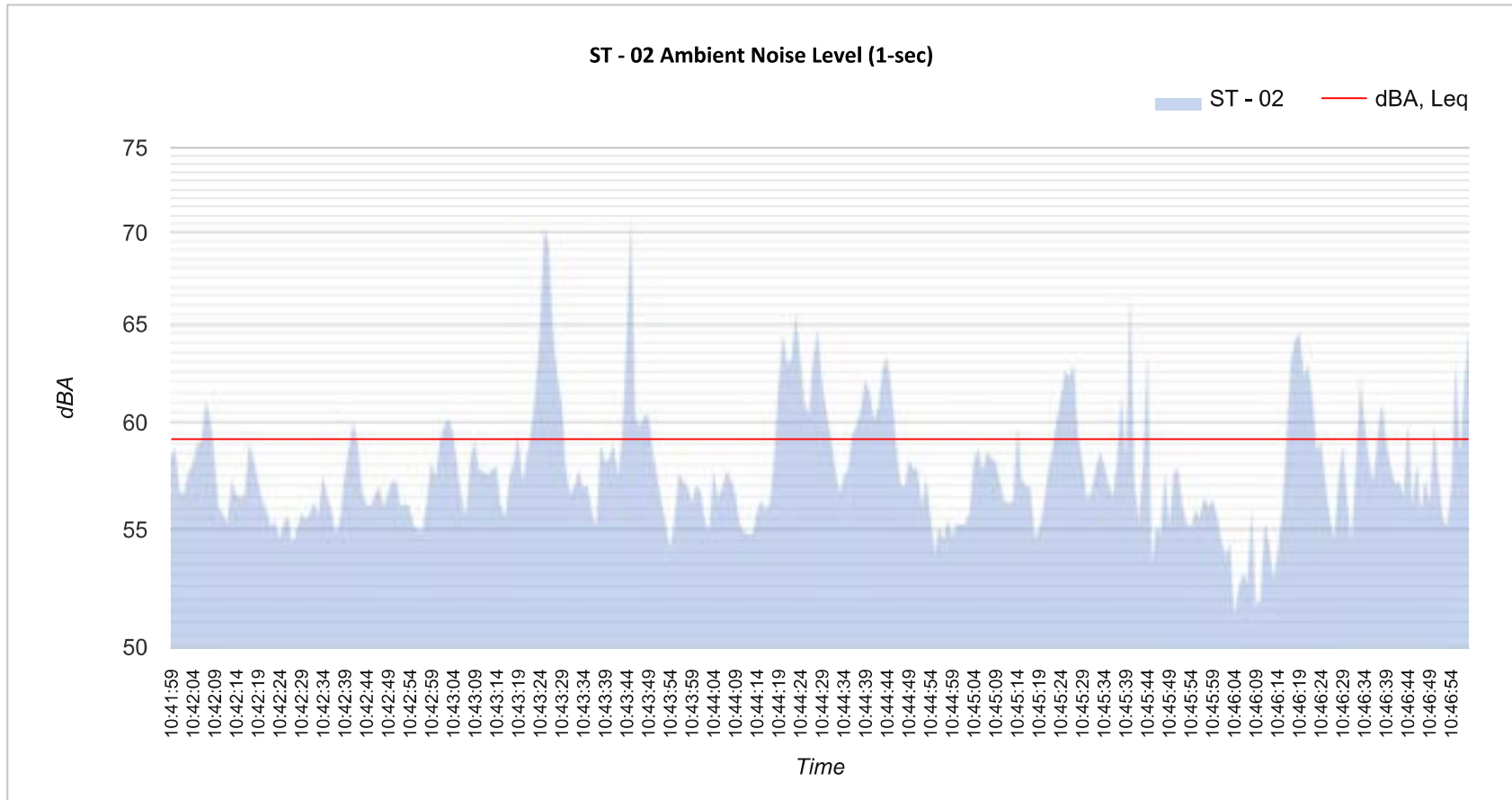


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 02	10:41 AM	10:47 AM	59.2	69.9	52.2	64.7	62.5	59.1	57.3	55

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-02 Wheeler Park (Idle Day)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	79 degrees, Sunny/Clear, Winds 5-10mph	Traffic, people, music ~170'
Site Id:	ST - 02	Ground Type:	Asphalt	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-03 Switzer + 66 (Idle Day)

Site Observations:

Project: #/Name: 0357-2022-001

Intersection, moderate traffic.

Site Address/Location: Flagstaff, AZ

Date: 06/08/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 03



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-03 Switzer + 66 (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 03

Figure 1:



Figure 2:

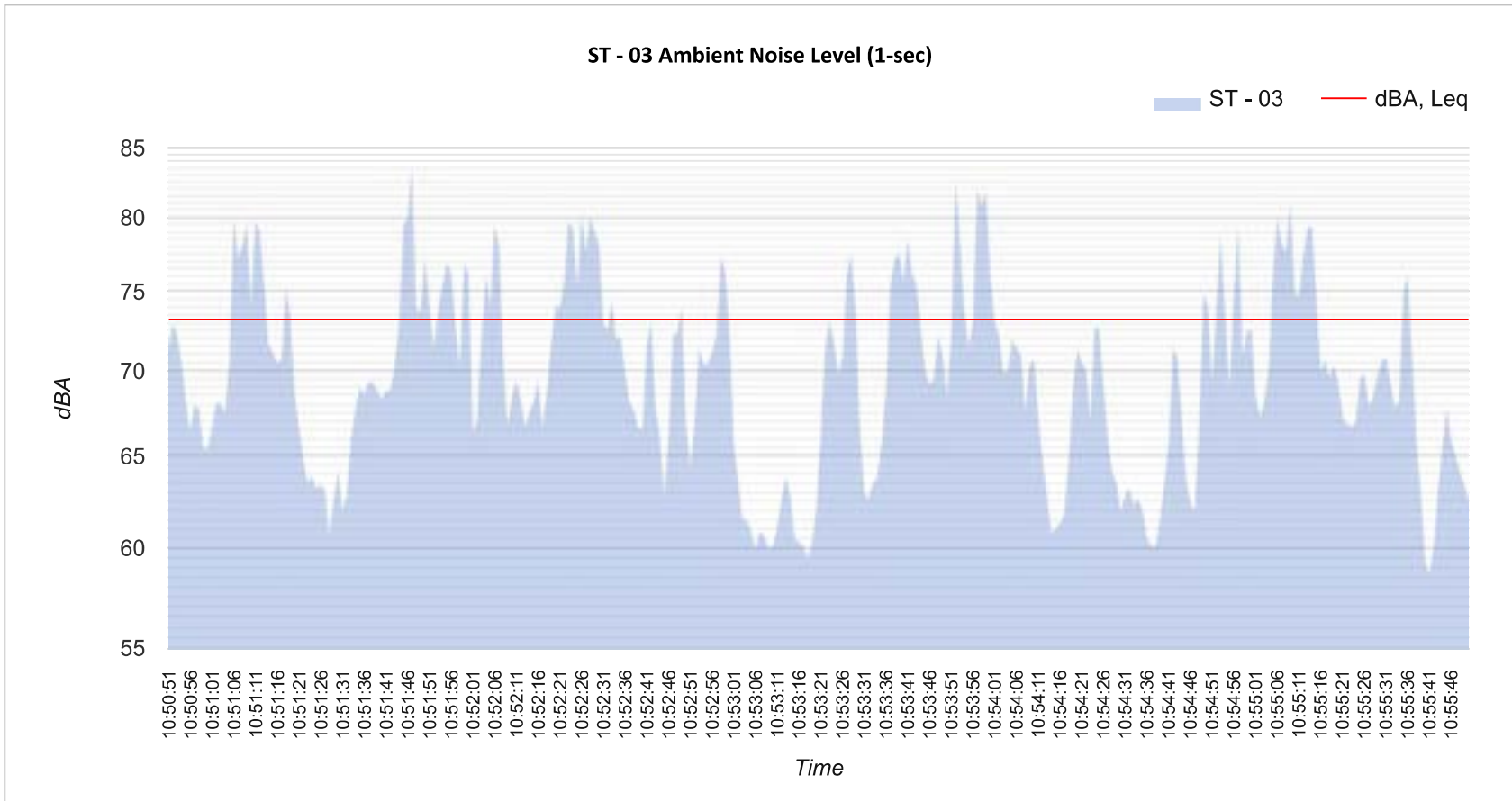


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 03	10:50 AM	10:56 AM	73.2	82.6	59.7	80.1	78.4	73.7	69.8	62.1

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-03 Switzer + 66 (Idle Day)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	81 degrees, Sunny/Clear, Winds 5-8 mph	Traffic intersection, ~30'
Site Id:	ST - 03	Ground Type:	Asphalt	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-04 Switzer + 66 (Busy Day)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/20/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
Intersection, moderate- heavy traffic.

Sound Meter: XL2, NT1 **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 04



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-04 Switzer + 66 (Busy Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 04

Figure 1:



Figure 2:

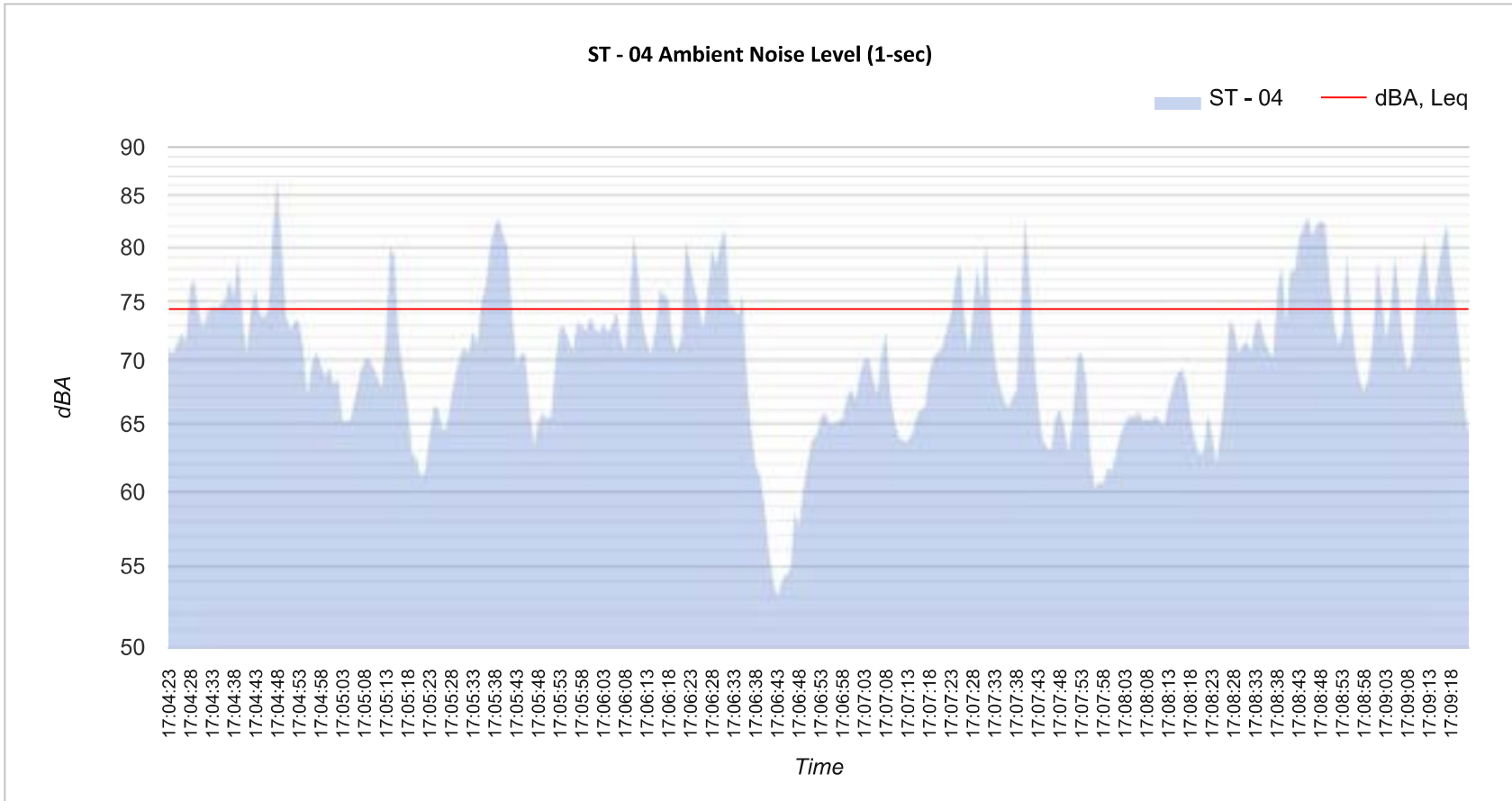


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 04	5:04 PM	5:10 PM	74.4	85.2	54.2	82.1	79.9	74.4	70.7	63.3

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-04 Switzer + 66 (Busy Day) **Site Topo:** Flat **Noise Source(s) w/ Distance:**
Site Address/Location: Flagstaff, AZ **Meteorological Cond.:** 77 degrees, Sunny/Clear, Winds 8-10mph Rush hour Traffic intersection, ~40'
Site Id: ST - 04 **Ground Type:** Asphalt



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-05 4th St + 66 (Idle Day)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/08/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
Intersection, moderate traffic.

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST-05



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-05 4th St + 66 (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST-05

Figure 1:



Figure 2:

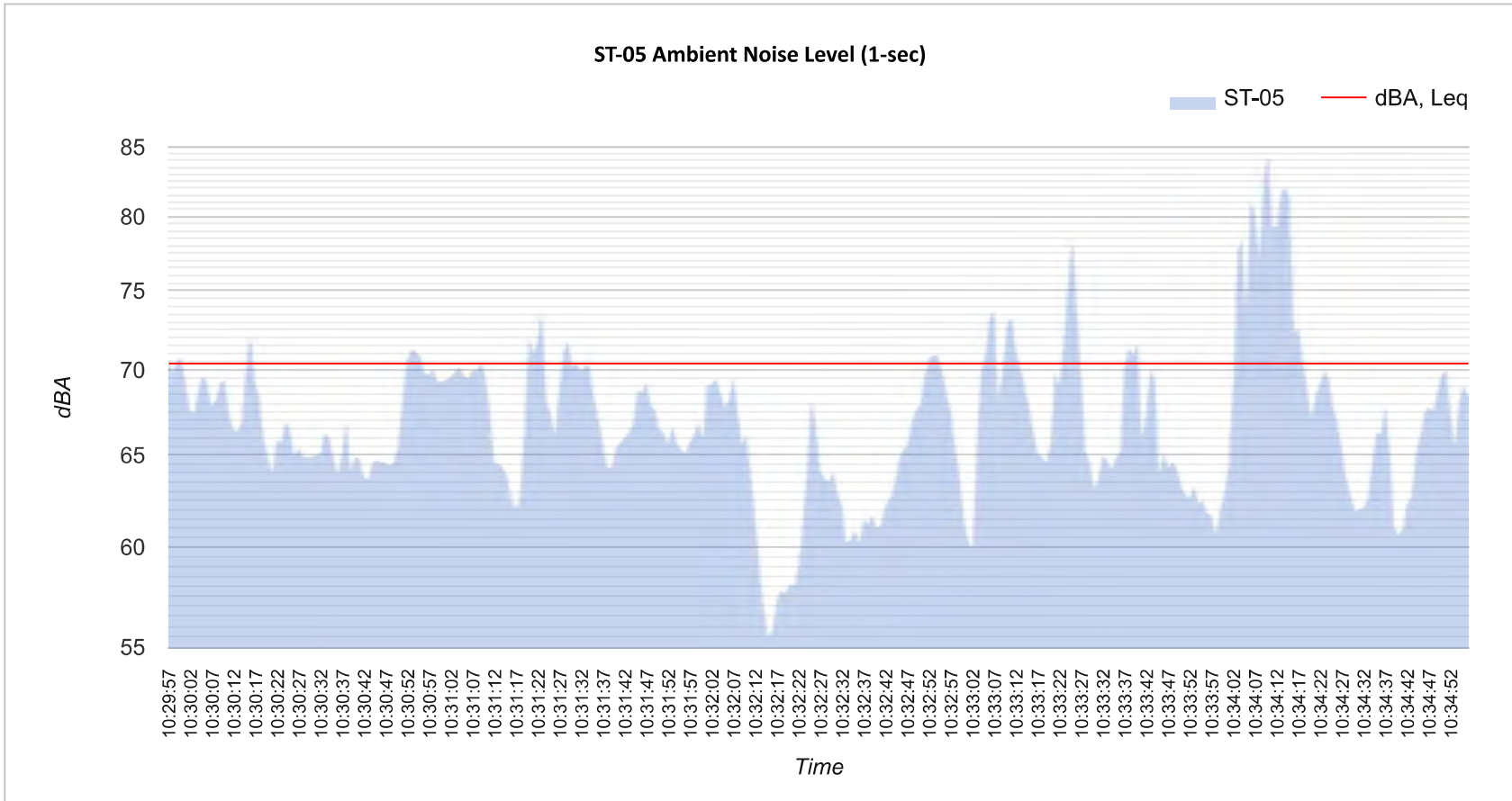


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST-05	10:29 AM	10:35 AM	70.4	83.8	56.3	80.3	72	69.6	66.6	61.9

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-05 4th St + 66 (Idle Day)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	80 degrees, Sunny/Clear, Winds upto 10 mph	Traffic intersection, ~120'
Site Id:	ST-05	Ground Type:	Asphalt	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-06 4th St + 66 (Busy Day)

Site Observations:

Project: #/Name: 0357-2022-001

Intersection, moderate/heavy traffic. 3:39 mark, individual spoke into microphone.

Site Address/Location: Flagstaff, AZ

Date: 06/20/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 06



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-06 4th St + 66 (Busy Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 06

Figure 1:



Figure 2:

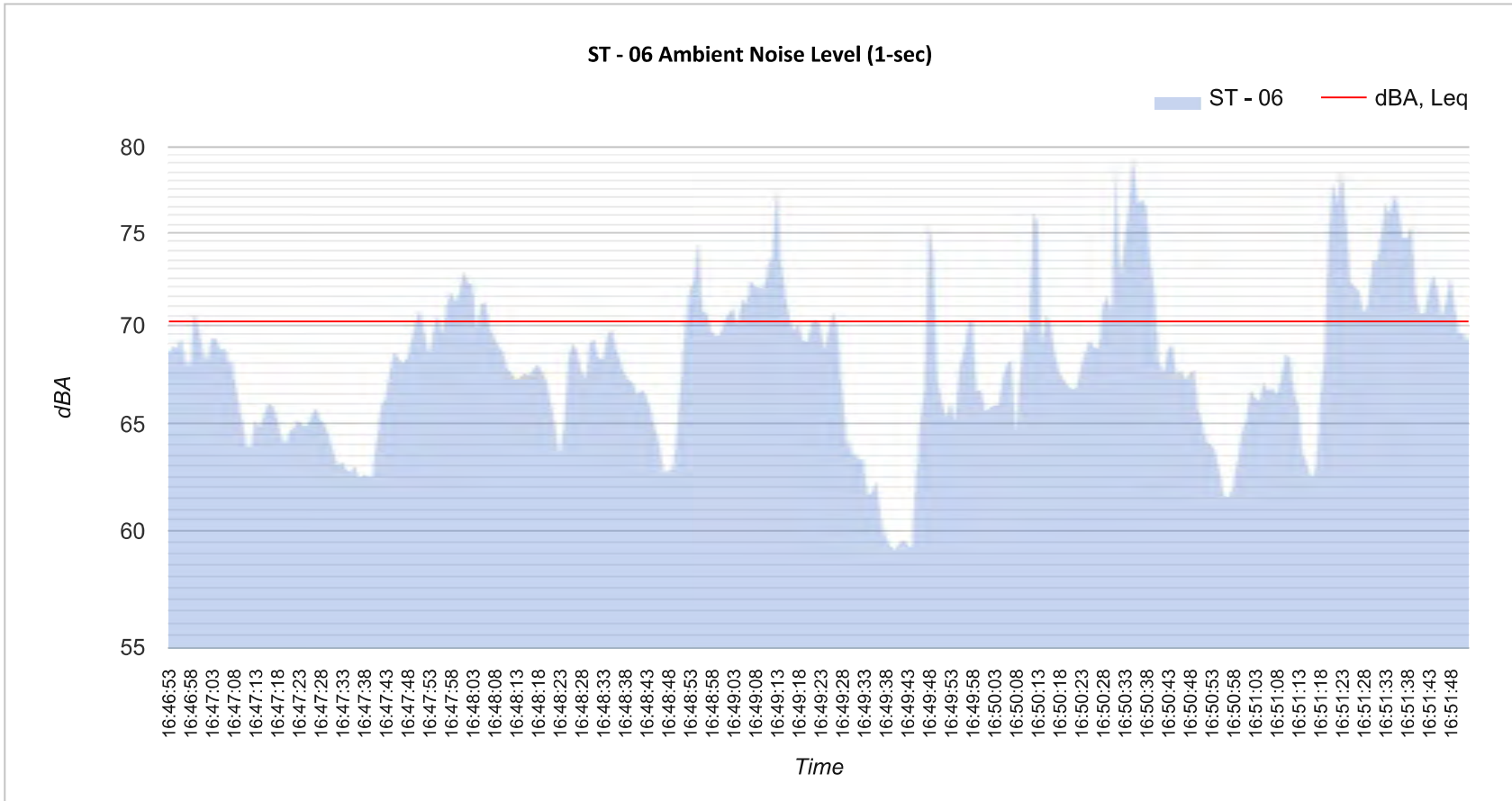


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 06	4:46 PM	4:52 PM	70.2	79.0	59.2	76.9	74.5	70.6	68.2	63.2

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-06 4th St + 66 (Busy Day)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	79 degrees, Sunny/Clear, Winds ~10mph	Rush hour Traffic intersection, ~40'
Site Id:	ST - 06	Ground Type:	Asphalt	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-07 Butler + i40 (Idle Day)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/08/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
Intersection, moderate traffic.

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 07



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-07 Butler + i40 (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 07

Figure 1:



Figure 2:

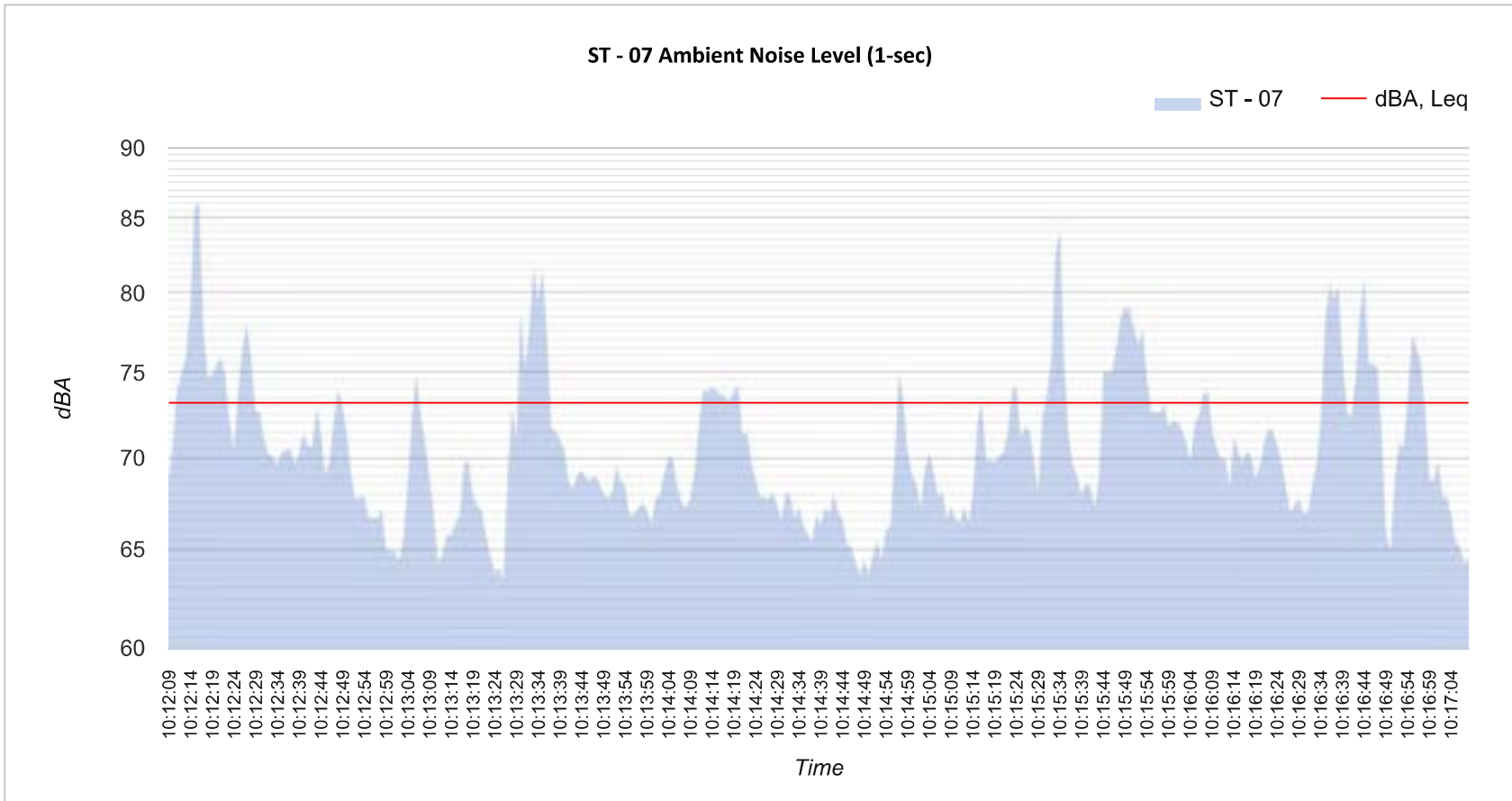


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 07	10:12 AM	10:18 AM	73.2	85.5	63.7	80.8	77.3	72.8	69.8	65.8

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-07 Butler + i40 (Idle Day)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	80 degrees, Sunny/Clear, Winds 5-10 mph	Traffic intersection, ~60'
Site Id:	ST - 07	Ground Type:	Asphalt	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-08 Butler + i40 (Busy Day)

Site Observations:

Project: #/Name: 0357-2022-001

Intersection, moderate/heavy traffic, No foot traffic

Site Address/Location: Flagstaff, AZ

Date: 06/20/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 08



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-08 Butler + i40 (Busy Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 08

Figure 1:



Figure 2:

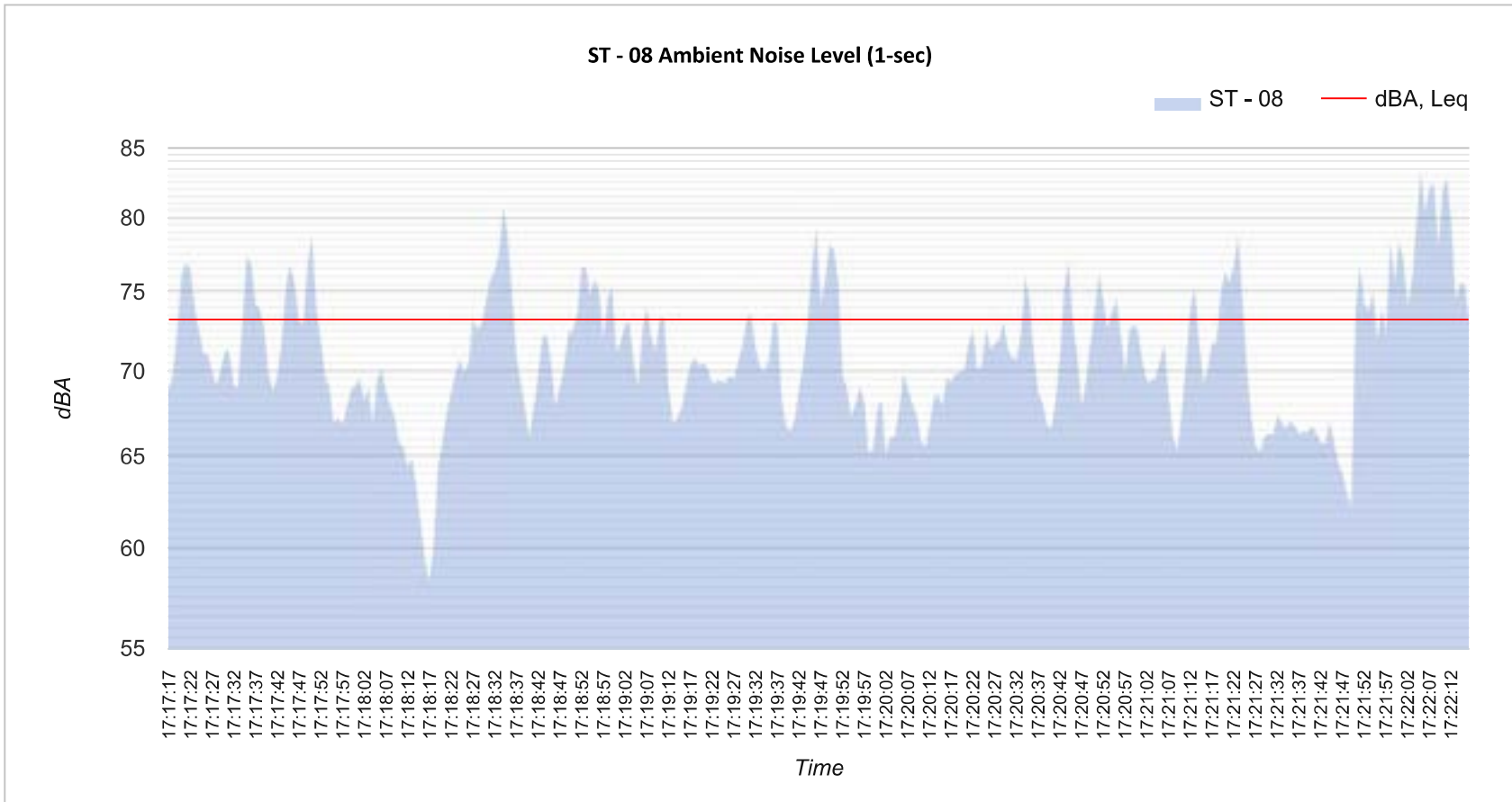


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 08	5:17 PM	5:23 PM	73.2	82.5	59.3	80.3	76.8	73.8	70.5	66.1

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-08 Butler + i40 (Busy Day)	Site Topo:	Flat	Noise Source(s) w/ Distance:	
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	77 degrees, Sunny/Clear, Winds 5-10mph	Rush hour Traffic intersection, ~40'	
Site Id:	ST - 08	Ground Type:	Asphalt		

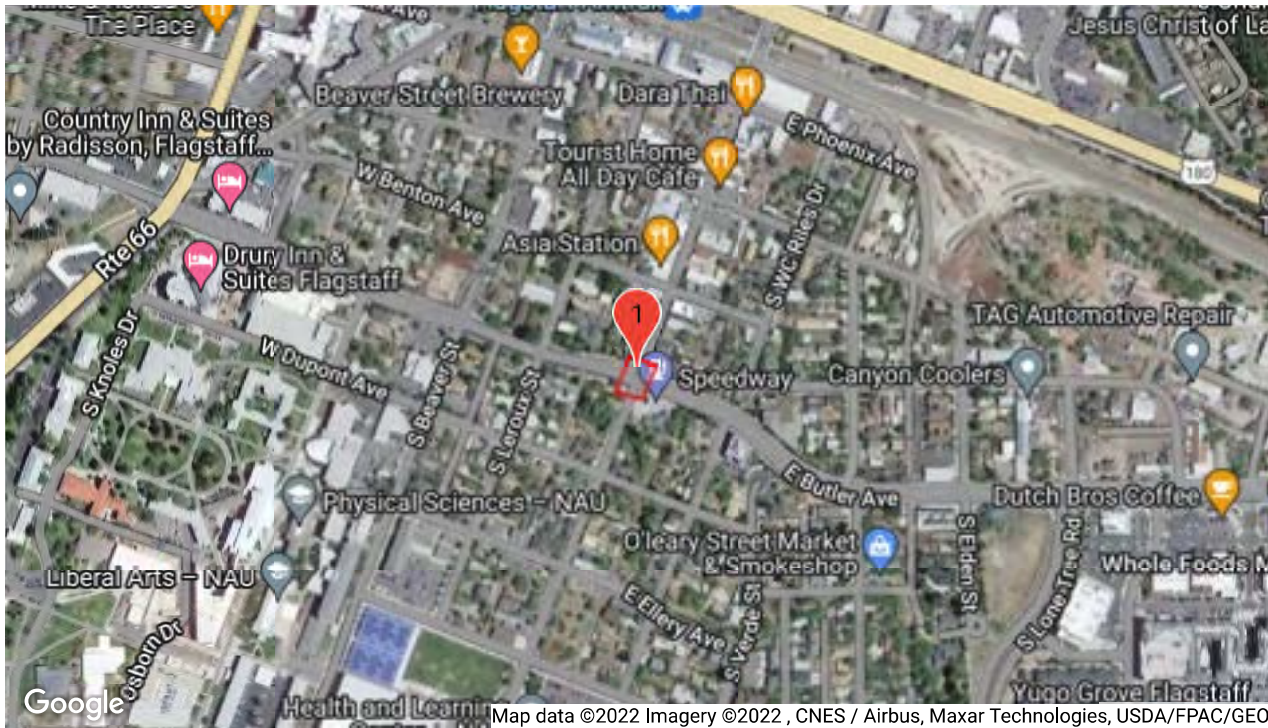


5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-09 Butler + San Francisco (Idle)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/15/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
Intersection, moderate traffic.

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 9



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-09 Butler + San Francisco (Idle)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 9

Figure 1:



Figure 2:

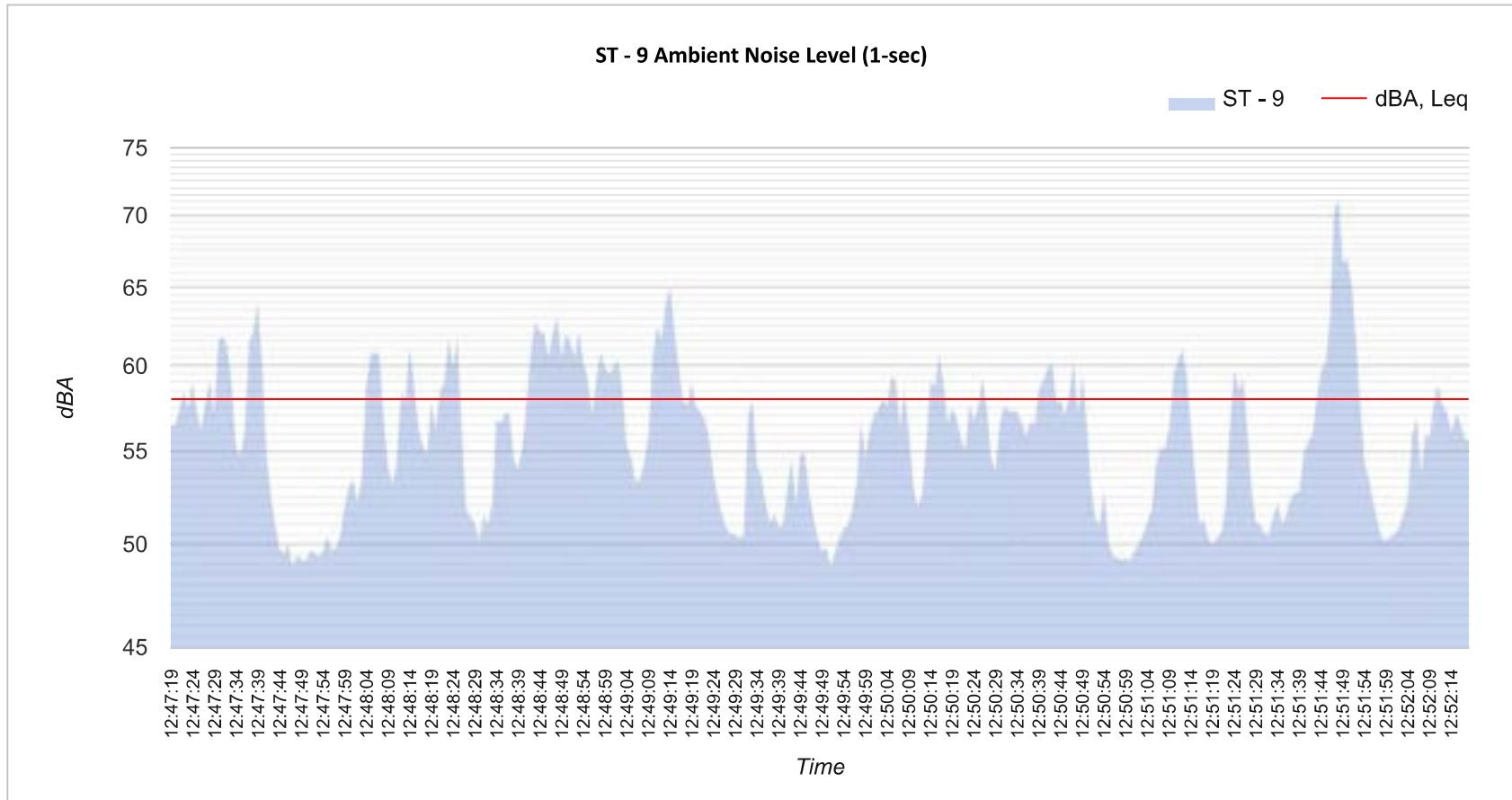


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 9	12:47 PM	12:53 PM	58	70.7	49.1	64	61.6	58.7	56.2	50.3

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-09 Butler + San Francisco (Idle)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	83°, clear and sunny, winds 5-7 mph	Traffic intersection, ~40'
Site Id:	ST - 9	Ground Type:	Asphalt	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-10 Butler + San Francisco (Busy)

Site Observations:

Project: #/Name: 0357-2022-001

Moderate - Heavy Traffic

Site Address/Location: Flagstaff, AZ

Date: 06/15/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 10



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-10 Butler + San Francisco (Busy)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 10

Figure 1:



Figure 2:

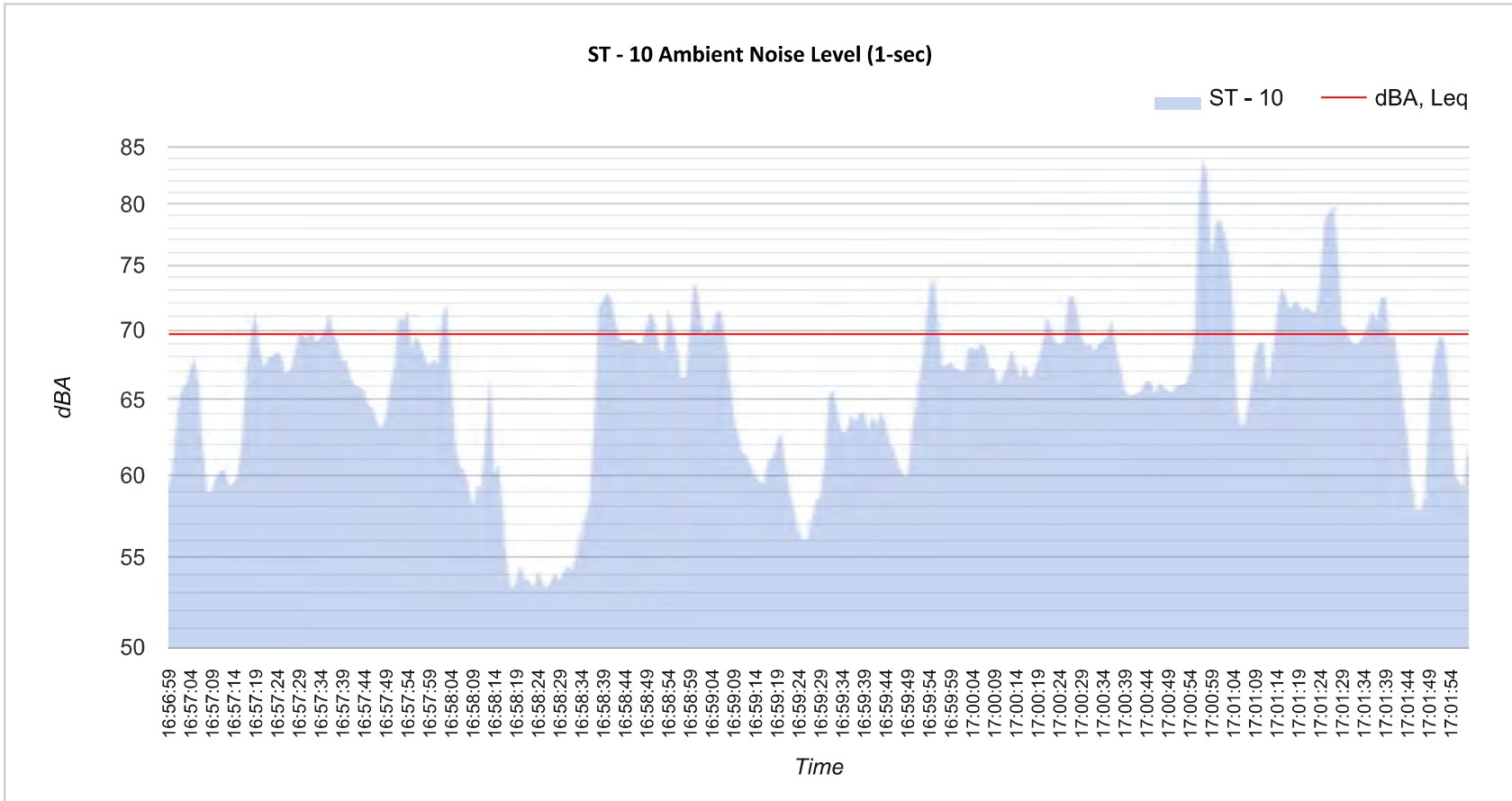


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 10	4:56 PM	5:02 PM	69.7	83.5	53.2	78.7	72.2	69.6	67.2	58.6

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-10 Butler + San Francisco (Busy) **Site Topo:** Flat **Noise Source(s) w/ Distance:**
Site Address/Location: Flagstaff, AZ **Meteorological Cond.:** 84 degrees, Sunny/Clear, Winds 5 mph Traffic intersection, ~30'
Site Id: ST - 10 **Ground Type:** Asphalt



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-11 Thorpe Park (Idle Day)

Site Observations:

Project: #/Name: 0357-2022-001

Park/Residential

Site Address/Location: Flagstaff, AZ

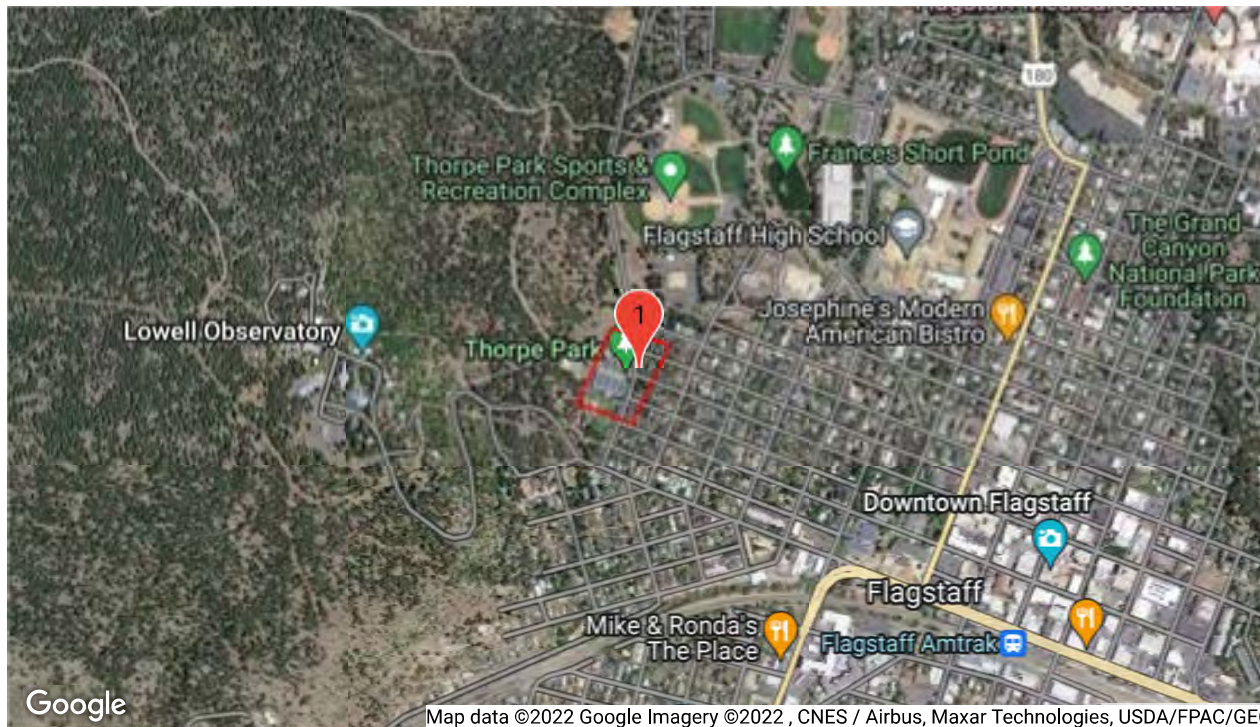
Date: 06/14/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 11



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-11 Thorpe Park (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 11

Figure 1:



Figure 2:

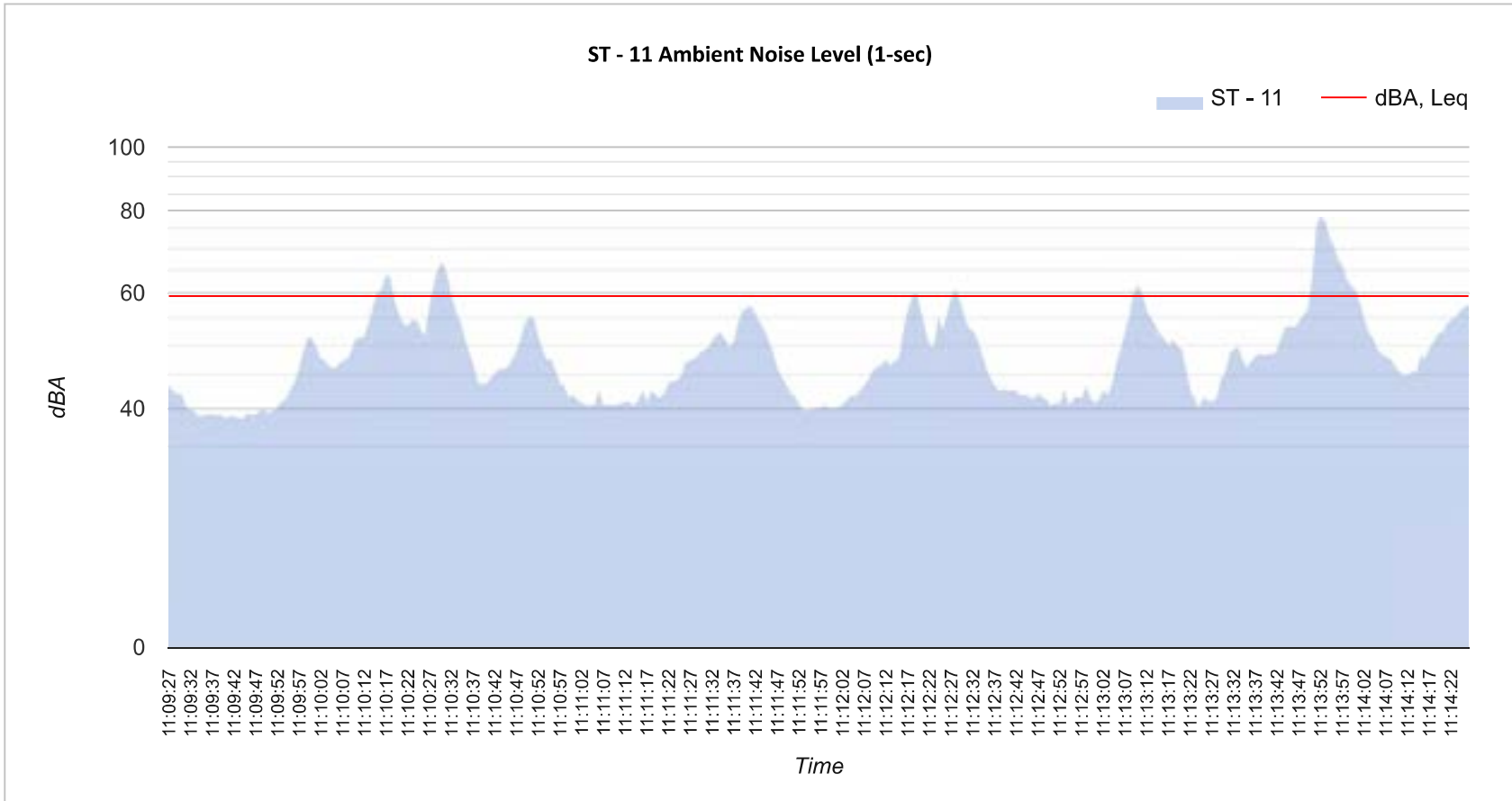


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 11	11:09 AM	11:15 AM	59.3	77.7	38.5	66.7	59.5	52.7	47.2	40.3

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-11 Thorpe Park (Idle Day)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	73 degrees, Sunny/Clear, Winds 5-10mph	Park/Residential
Site Id:	ST - 11	Ground Type:	Asphalt	

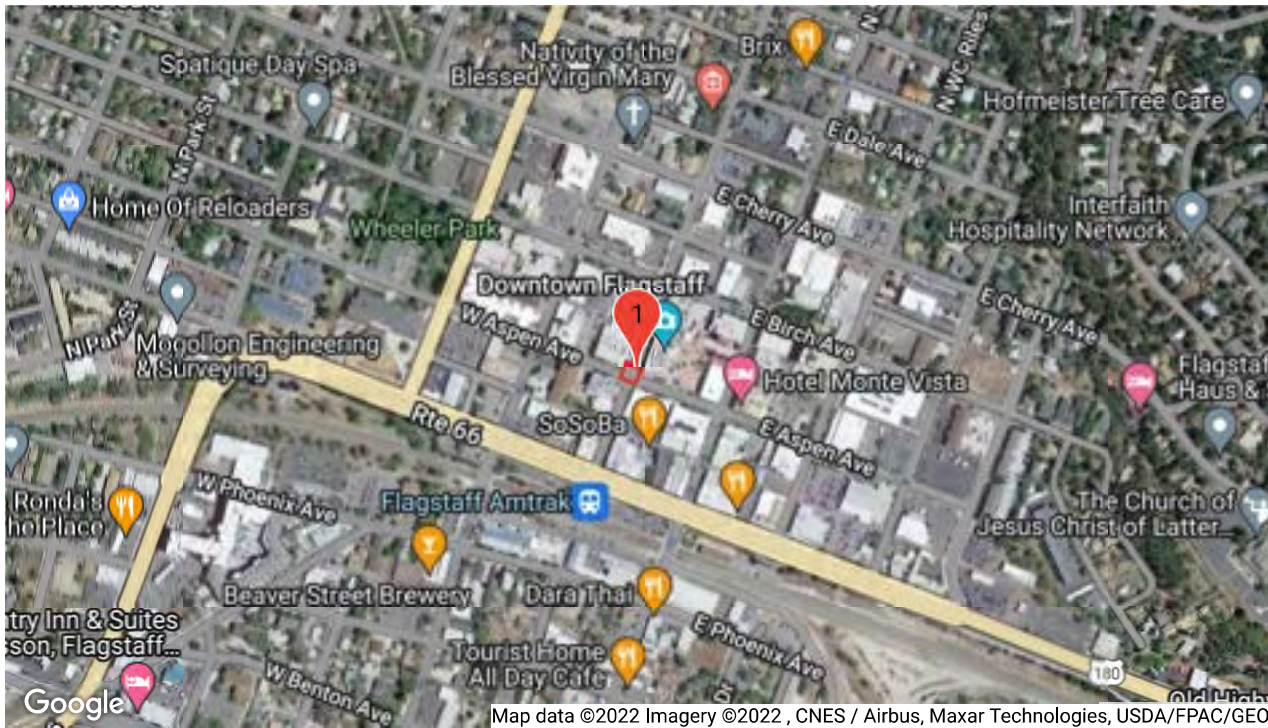


5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-12 Leroux + Aspen (Idle Day)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/07/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
Intersection Traffic, light-moderate traffic

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 12



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-12 Leroux + Aspen (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 12

Figure 1:



Figure 2:

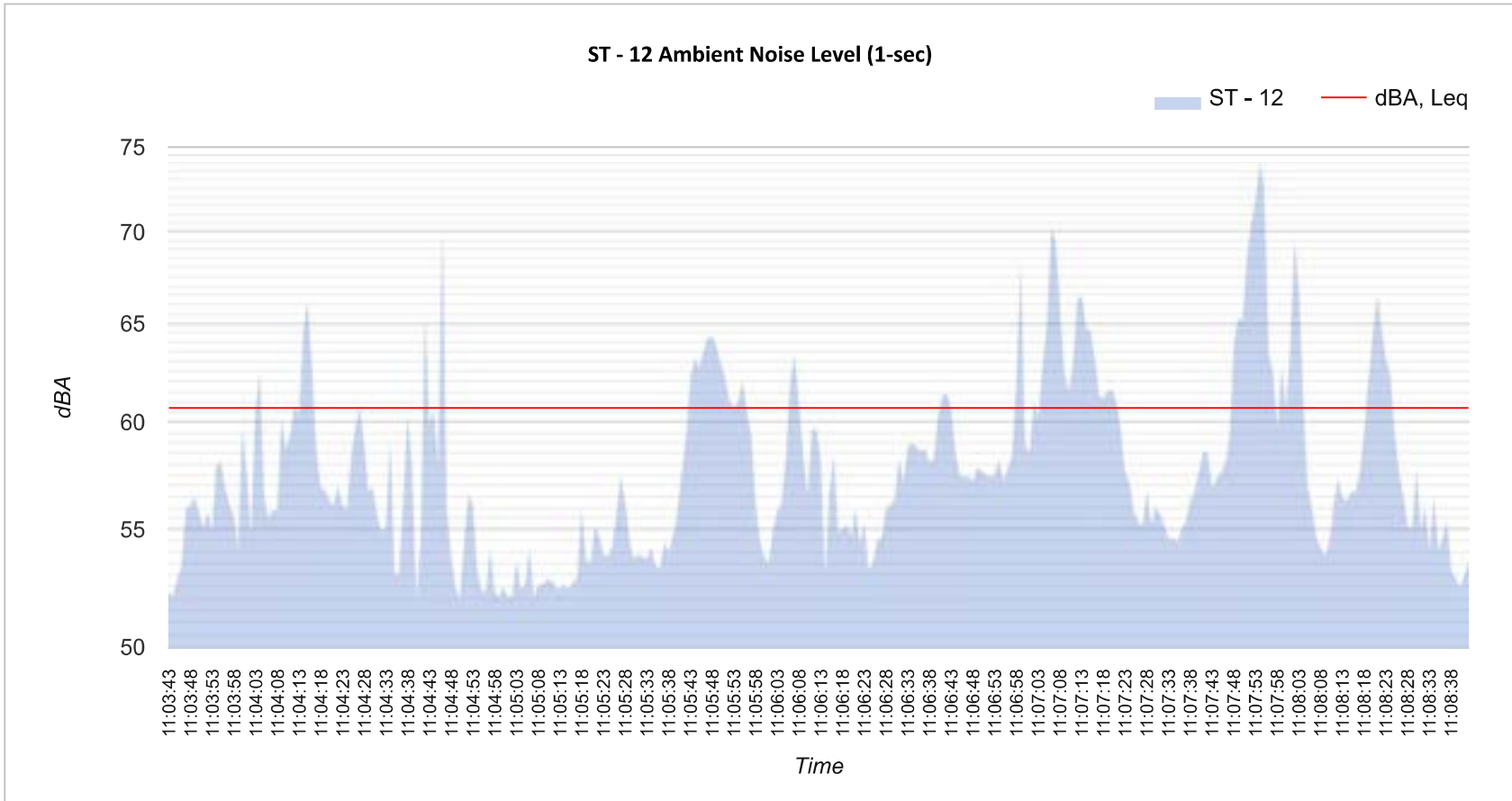


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 12	11:03 AM	11:09 AM	60.7	73.4	52.0	69.5	64.5	60.3	56.9	53

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-12 Leroux + Aspen (Idle Day)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	79 degrees, Sunny/Clear, No Wind	Traffic intersection, ~45'
Site Id:	ST - 12	Ground Type:	Asphalt	

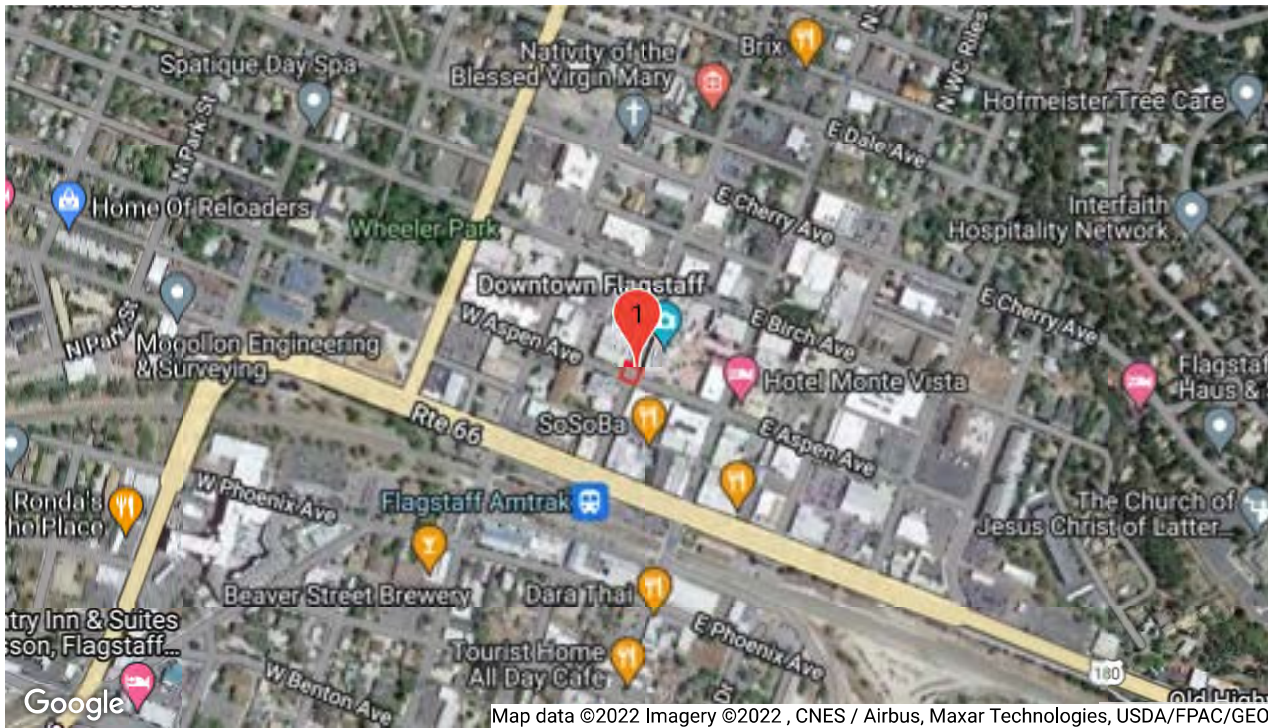


5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-13 Leroux + Aspen (Busy Day)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/04/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
Intersection moderate traffic, heavy foot traffic, street performer, patio

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 13



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-13 Leroux + Aspen (Busy Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 13

Figure 1:



Figure 2:

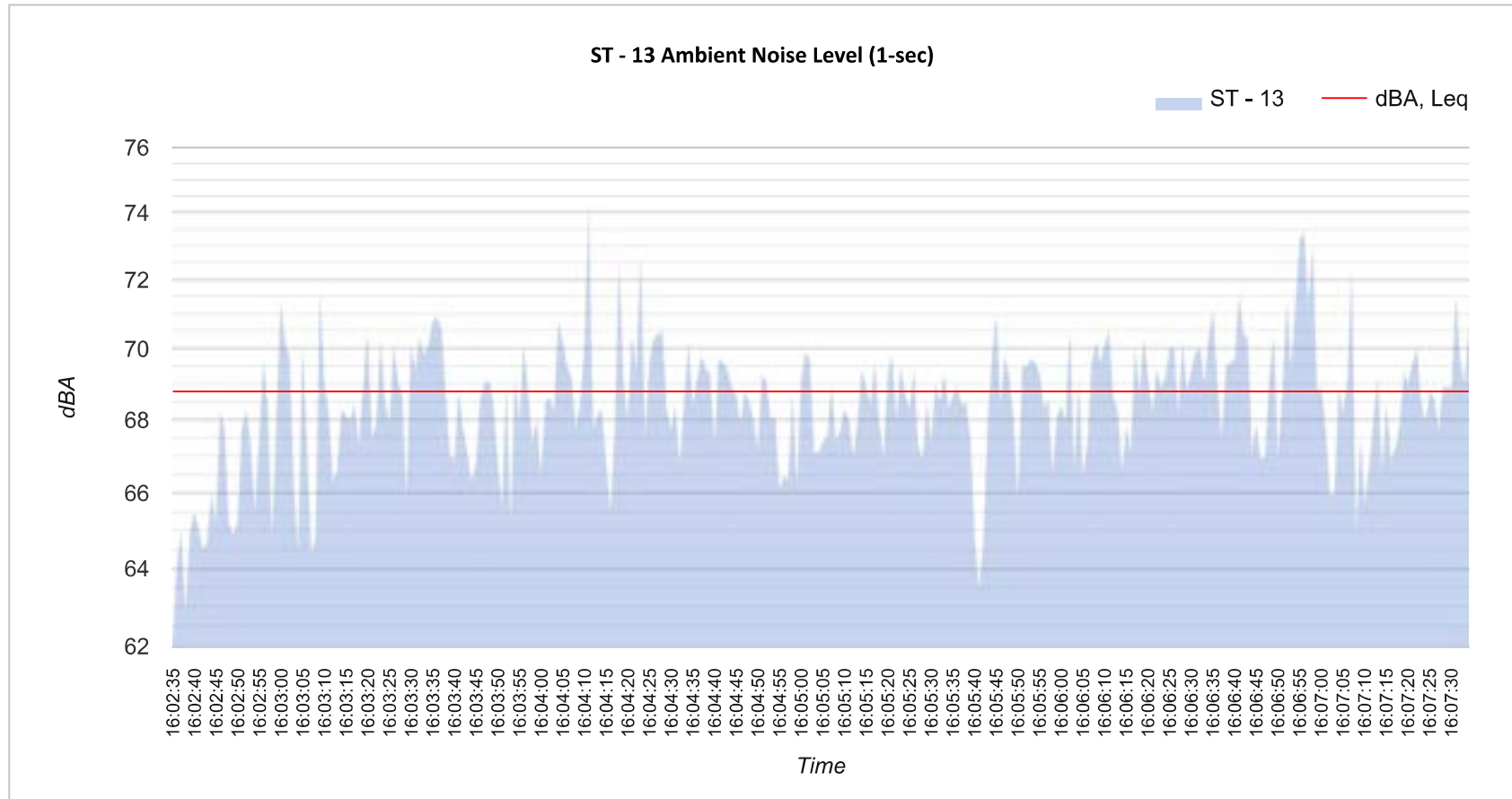


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 13	4:02 PM	4:08 PM	68.8	73.7	61.6	72.3	70.5	69.5	68.5	66

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-13 Leroux + Aspen (Busy Day) **Site Topo:** Flat **Noise Source(s) w/ Distance:**
Site Address/Location: Flagstaff, AZ **Meteorological Cond.:** 74 degrees, Partly Cloudy, Winds up to 12- 15 mph Traffic intersection, ~30'
Site Id: ST - 13 **Ground Type:** Asphalt



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-14 Mars Hill (Idle Day)

Site Observations:

Project: #/Name: 0357-2022-001

No/Light traffic. Taken overlooking downtown and most of city

Site Address/Location: Flagstaff, AZ

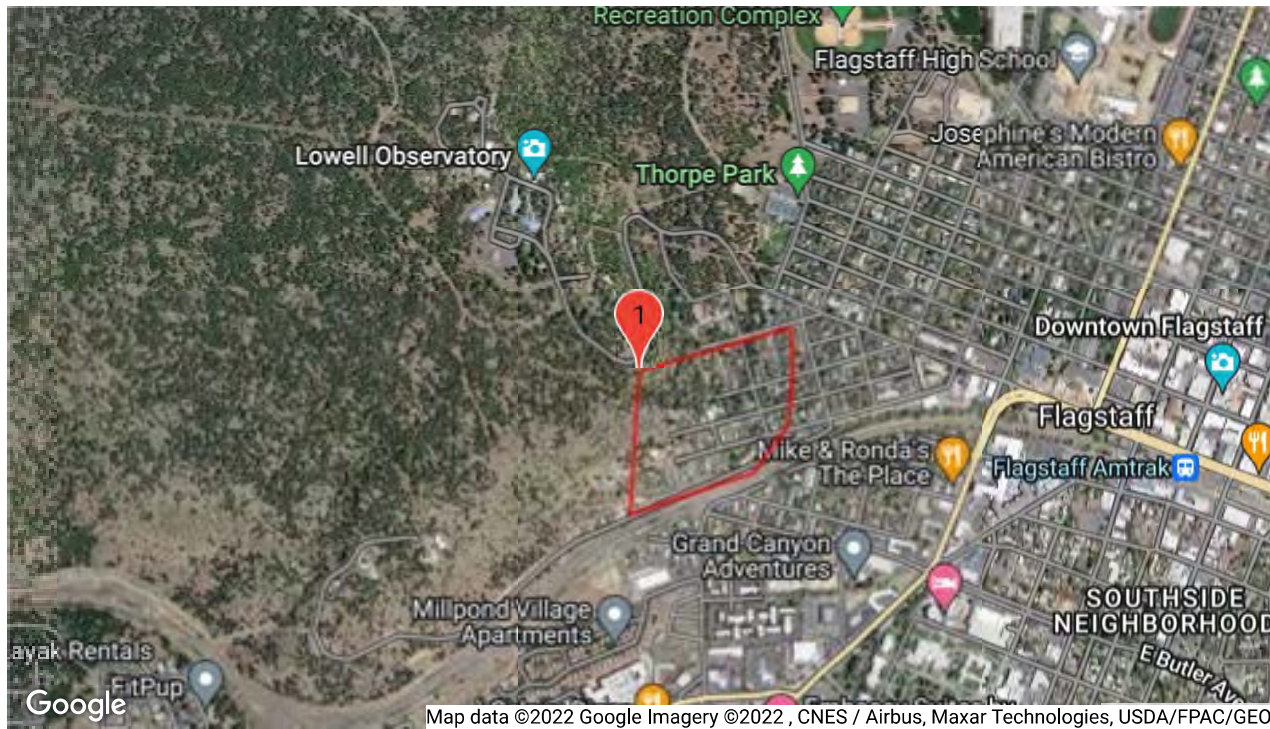
Date: 06/14/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NT1 **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 14



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-14 Mars Hill (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 14

Figure 1:



Figure 2:

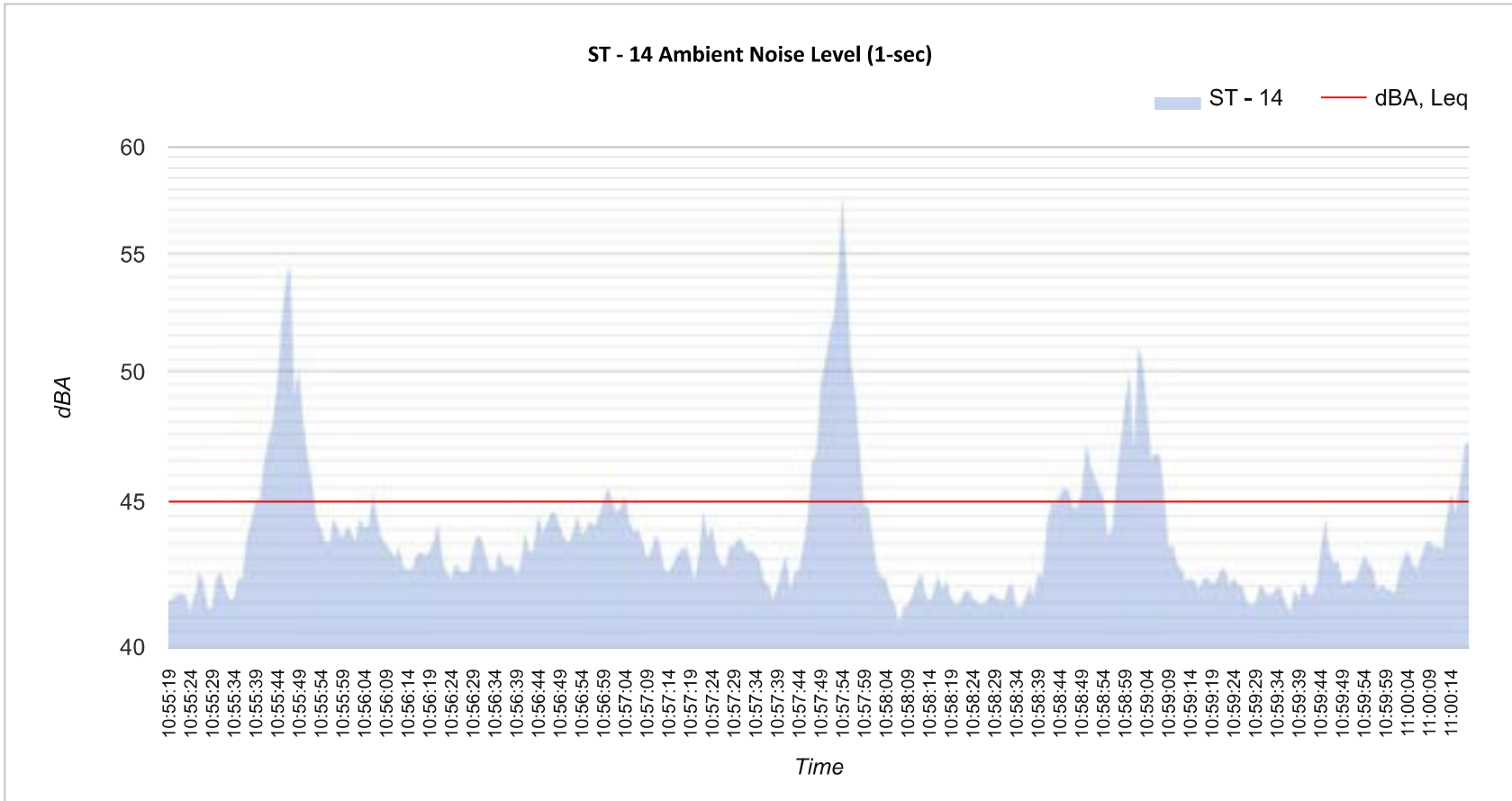


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 14	10:55 AM	11:01 AM	45	57.0	41.1	51.9	47.3	44.4	43.1	41.6

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-14 Mars Hill (Idle Day)	Site Topo:	Hillside	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	73 degrees, Sunny/Clear, Winds 5-8mph	Ambient City
Site Id:	ST - 14	Ground Type:	Grass/Gravel	

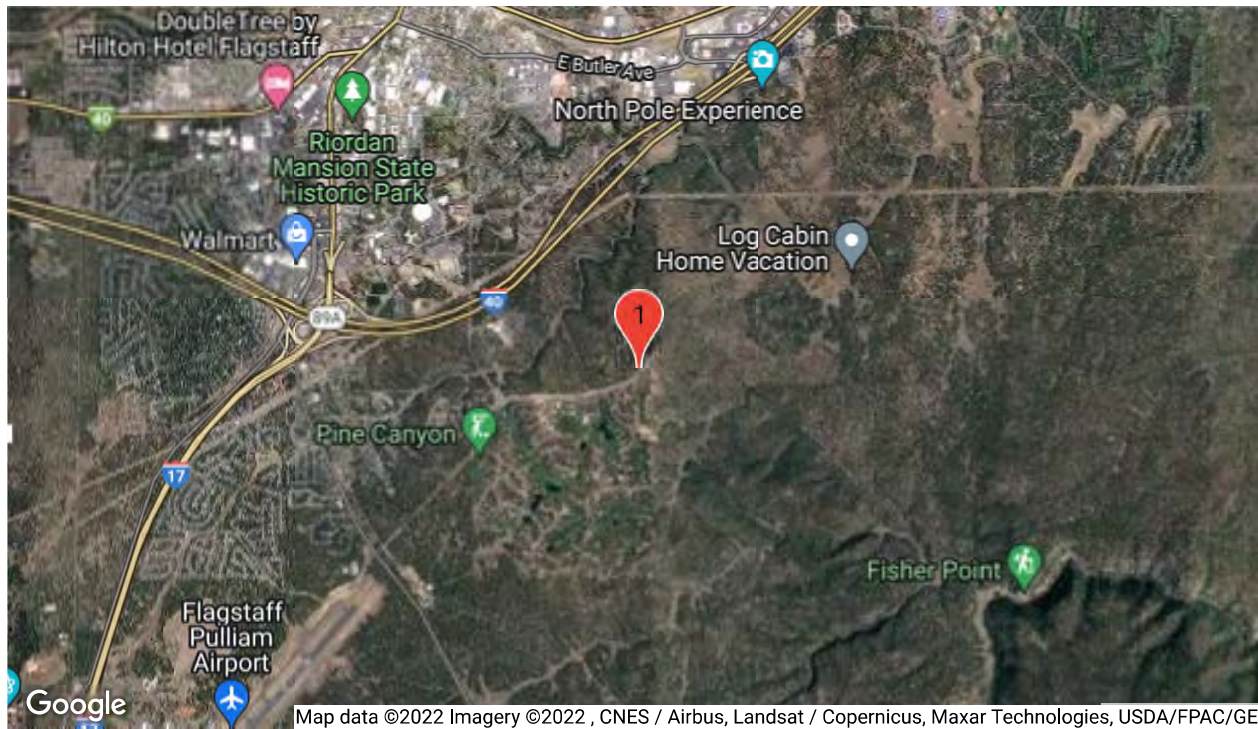


5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-15 Pine Canyon (Idle Day)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/14/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
Residential + Construction

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 15



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-15 Pine Canyon (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 15

Figure 1:



Figure 2:

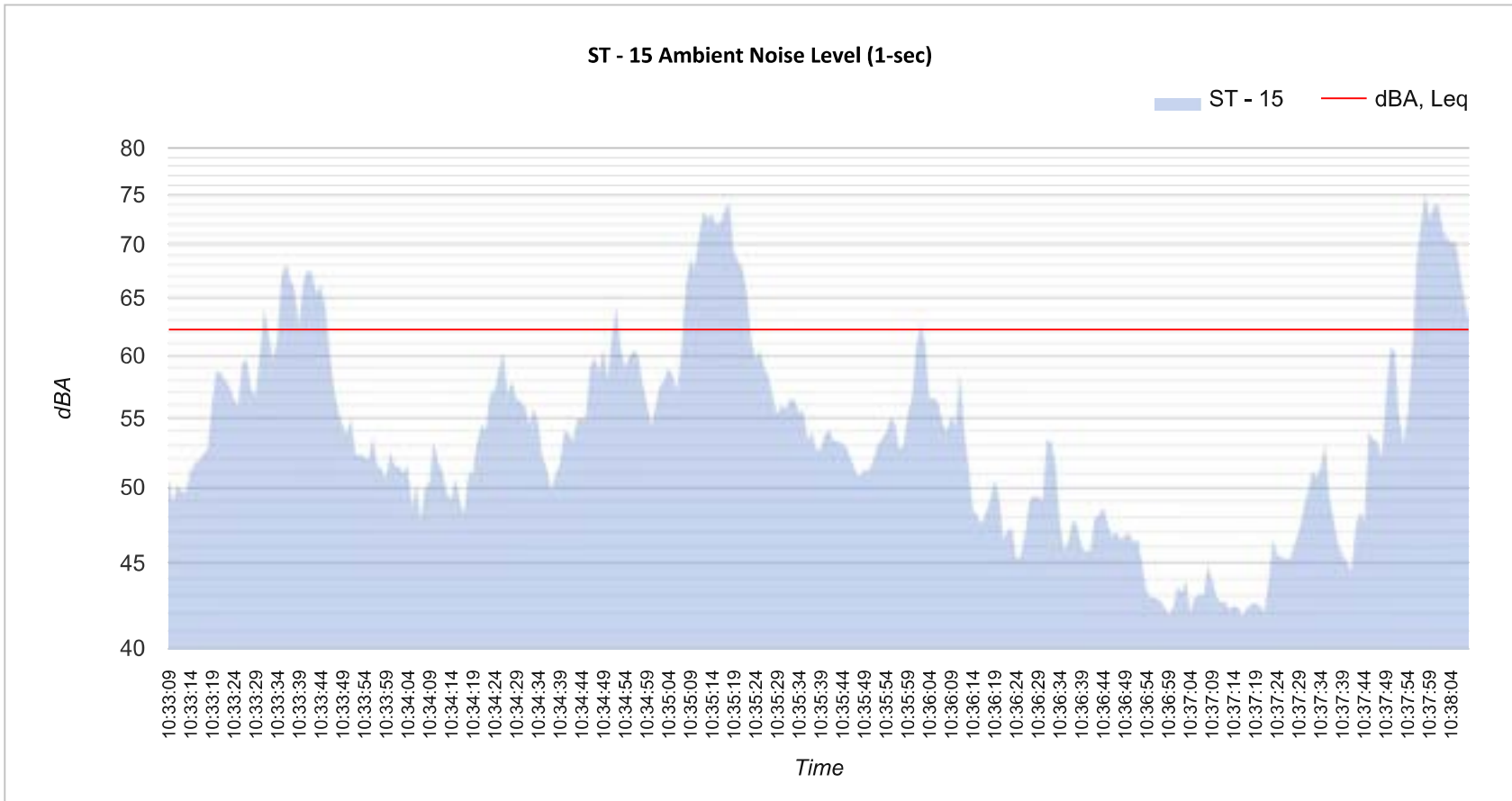


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 15	10:33 AM	10:39 AM	62.2	74.5	41.9	73	67.5	58.3	53.3	44.8

5-Minute Continuous Noise Measurement Datasheet - Cont.

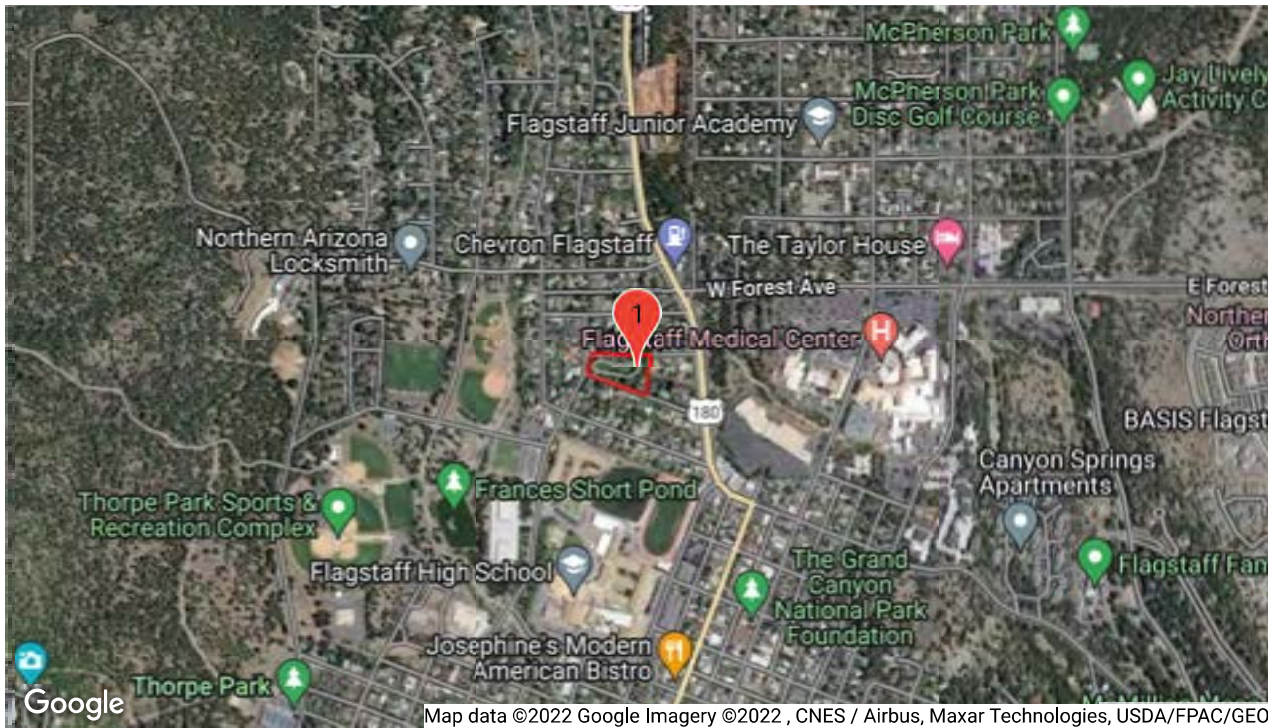
Project Name:	Ordinance: ST-15 Pine Canyon (Idle Day)	Site Topo:	Flat	Noise Source(s) w/ Distance:	
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	72 degrees, Sunny/Clear, Winds 5-8mph	Ambient Residential/Construction	
Site Id:	ST - 15	Ground Type:	Asphalt		



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-16 Jim Collen Park (Idle Day) **Site Observations:**
Project: #/Name: 0357-2022-001 Park/Residential
Site Address/Location: Flagstaff, AZ
Date: 06/14/2022
Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 16



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-16 Jim Collen Park (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 16

Figure 1:



Figure 2:

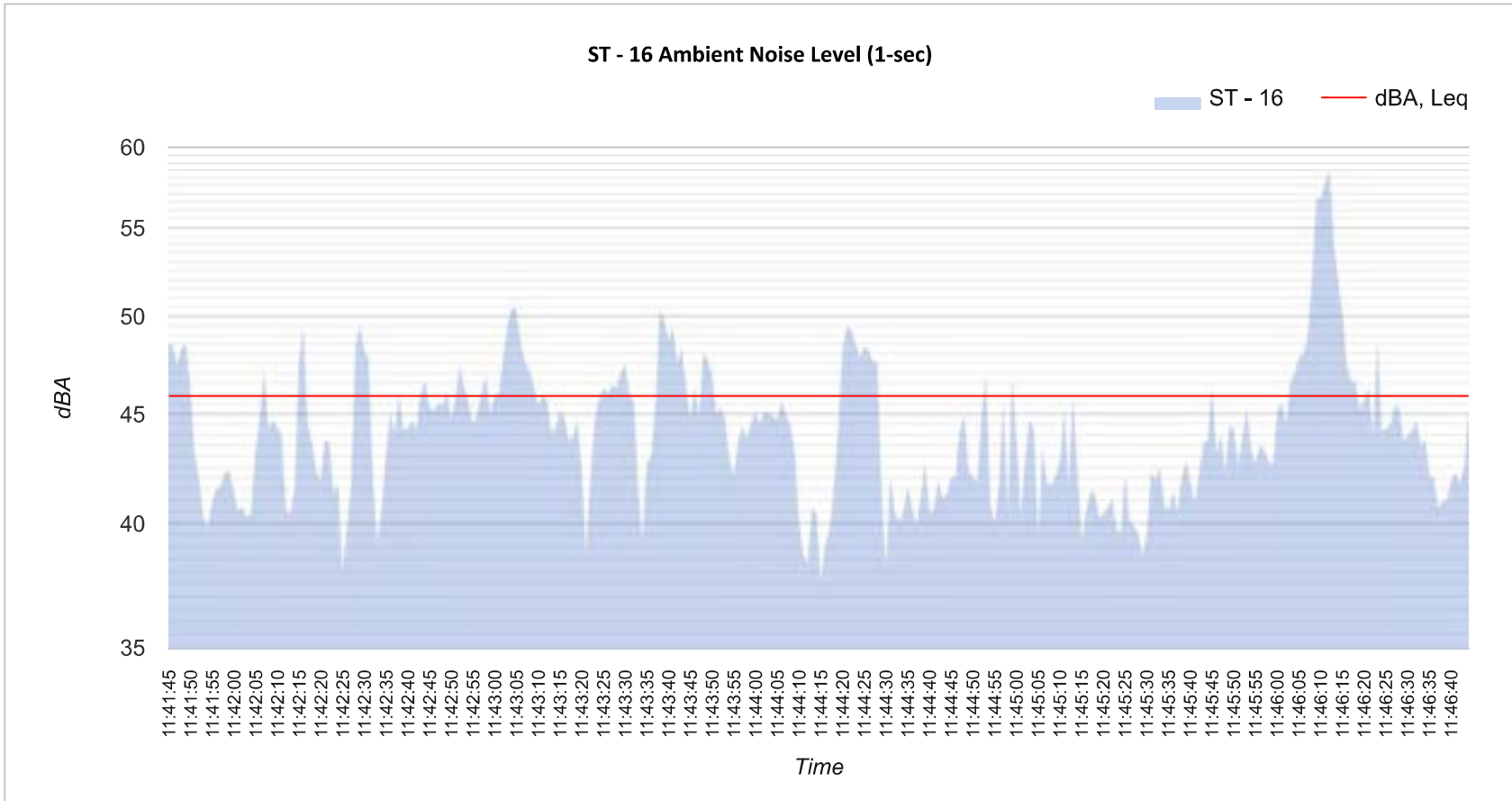


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 16	11:41 AM	11:47 AM	45.9	58.1	38.3	51.9	48.5	46	44.2	40.4

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-16 Jim Collen Park (Idle Day)	Site Topo:	Flat	Noise Source(s) w/ Distance:	
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	77 degrees, Sunny/Clear, Winds 5mph	Noise Source(s) w/ Distance:	Park/Residential
Site Id:	ST - 16	Ground Type:	Grass/Gravel		



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-17 Heritage Square (Idle Day)

Site Observations:

Project: #/Name: 0357-2022-001

little to no foot traffic

Site Address/Location: Flagstaff, AZ

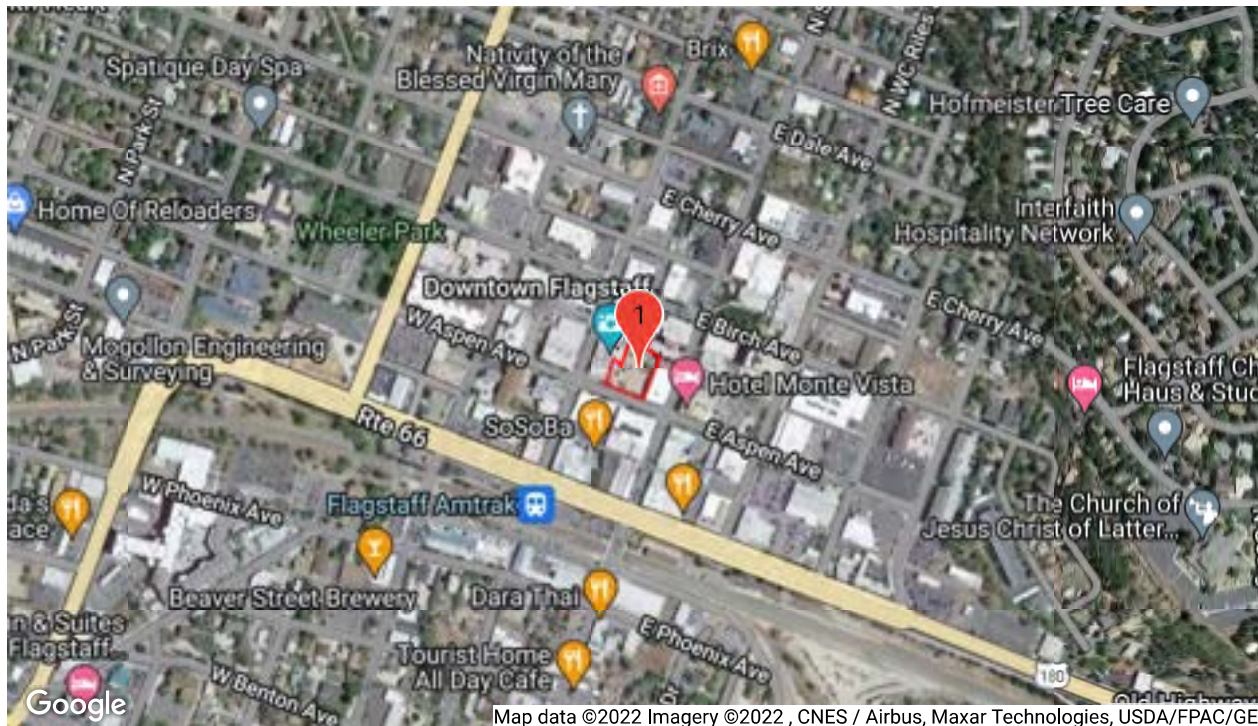
Date: 06/07/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 17



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-17 Heritage Square (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 17

Figure 1:



Figure 2:

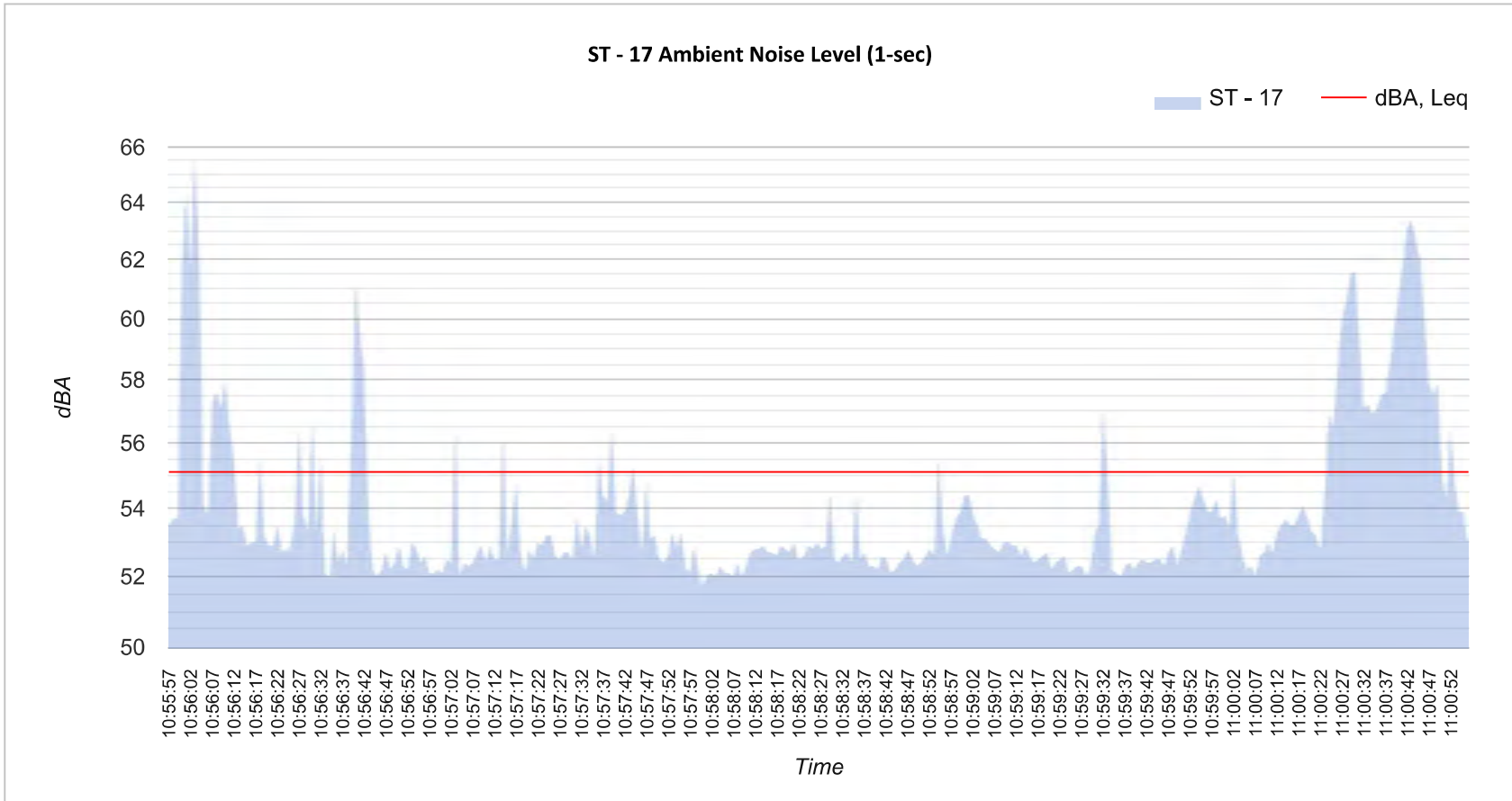


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 17	10:55 AM	11:01 AM	55.1	65.1	51.9	61.9	57.9	53.9	52.9	52.2

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-17 Heritage Square (Idle Day)	Site Topo:	Amphitheatre	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	79 degrees, Sunny/Clear, Winds 5-10mph	Foot Traffic
Site Id:	ST - 17	Ground Type:	Pavers	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-18 Heritage Square (Busy Day)

Site Observations:

Project: #/Name: 0357-2022-001

Dj, 150-200 people, heavy foot traffic

Site Address/Location: Flagstaff, AZ

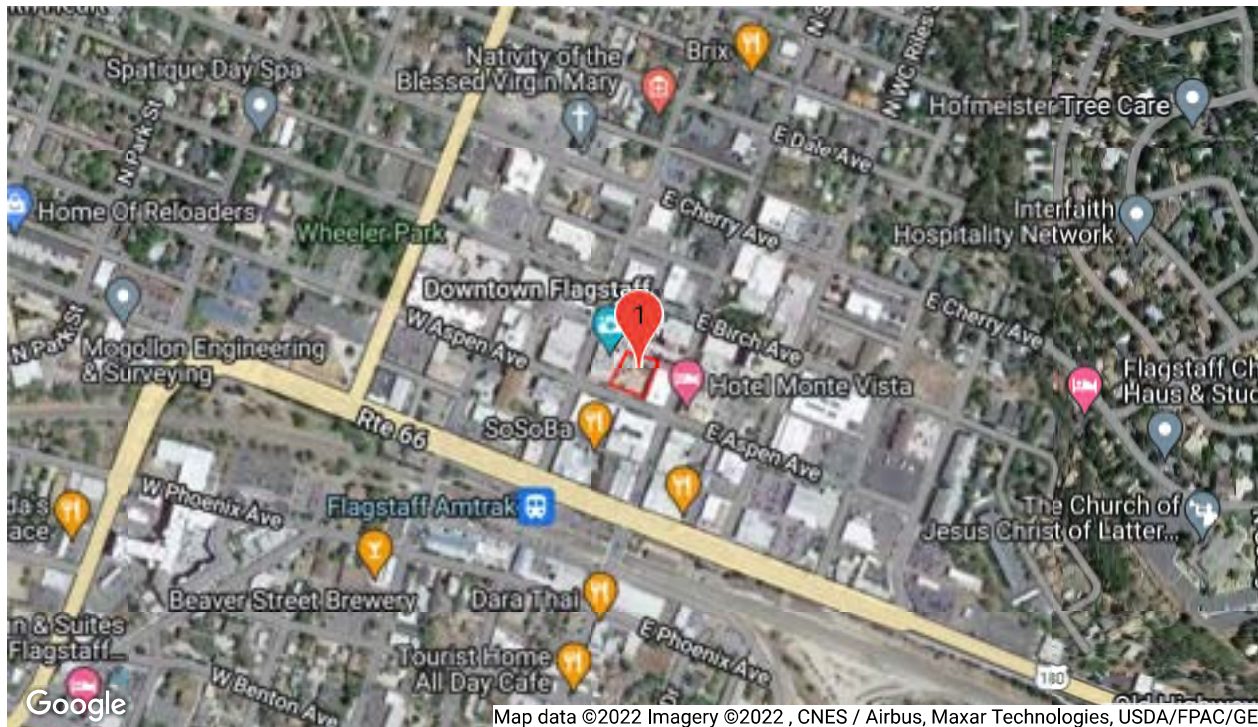
Date: 06/04/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST 18 - Heritage Square (Busy)



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-18 Heritage Square (Busy Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST 18 - Heritage Square (Busy)

Figure 1:



Figure 2:

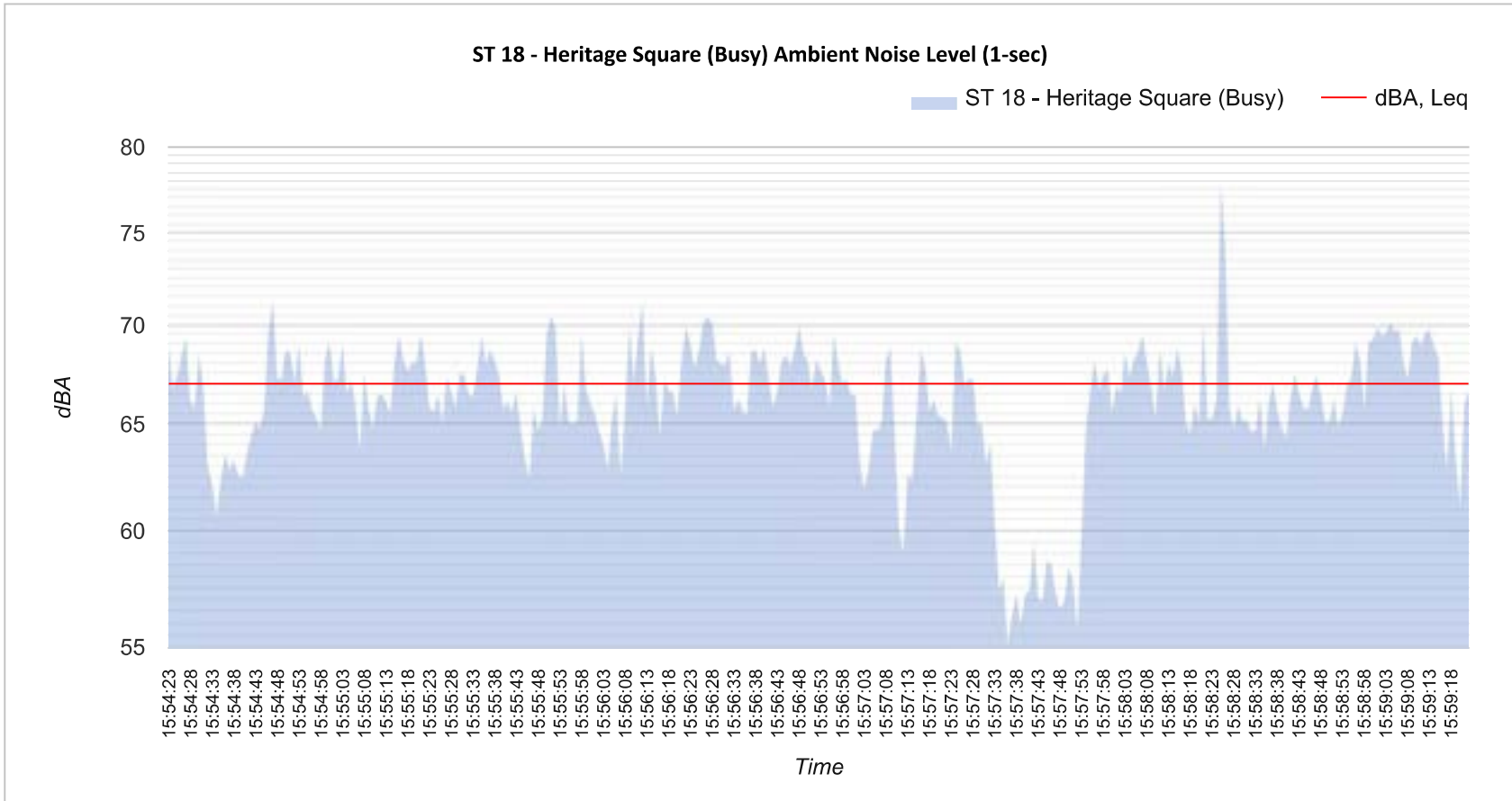


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST 18 - Heritage Square (Busy)	3:54 PM	4:00 PM	67	77.2	56.1	70.1	69.5	68.1	66.5	62.4

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-18 Heritage Square (Busy Day) **Site Topo:** Amphitheatre **Noise Source(s) w/ Distance:**
Site Address/Location: Flagstaff, AZ **Meteorological Cond.:** 74 Degrees, Light Clouds, Wind @ 10 mph DJ and public, 80' from DJ
Site Id: ST 18 - Heritage Square (Busy) **Ground Type:** Pavers



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-19 Collins Irish Pub (Idle)

Site Observations:

Project: #/Name: 0357-2022-001

20% capacity, light music, little to no foot/car traffic

Site Address/Location: Flagstaff, AZ

Date: 06/15/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 19



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-19 Collins Irish Pub (Idle)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 19

Figure 1:



Figure 2:

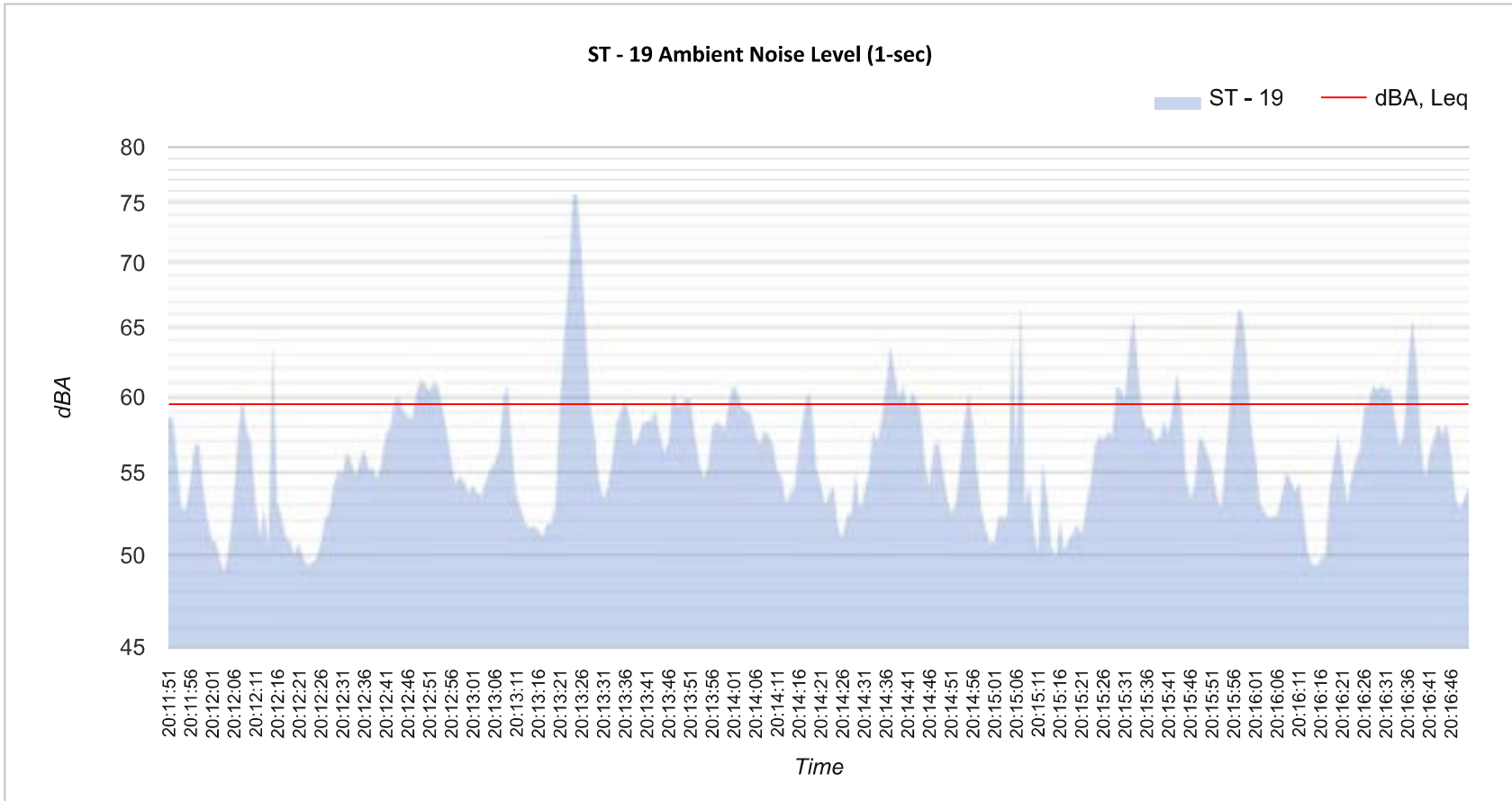


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 19	8:11 PM	8:17 PM	59.5	75.7	49.5	66	60.9	58.7	55.9	51.2

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-19 Collins Irish Pub (Idle)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	73 degrees, Clear, no wind	Bar, ~45'
Site Id:	ST - 19	Ground Type:	Asphalt	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-20 Collins Irish Pub (Busy) **Site Observations:**

Project: #/Name: 0357-2022-001 Moderate foot traffic, on patio, loud music 80% capacity. Needed to pause at one point because a bouncer approached me.

Site Address/Location: Flagstaff, AZ

Date: 06/17/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 20



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-20 Collins Irish Pub (Busy)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 20

Figure 1:



Figure 2:

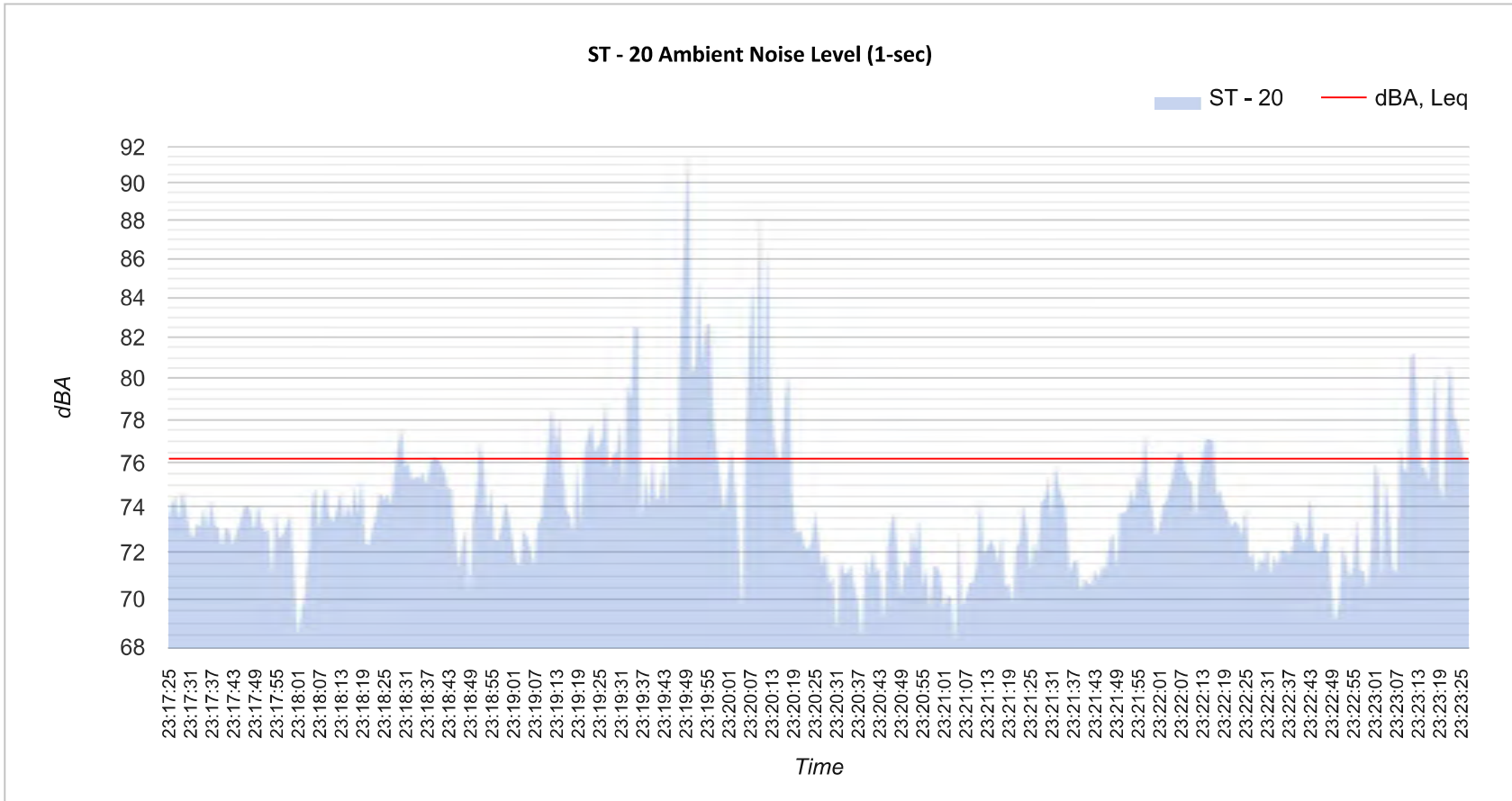


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 20	11:17 PM	11:24 PM	76.2	91.8	68.8	82.7	78.3	75.6	73.6	71

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-20 Collins Irish Pub (Busy)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	64 degrees, Clear, No winds	Bar, ~50'
Site Id:	ST - 20	Ground Type:	Asphalt	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-21 Orpheum (During Show Busy)

Site Observations:

Project: #/Name: 0357-2022-001

Moderate foot traffic, patios full to the east, live music inside the Orpheum

Site Address/Location: Flagstaff, AZ

Date: 06/15/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 21



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-21 Orpheum (During Show Busy)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 21

Figure 1:

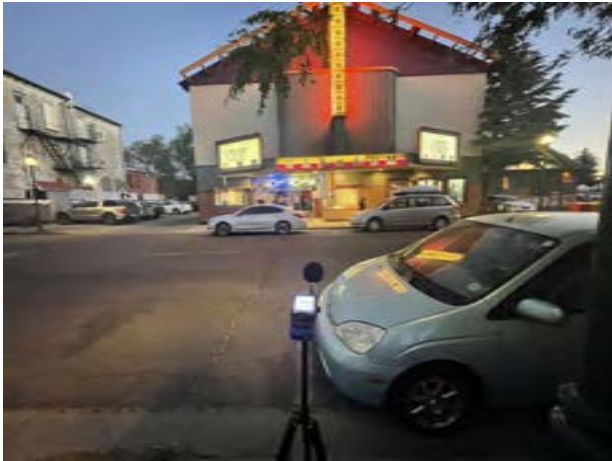


Figure 2:

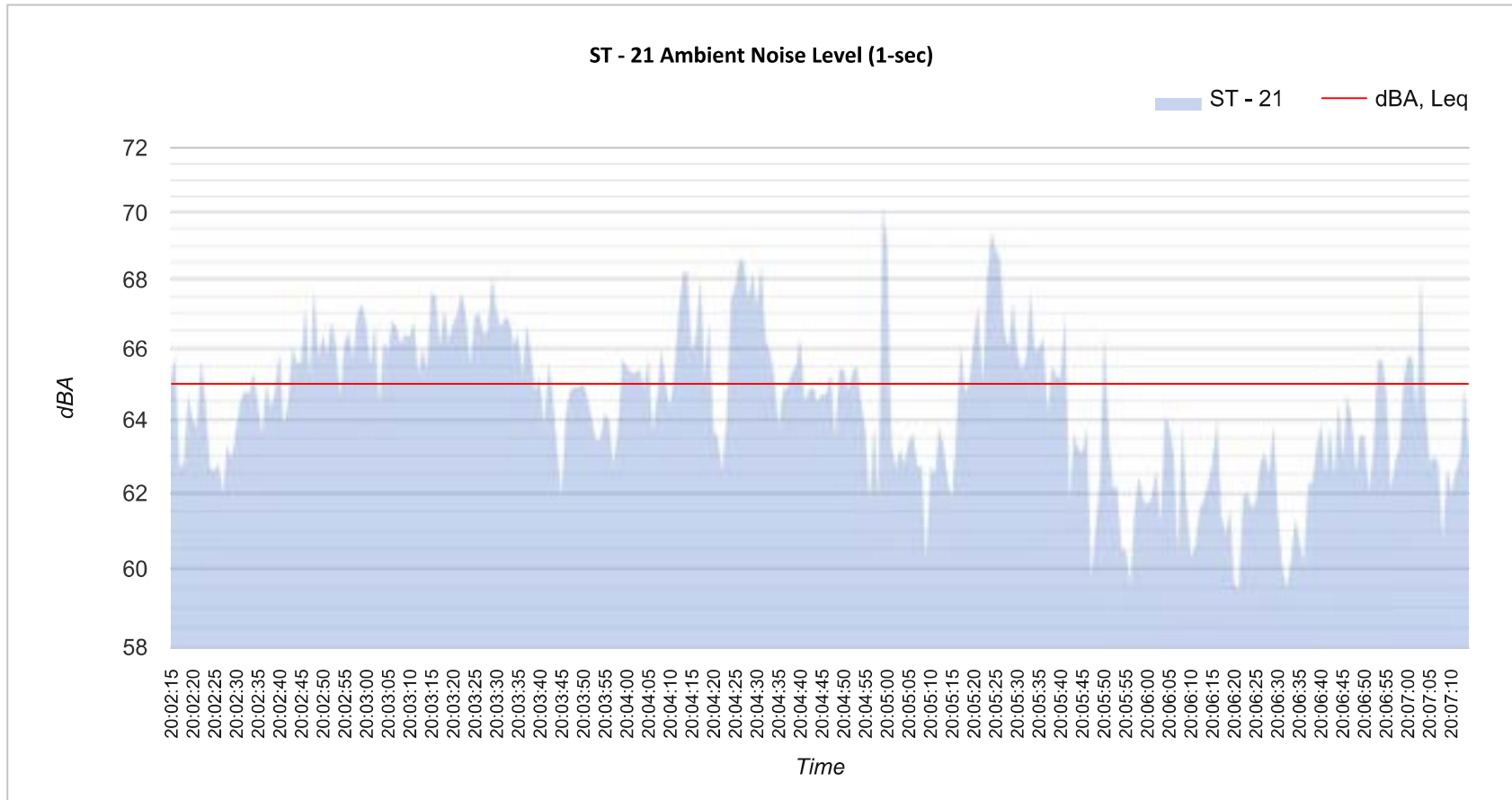


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 21	8:02 PM	8:08 PM	65	71.3	59.6	68.5	67.3	66	64.7	61.8

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-21 Orpheum (During Show Busy)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	73 degrees, Sunny/Clear, no wind	Live music venue, ~50'
Site Id:	ST - 21	Ground Type:	Asphalt	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-22 Lumberyard Patio (Busy)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/04/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
90% full Patio 60-80 people, light music, moderate foot traffic

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 22



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-22 Lumberyard Patio (Busy)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 22

Figure 1:



Figure 2:

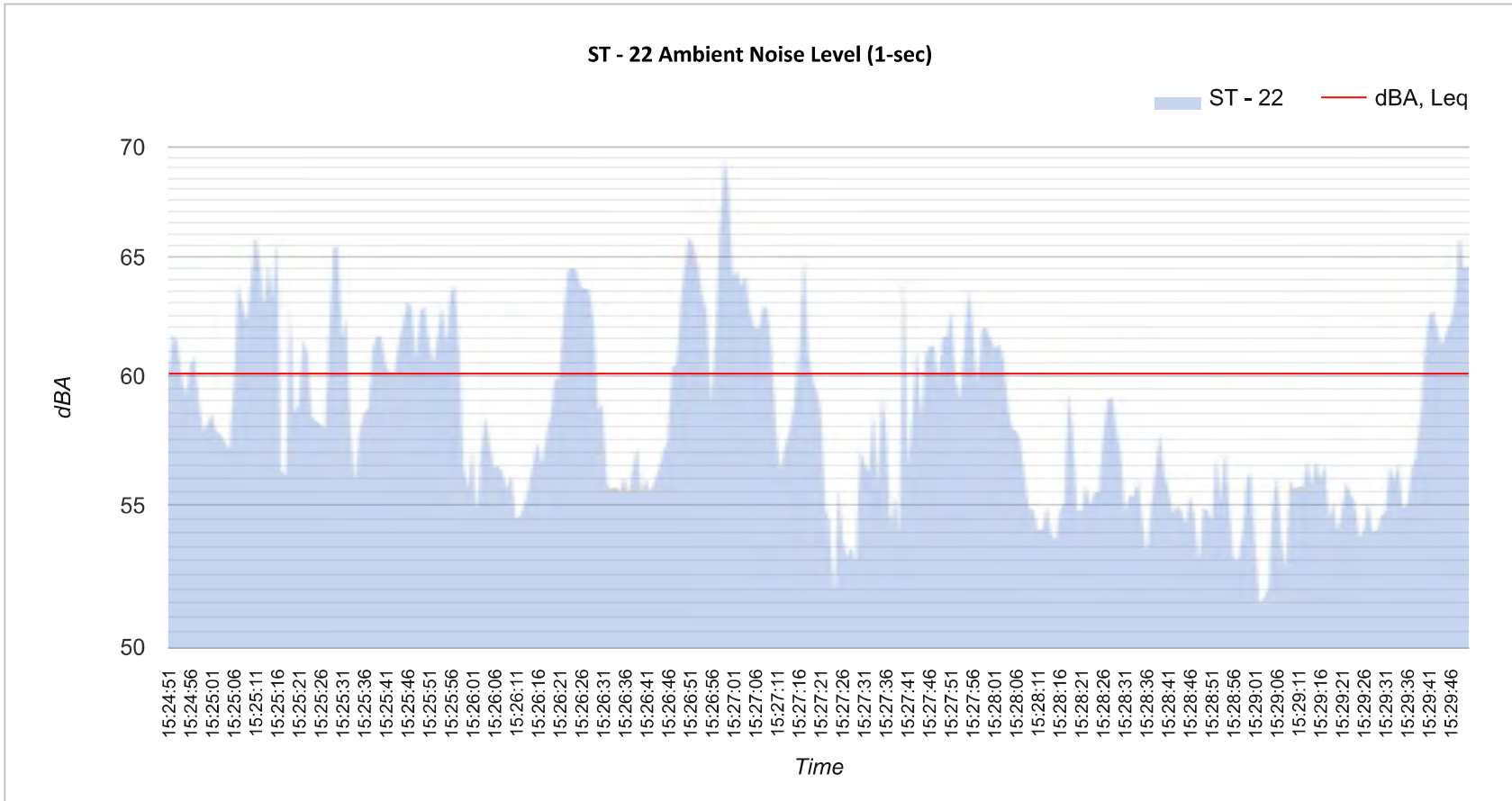


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 22	3:24 PM	3:30 PM	60.1	69.0	51.9	65.9	64	61.5	57.8	54.5

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-22 Lumberyard Patio (Busy)	Site Topo:	Flat	Noise Source(s) w/ Distance:	
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	80 degrees, Sunny/light clouds, Winds 10-15 mph	Patio, ~40'	
Site Id:	ST - 22	Ground Type:	Asphalt		



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-23 Yucca North (During Show Busy)

Site Observations:

Project: #/Name: 0357-2022-001

Moderate foot traffic, smokers outside, live music inside

Site Address/Location: Flagstaff, AZ

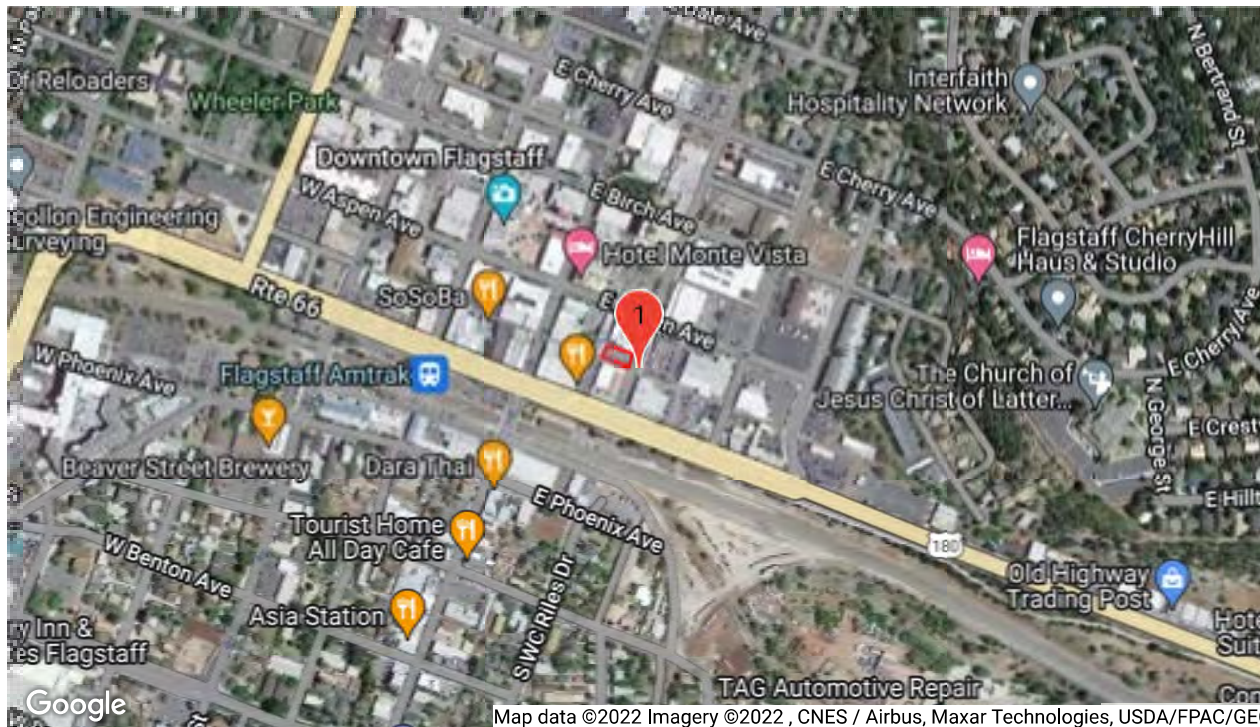
Date: 06/17/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NT1 **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 23



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-23 Yucca North (During Show Busy)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 23

Figure 1:



Figure 2:

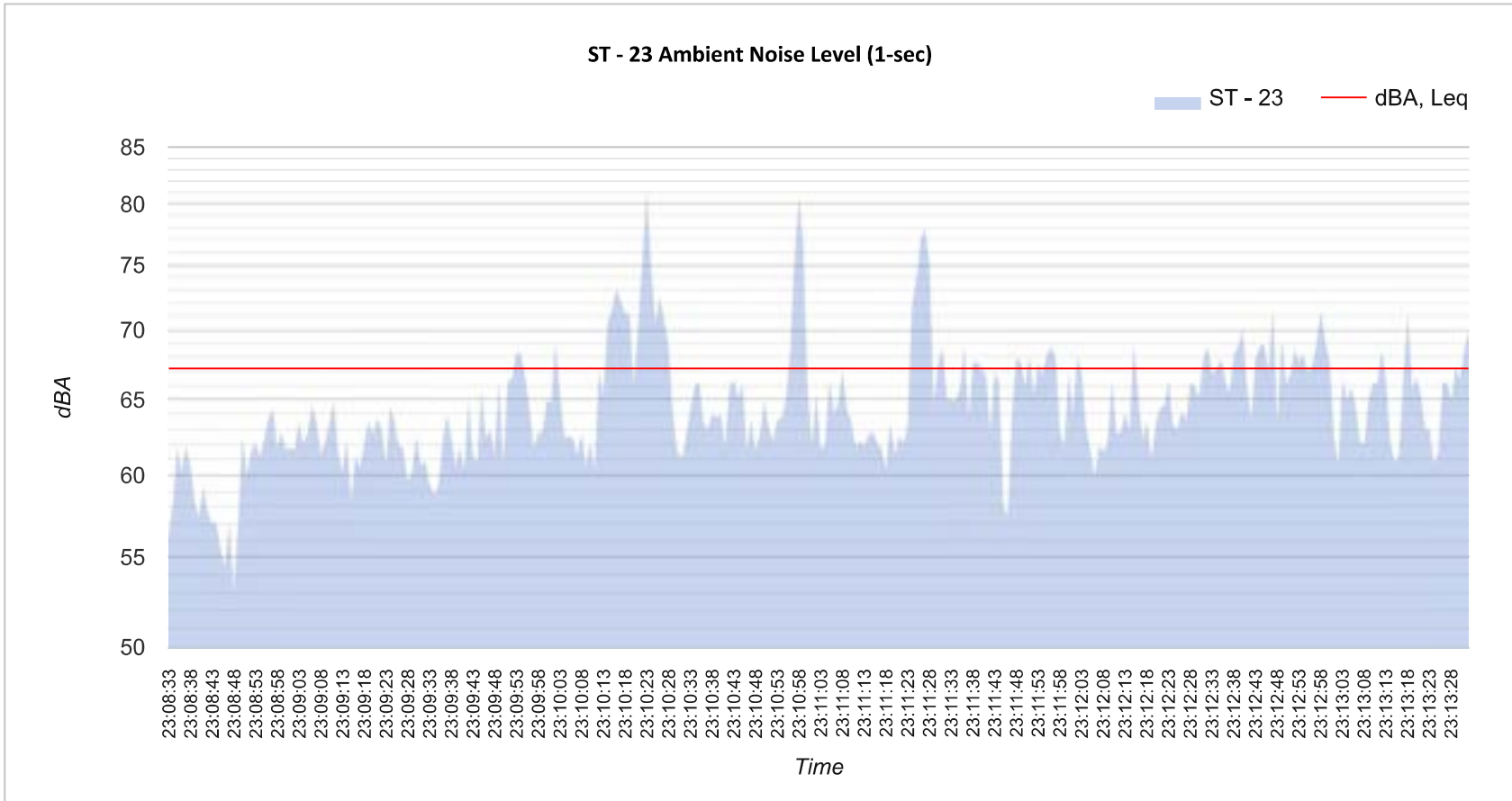


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 23	11:08 PM	11:14 PM	67.2	79.6	54.5	75.4	70	66.7	64	60.6

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-23 Yucca North (During Show Busy) **Site Topo:** Flat **Noise Source(s) w/ Distance:**
Site Address/Location: Flagstaff, AZ **Meteorological Cond.:** 64 degrees, Clear, No wind Venue/Bar ~40'
Site Id: ST - 23 **Ground Type:** Asphalt

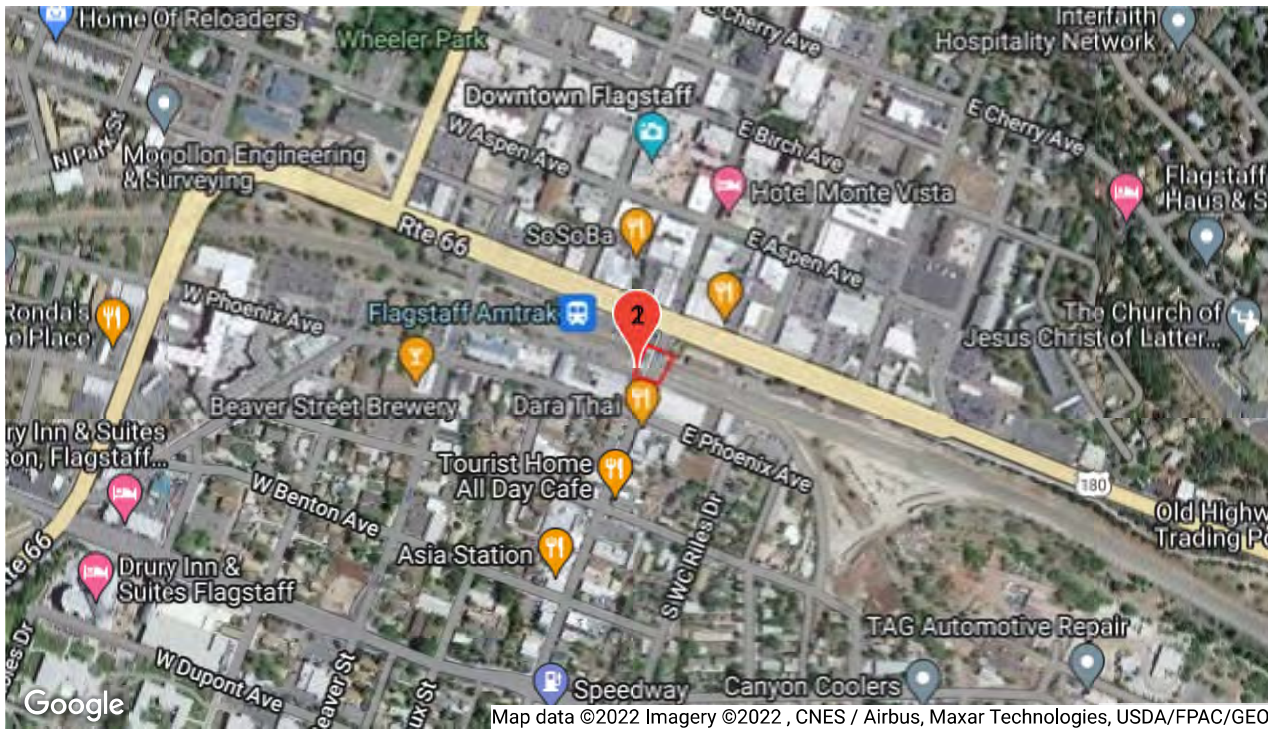


5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-24 SW Train Xing San Francisco (No Train)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/15/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
Moderate foot traffic, No train

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 24



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-24 SW Train Xing San Francisco (No Train)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 24

Figure 1:



Figure 2:

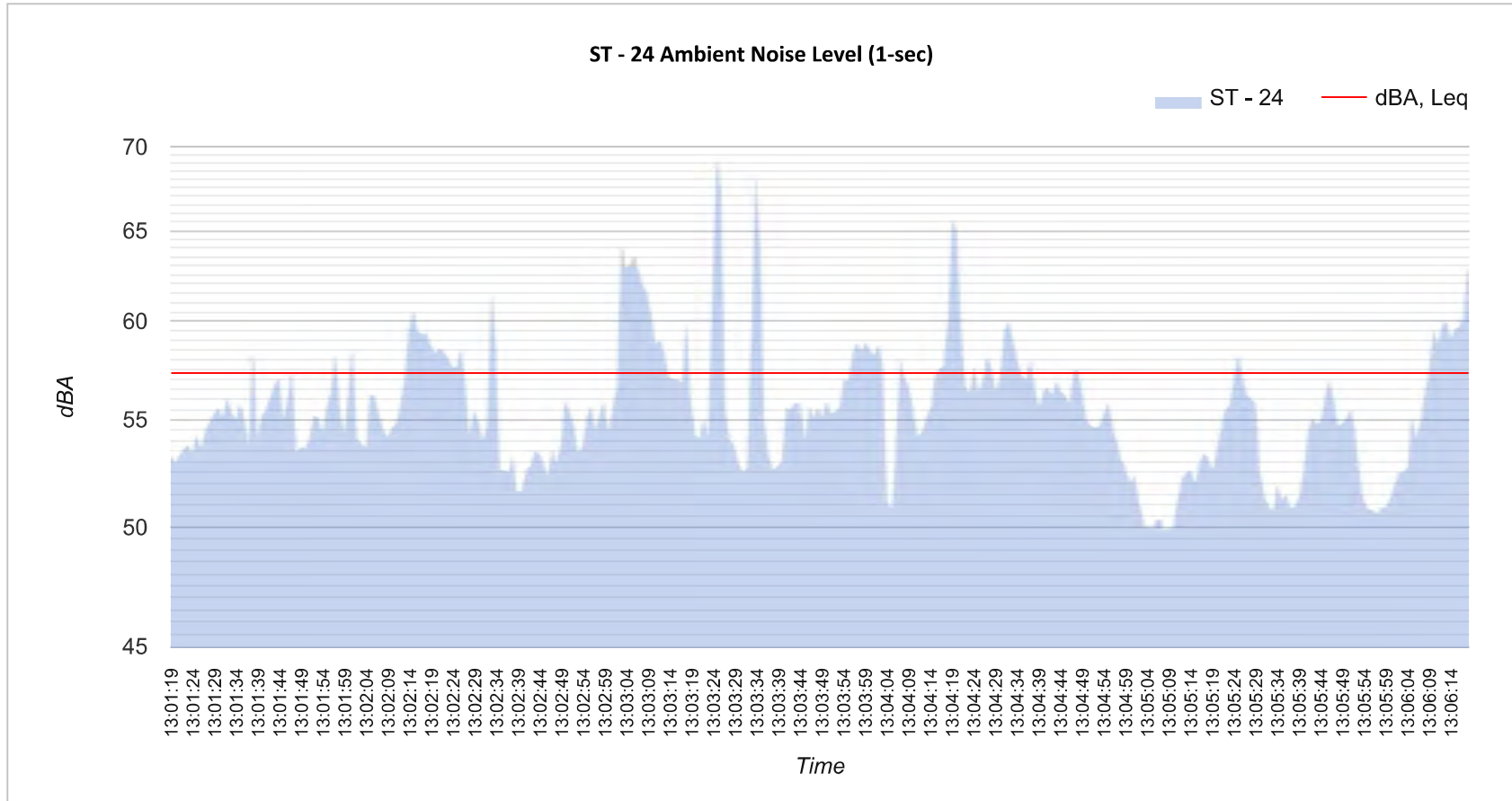


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 24	1:01 PM	1:07 PM	57.3	69.1	49.8	64	59.8	57.1	55.4	52

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-24 SW Train Xing San Francisco (No	Site Topo:	Noise Source(s) w/ Distance:
	Train)	Meteorological Cond.:	84 degrees, Sunny/Clear, Winds 5-10mph Train Xing, No Train
Site Address/Location:	Flagstaff, AZ	Ground Type:	Grass/Gravel
Site Id:	ST - 24		



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-25 Flag Brew Co (Idle Day)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/07/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
Patio, light music, light foot traffic

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 25



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-25 Flag Brew Co (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 25

Figure 1:



Figure 2:

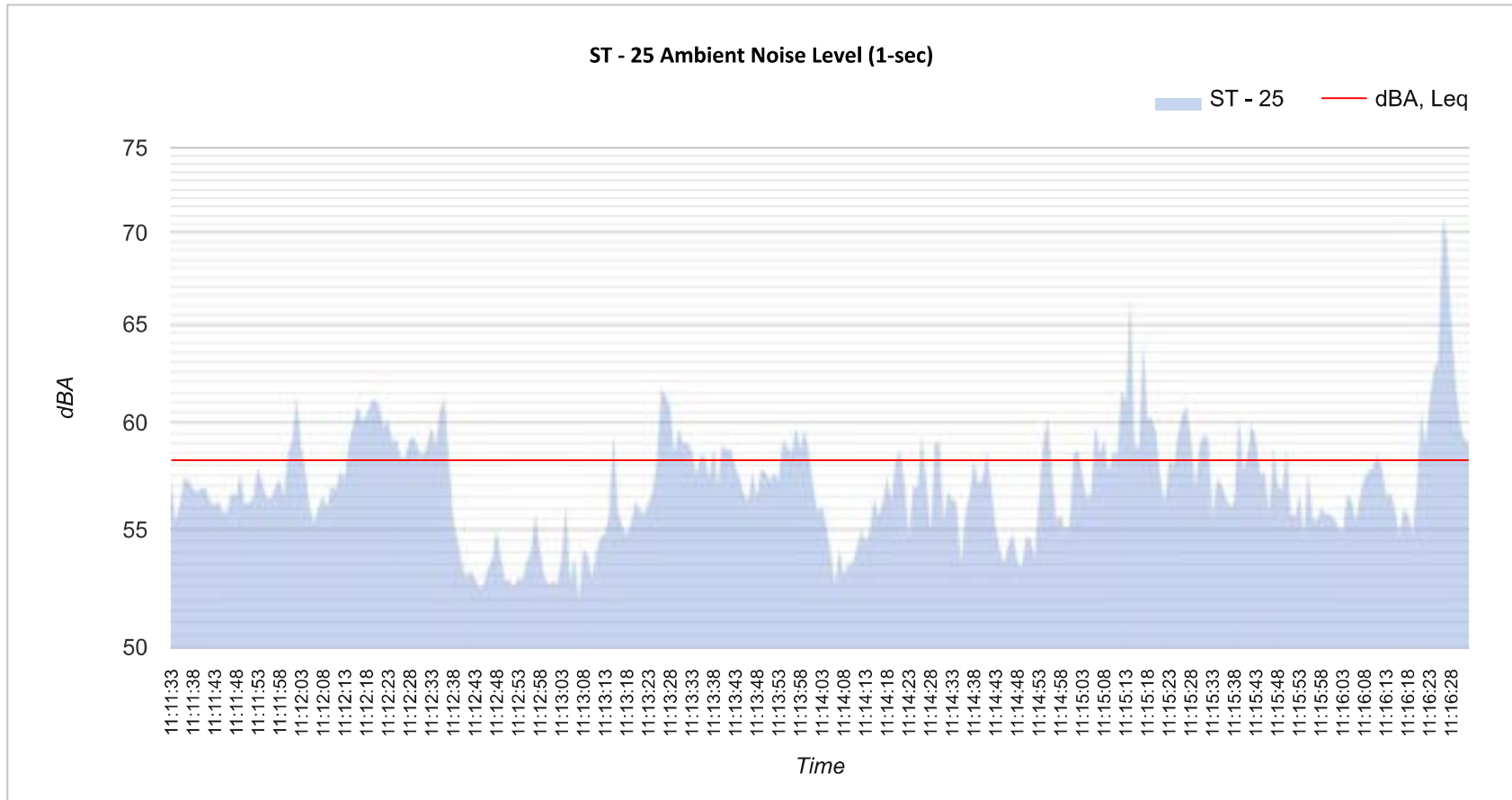


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 25	11:11 AM	11:17 AM	58.2	69.6	52.5	62.6	60.4	58.7	56.9	53.8

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-25 Flag Brew Co (Idle Day)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	78 degrees, Sunny/Clear, No wind	Patio, ~20'
Site Id:	ST - 25	Ground Type:	Pavers	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-26 Flag Brew Co (During Show Busy)

Site Observations:

Project: #/Name: 0357-2022-001

Moderate foot traffic, on patio, live music outside on patio

Site Address/Location: Flagstaff, AZ

Date: 06/17/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 26



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-26 Flag Brew Co (During Show Busy)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 26

Figure 1:



Figure 2:

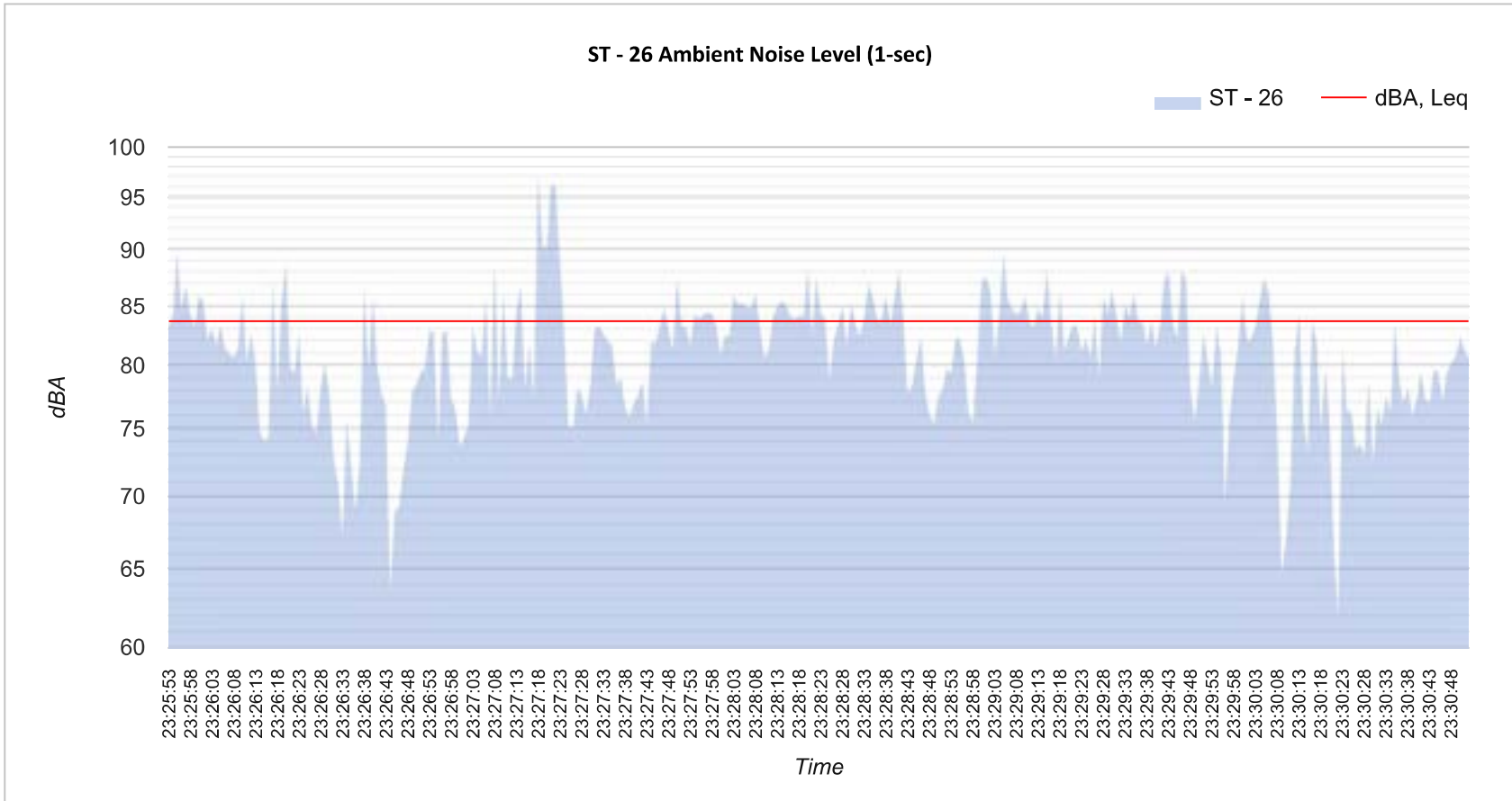


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 26	11:25 PM	11:31 PM	83.7	97.6	68.1	89.6	86.8	84.1	81.8	74.8

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-26 Flag Brew Co (During Show Busy)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	64 degrees, Clear, no wind	Patio, ~25'
Site Id:	ST - 26	Ground Type:	Pavers	

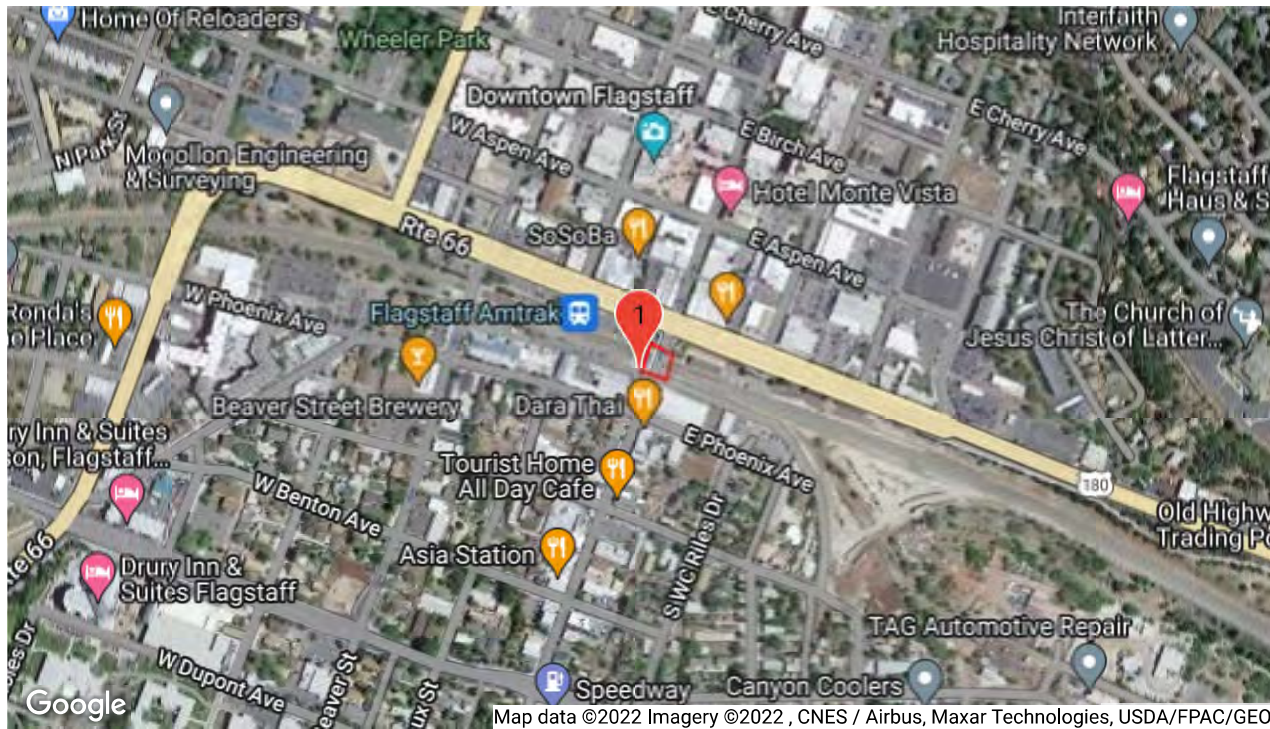


5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-27 SW Train Xing San Francisco (During Train)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/04/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
During Train

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 27



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-27 SW Train Xing San Francisco (During Train)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 27

Figure 1:



Figure 2:

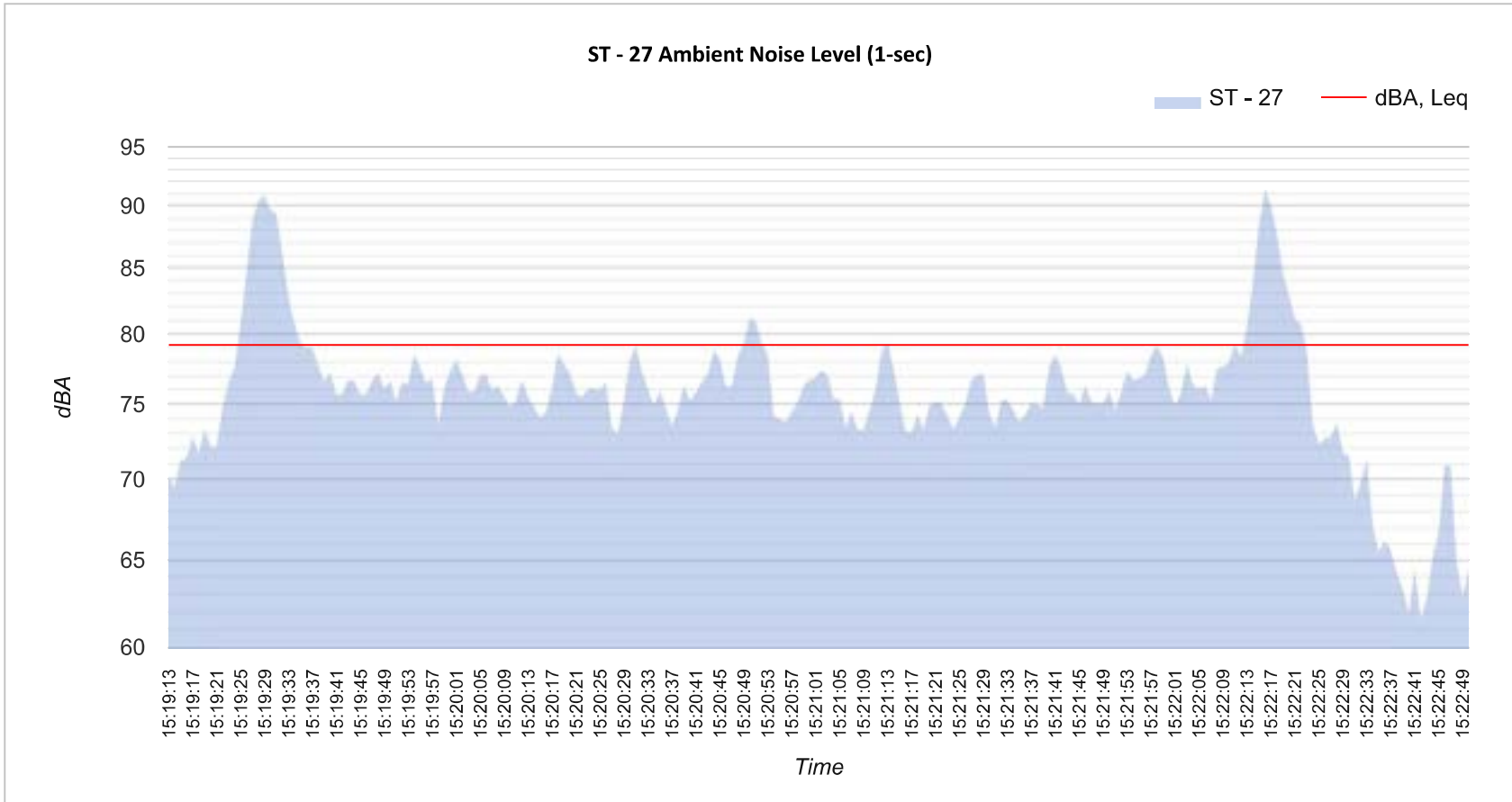


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 27	3:19 PM	3:23 PM	79.2	90.4	62.3	89.6	80.9	77.5	75.9	71.3

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-27 SW Train Xing San Francisco	Site Topo:	Flat	Noise Source(s) w/ Distance:
(During Train)		Meteorological Cond.:	76 degrees, Partly cloudy, Winds 10-15mph Train, ~45'	
Site Address/Location:	Flagstaff, AZ	Ground Type:	Grass/Gravel	
Site Id:	ST - 27			



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-28 Southside Tavern Entrance (Idle Day)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/15/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
Light/Moderate traffic, little/no Foot traffic

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 28



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-28 Southside Tavern Entrance (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 28

Figure 1:



Figure 2:

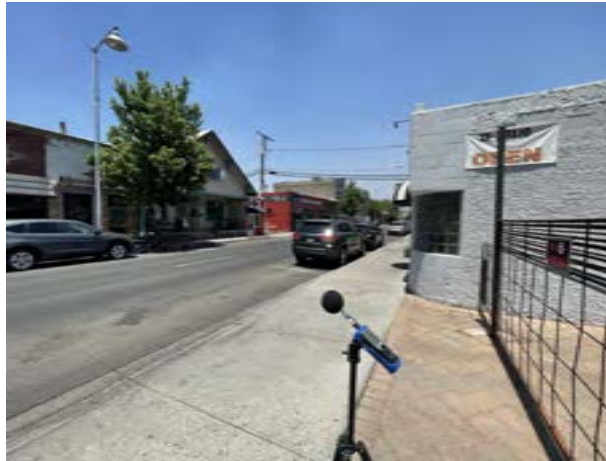
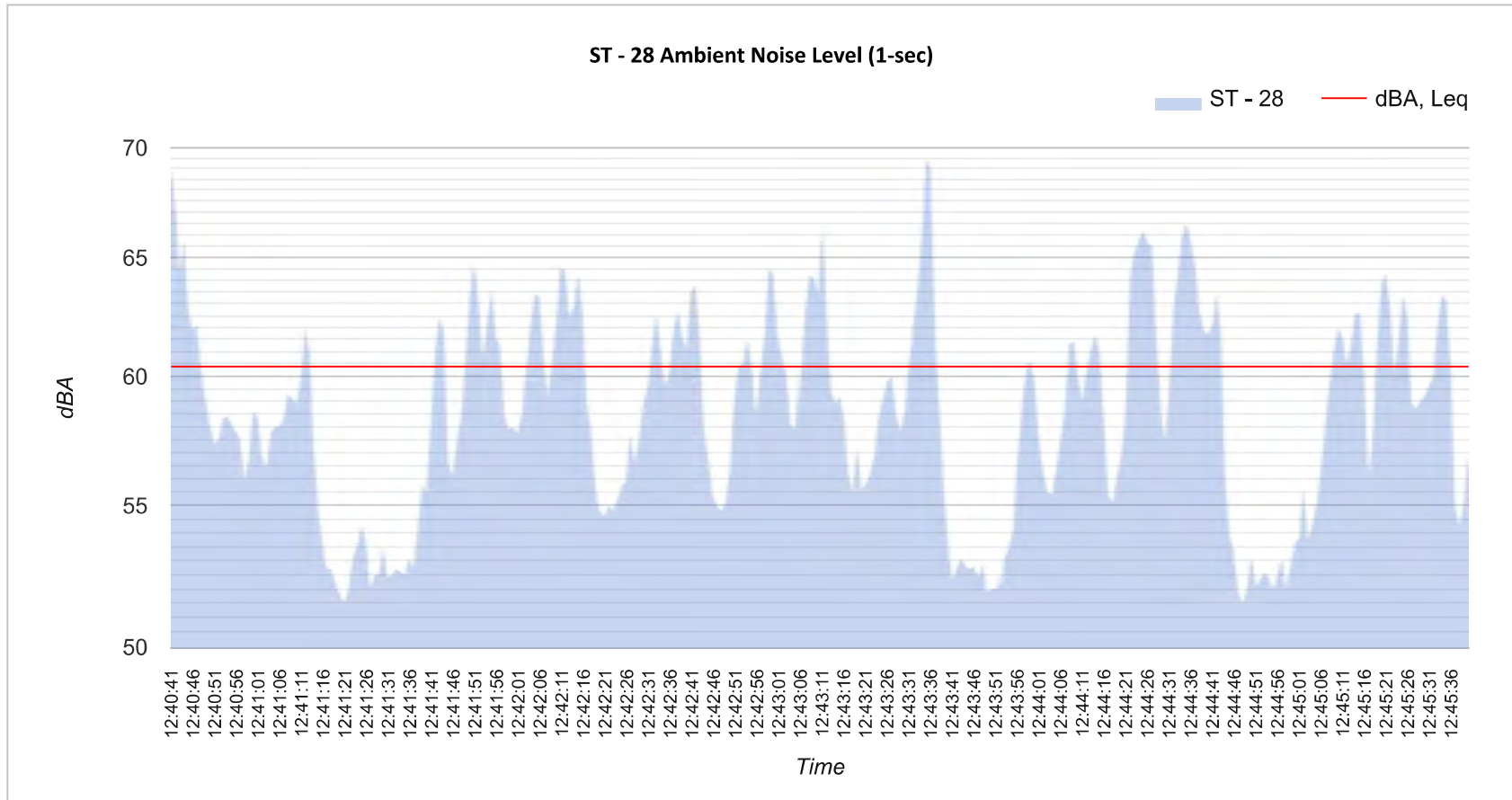


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 28	12:40 PM	12:46 PM	60.4	73.2	51.6	66.2	64.2	61.7	58.7	52.7

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-28 Southside Tavern Entrance (Idle Day) **Site Topo:** Flat **Noise Source(s) w/ Distance:**
Site Address/Location: Flagstaff, AZ **Meteorological Cond.:** 82 degrees, Sunny/Clear, Winds 2-5 mph Traffic ~20'
Site Id: ST - 28 **Ground Type:** Asphalt



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-29 Southside Tavern Entrance (Night)

Site Observations:

Project: #/Name: 0357-2022-001

Music, talking, light foot traffic

Site Address/Location: Flagstaff, AZ

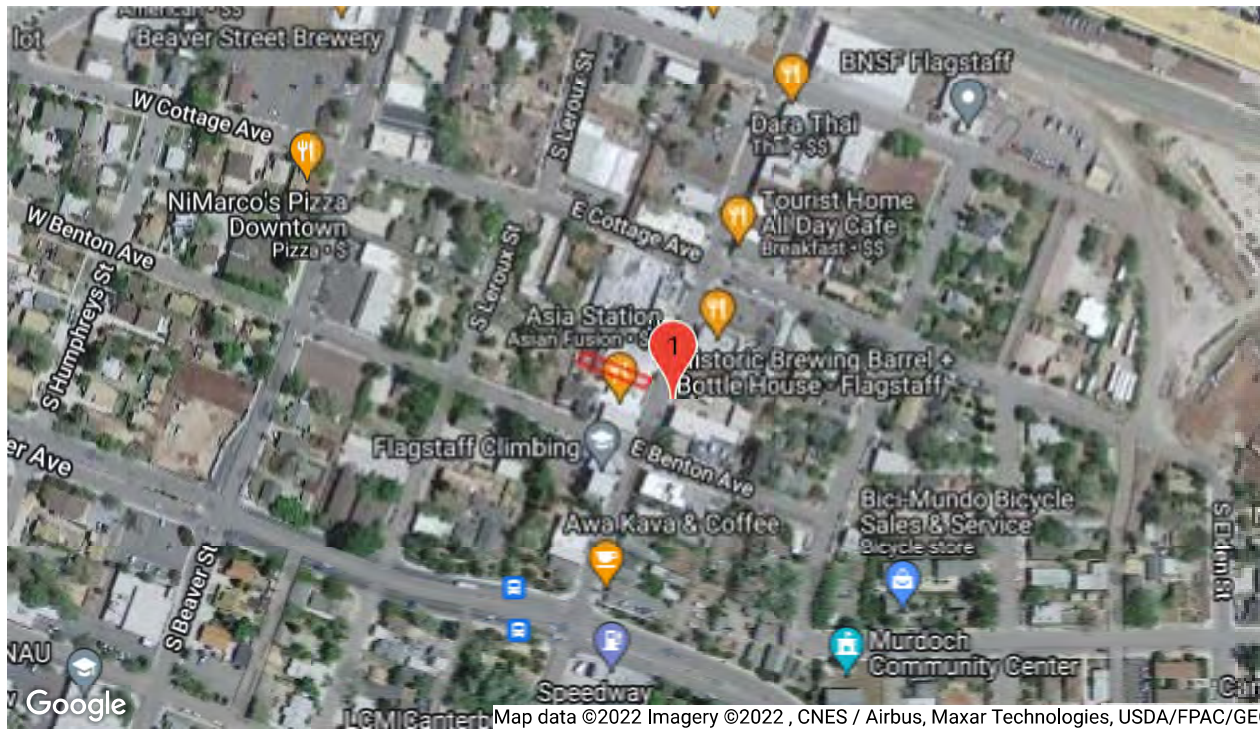
Date: 06/04/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST - 29



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-29 Southside Tavern Entrance (Night)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 29

Figure 1:

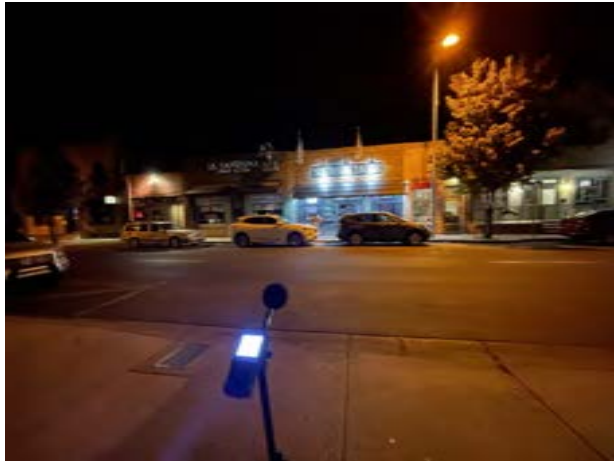


Figure 2:

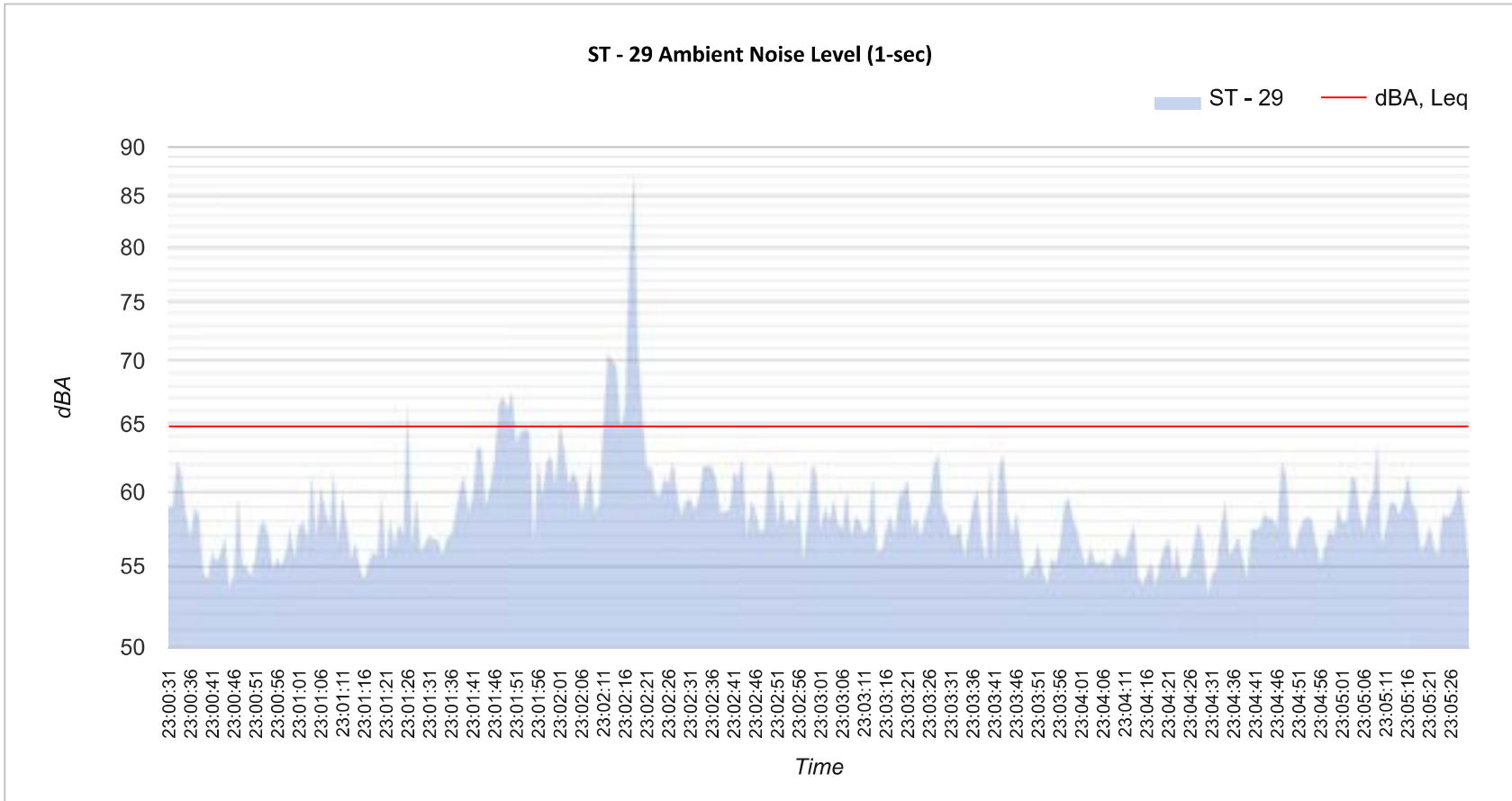


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 29	11:00 PM	11:06 PM	64.8	86.2	54.0	67.5	62.7	60	58	55.2

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-29 Southside Tavern Entrance (Night)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	56 degrees, Clear, No winds	Entrance 45'
Site Id:	ST - 29	Ground Type:	Asphalt	



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-30 Southside Tavern Alley (Idle Day)
Project: #/Name: 0357-2022-001
Site Address/Location: Flagstaff, AZ
Date: 06/07/2022
Field Tech/Engineer: Jordan Trubakoff

Site Observations:
Patio, no music, no talking, some AC units

Sound Meter: XL2, NTI **SN:** A2A-19621-E0
Settings: A-weighted, slow, 1-sec, 5-minute interval
Site Id: ST - 30



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-30 Southside Tavern Alley (Idle Day)

Site Address/Location: Flagstaff, AZ

Site Id: ST - 30

Figure 1:



Figure 2:

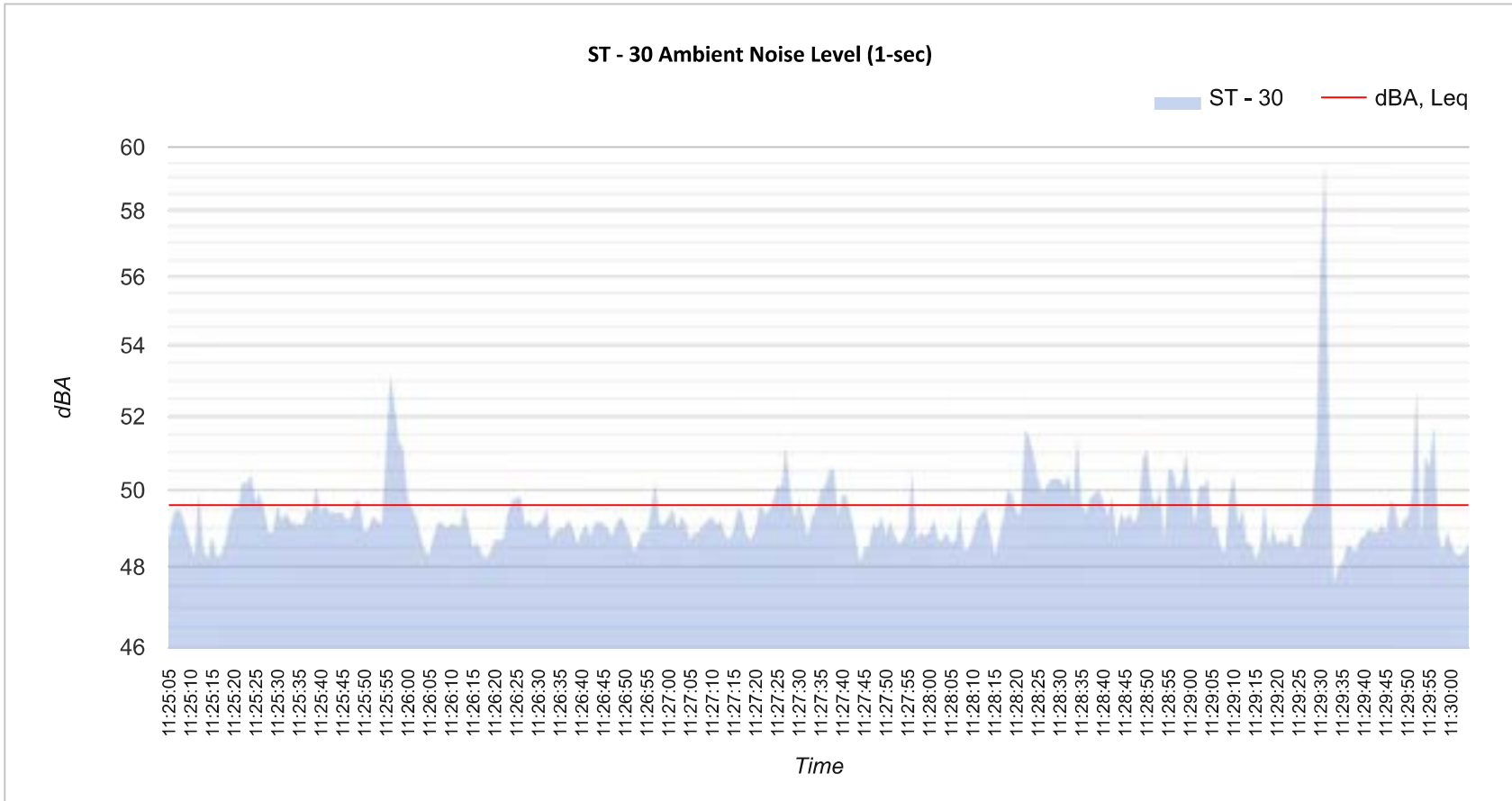


Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST - 30	11:25 AM	11:31 AM	49.6	58.8	48.2	51.6	50.5	49.7	49.2	48.5

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-30 Southside Tavern Alley (Idle Day) **Site Topo:** Flat **Noise Source(s) w/ Distance:**
Site Address/Location: Flagstaff, AZ **Meteorological Cond.:** 80 degrees, Sunny/Clear, No wind Patio, ~40'
Site Id: ST - 30 **Ground Type:** Grass/Gravel



5-Minute Continuous Noise Measurement Datasheet

Project Name: Ordinance: ST-31 Southside Tavern Alley (Night)

Site Observations:

Project: #/Name: 0357-2022-001

Patio, no music, talking.

Site Address/Location: Flagstaff, AZ

Date: 06/04/2022

Field Tech/Engineer: Jordan Trubakoff

Sound Meter: XL2, NTI **SN:** A2A-19621-E0

Settings: A-weighted, slow, 1-sec, 5-minute interval

Site Id: ST 31 - Southside Tavern Alley (



5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name: Ordinance: ST-31 Southside Tavern Alley (Night)

Site Address/Location: Flagstaff, AZ

Site Id: ST 31 - Southside Tavern Alley (

Figure 1:



Figure 2:



Table 1: Baseline Noise Measurement Summary

Location	Start	Stop	Leq	Lmax	Lmin	L2	L8	L25	L50	L90
ST 31 - Southside Tavern Alley (10:44 PM	10:50 PM	56.6	62.8	51.2	60.7	58.9	57.3	55.9	53.3

5-Minute Continuous Noise Measurement Datasheet - Cont.

Project Name:	Ordinance: ST-31 Southside Tavern Alley (Night)	Site Topo:	Flat	Noise Source(s) w/ Distance:
Site Address/Location:	Flagstaff, AZ	Meteorological Cond.:	60 Degrees, Light Clouds, no wind	Patio, no music, people talking 45'
Site Id:	ST 31 - Southside Tavern Alley (Ground Type:	Grass/Gravel	

