



Union Ridge Solar

Exhibit N

Noise Assessment

Case No. 20-1757-EL-BGN



Union Ridge Solar, LLC

NOISE ASSESSMENT

February 22, 2021



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1.0 INTRODUCTION

The Union Ridge Solar Project ("Project") is a photovoltaic power facility proposed for Licking County in central Ohio. The Project is proposed to have a nameplate capacity of up to 107 MWac. To inform the Ohio Power Siting Board ("OPSB") permitting process, RSG was hired by Environmental Design and Research (EDR), to perform a Noise Assessment of existing acoustical conditions in the area and sound emissions of the primary sound-producing Project components, namely inverters and transformers. This report includes:

- A Project description;
- Sound level limits applicable to the Project;
- Sound level monitoring procedures and results;
- Operational sound propagation modeling procedures and results;
- Construction noise modeling; and
- Conclusions.

A primer of acoustical terminology used in this report can be found in Appendix A.

2.0 PROJECT DESCRIPTION

The Project is proposed to be located in Licking County, Ohio. Licking County is located in central Ohio, approximately 11 kilometers (6.8 miles) east of Columbus, Ohio. The Project will be approximately bounded on the east by York Road Southwest and extends approximately 500 meters (1,640 feet) west of Watkins Road Southwest. The Project extends from Creek Road SW on the south side to approximately 775 meters (2,540 feet) short of Blacks Road SW on the north. The City of Pataskala is located approximately 1,770 meters (5,800 feet) northwest of the Project boundary. The project fence line is shown in its regional context in Figure 1.

The area is a mixture of agricultural and residential areas. A total of 1,339 residences are included in this assessment and are shown along with Project elements in Figure 2.

Based on the preliminary layout for the Project, the primary operational sound sources include 34 inverter skids spread throughout the Project Area and a main high-voltage transformer, though there are currently two proposed locations for the transformer. Each inverter skid includes an inverter and medium-voltage transformer. Approximately 3,874 tracking motors are expected. Sound emissions from all sources are analyzed in this assessment. Typical operations of the Project include transformers, trackers, and inverters operating during the day, and transformers and inverters operating at night.

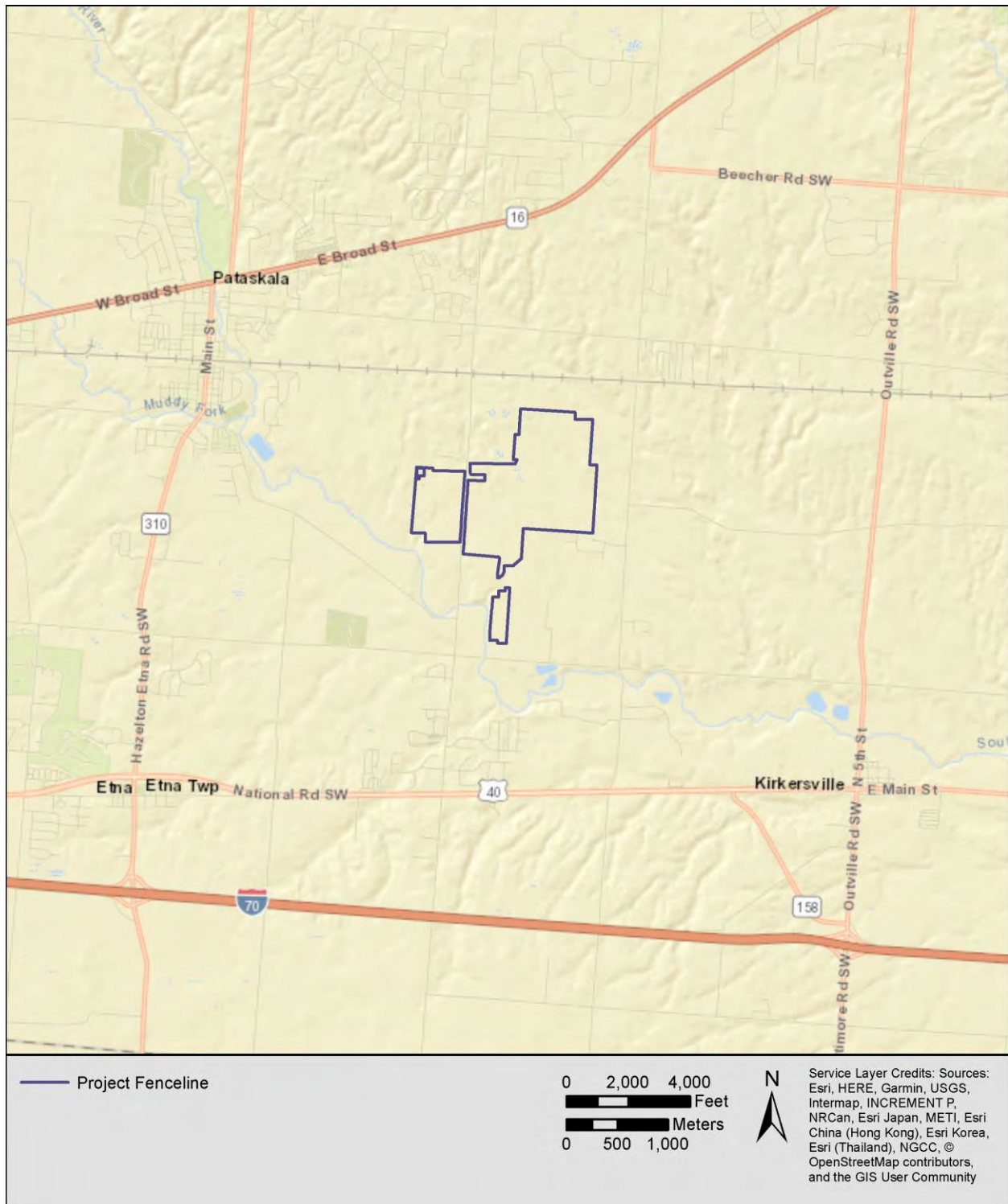


FIGURE 1: PROJECT AREA MAP

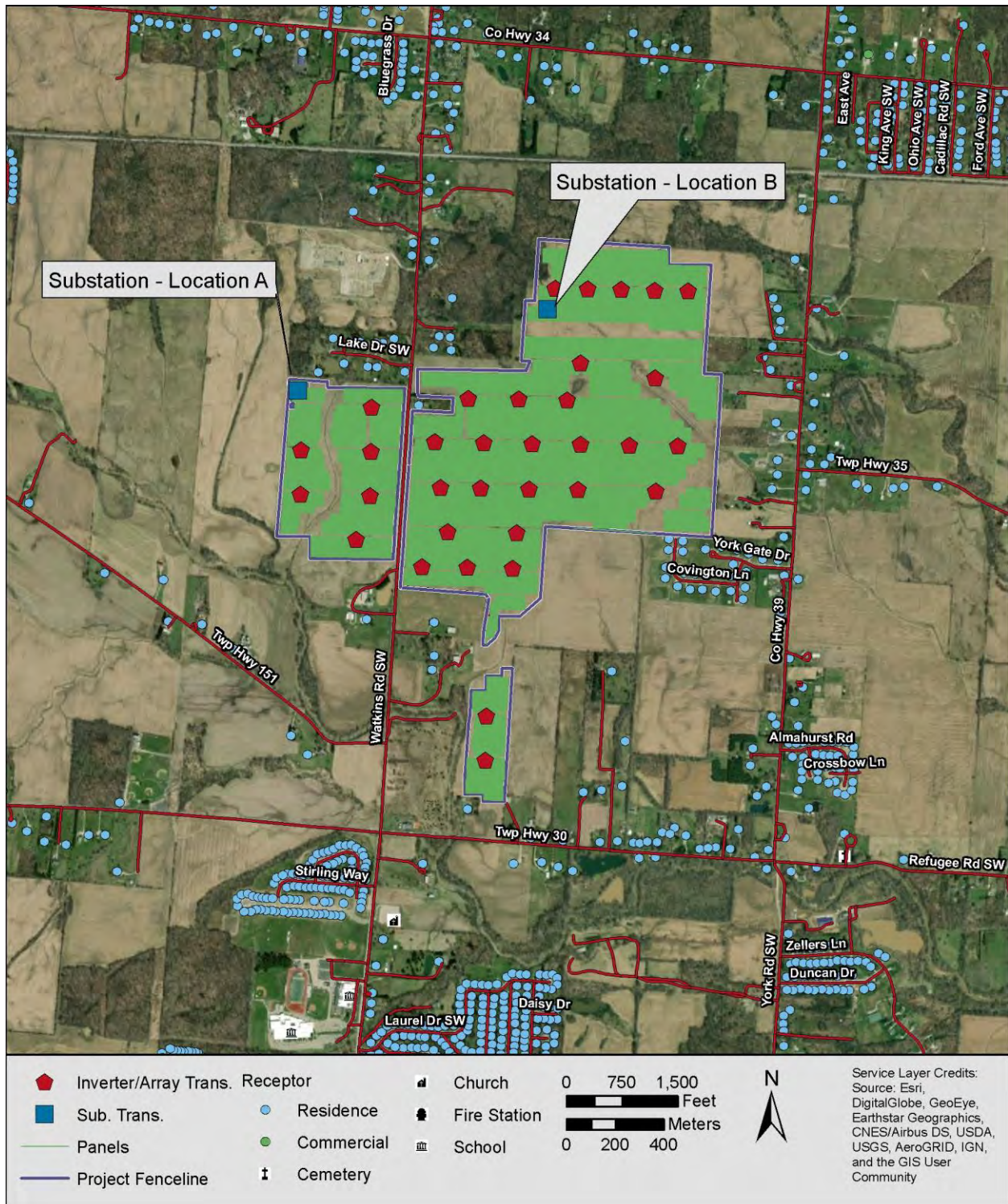


FIGURE 2: PROJECT SITE MAP

3.0 APPLICABLE SOUND LEVEL LIMITS

State noise policy applicable to this Project can be found in Ohio Administrative Code (“OAC”) Chapter 4906-4 Section 8(A), which is reproduced below. This Section requires that information on noise be provided including:

- Projected sound levels at the nearest property boundary due to construction;
- Projected sound levels at the nearest property boundary due to operation;
- Descriptions of mitigation measures; and
- A preconstruction background sound level study.

Although there is a specific sound level limit for wind power projects within the OAC, there is not one for solar power projects. The design goal for non-participating sensitive receptors used in this assessment of the Project is the measured ambient sound level plus 5 dB for daytime and nighttime periods. That is, the design goal during the daytime is the measured daytime ambient sound level plus 5 dB, and the nighttime design goal will be the measured nighttime ambient sound level plus 5 dB.

Based on the background sound monitoring conducted at three locations throughout the Project Area (see Section 4.0), the average existing daytime and nighttime equivalent continuous sound levels (L_{eq}) in the area are 44.8 dBA and 38.1 dBA, respectively. This sets the daytime design goal at 49.8 dBA and the nighttime design goal at 43.1 dBA.

4.0 SOUND LEVEL MONITORING

4.1 PROCEDURES

Background sound levels were measured at three locations around the Project Area. A map showing all monitor locations is provided in Figure 3. Continuous monitoring was conducted for the period from September 29 through October 6, 2020.

Equipment

Sound levels were measured using either Cesva SC 310, Larson Davis LD831, or Cirrus 171B sound level meters, which are all ANSI/IEC Class 1 instruments. All meters logged A-weighted and 1/3 octave band equivalent continuous sound levels once each second. Each sound level meter was attached to an external audio recorder (Roland R-05 or R09-HR) to aid in source identification and soundscape characterization.

Each sound level meter's microphone was mounted on a wooden stake at a height of approximately 1.5 meters (4.9 feet) and covered with a seven-inch weather-resistant windscreen. The windscreen reduces the influence of wind-induced self-noise on the measurements. The sound level meters were field-calibrated before and after each measurement period.

Wind data was logged at each site using an ONSET anemometer which recorded average wind speed and wind gust speed data once per minute and was installed at microphone height (1.5 meters). Other meteorological data was taken from the National Weather Service ASOS station in Columbus, OH (RZT).

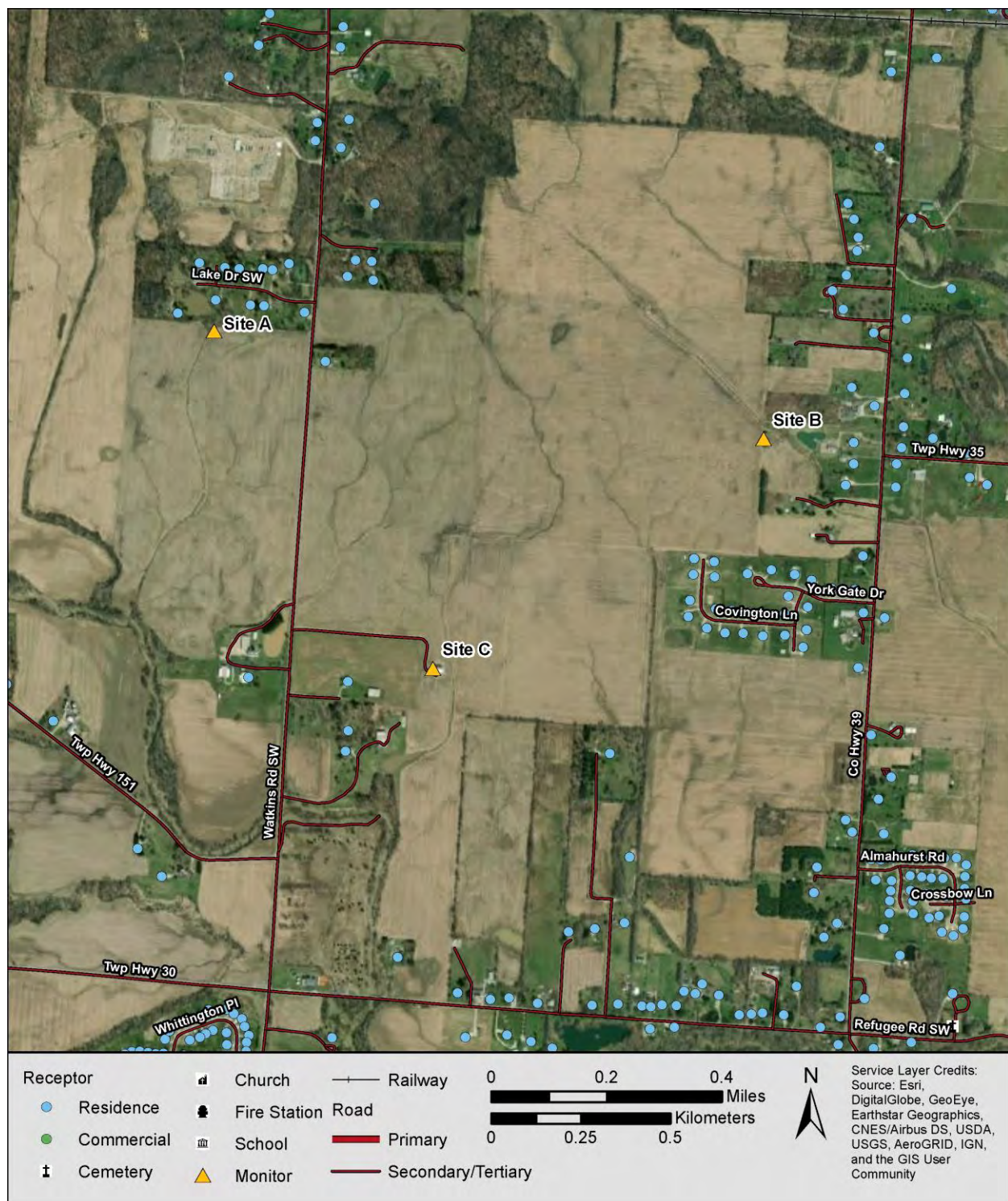


FIGURE 3: MAP OF MONITOR LOCATIONS

Location Descriptions

Monitor A

Monitor A was located in the western part of the project area, with the monitor situated on the north edge of a planted corn field. Just north of the monitoring location was a residential area located along Lake Drive Southwest. Watkins Road Southwest was located approximately 270 meters (890 feet) to the east and Lake Drive Southwest was located approximately 130 meters (430 feet) to the north. A rail line is located approximately 960 meters (3,150 feet) to the north. A photograph of the monitor is shown in Figure 4, and a map of the monitor location is provided in Figure 5.

The Project substation Location A is proposed to be located just west of the monitor, while another substation is located on the other side of the residential area, approximately 370 meters (1,210 feet) to the north.



FIGURE 4: PHOTOGRAPH OF MONITOR A



FIGURE 5: MAP OF MONITOR A LOCATION

Monitor B

Monitor B was located on the eastern edge of a farm field attached to a row of trees located just west of a residence. York Road Southwest (County Highway 39) was located 330 meters (1,080 feet) to the east and the closest residence was located approximately 250 meters (820 feet) to the east. A photograph of the monitor is shown in Figure 6 and a map of the monitor location is provided in Figure 7.

This monitor represents the soundscape for residences on the eastern edge of the project, particularly those along York Road Southwest.



FIGURE 6: PHOTOGRAPH OF MONITOR B LOOKING WEST

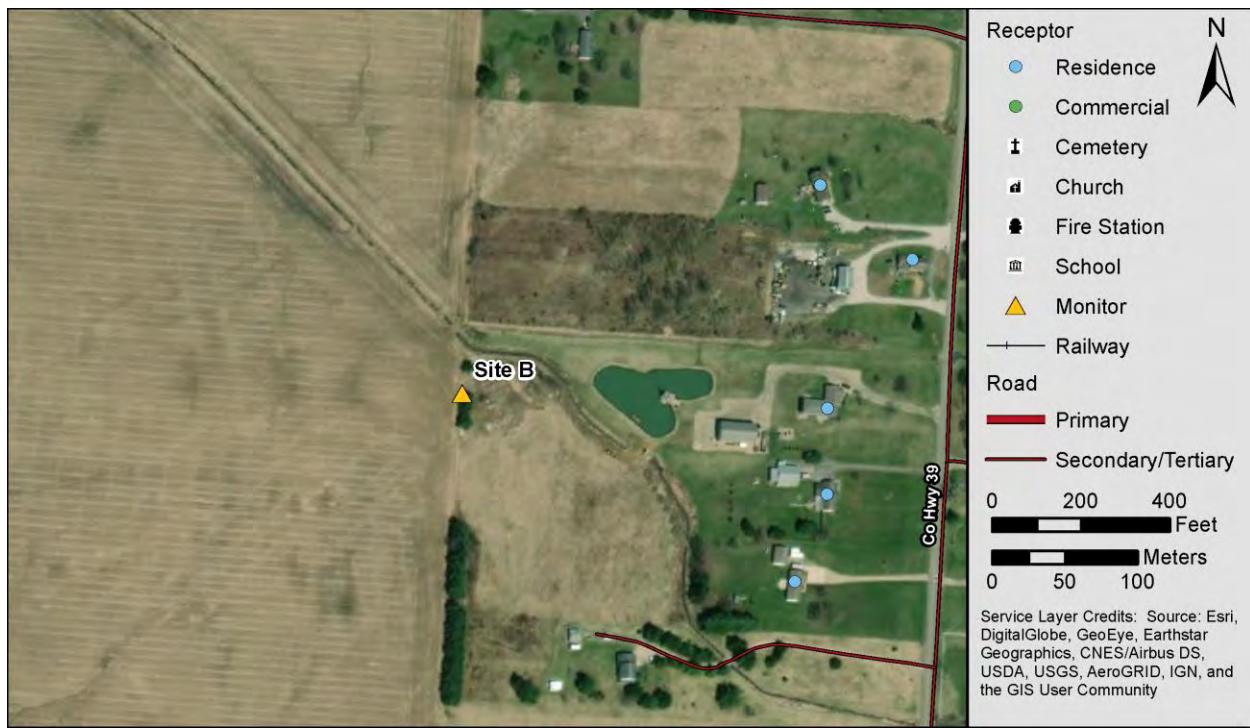


FIGURE 7: MAP OF MONITOR B LOCATION

Monitor C

Monitor C was located adjacent to a barn that was surrounding by a farm field. The location was located at the end of a small private road, that extends east from Watkins Road Southwest. The closest residence to the monitor was located approximately 240 meters (790 feet) to the southwest and Watkins Road Southwest was located approximately 400 meters (1,310 feet) to the west. A map of the monitor location is provided in Figure 8, there is no picture available for this location.

This monitor is intended to represent residential soundscapes towards the southern end of the project area and near Refugee Road Southwest (Township Highway 30), located 930 meters (3,050 feet) to the south.

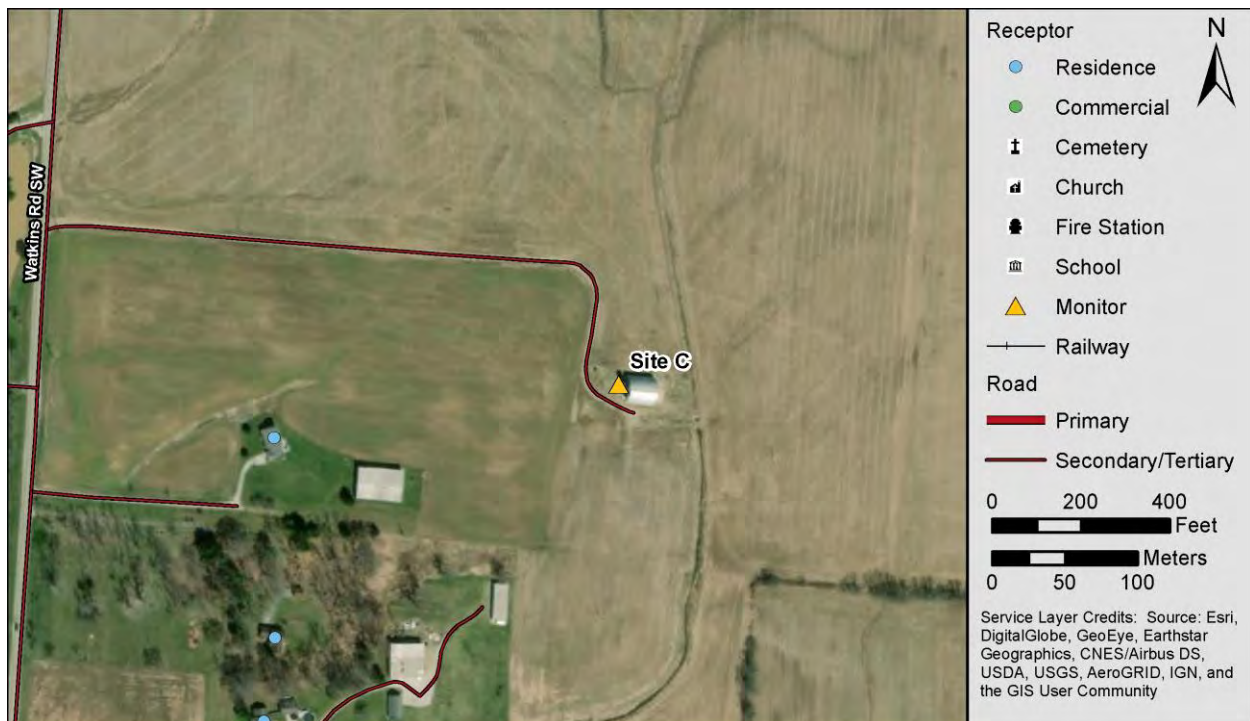


FIGURE 8: MAP OF MONITOR C LOCATION

Data Processing

Following the collection of the meters, data was downloaded, processed, and summarized into 10-minute, overall day, overall night, and full monitoring-period length durations. For each 10-minute period, equivalent average (L_{eq}), upper 10th percentile (L_{10}), median (L_{50}), and lower 10th percentile (L_{90}) sound levels were also calculated.

During analysis, sound level data was removed from the dataset during the periods that would cause false sound level readings or artificially high levels. These periods include:

- Wind speeds above 5 m/s (11 mph);
- Precipitation and thunderstorm events;
- Anomalous events; or
- Equipment interactions by RSG staff, other people, or animals.

Precipitation events were obtained from nearby airport data and were corroborated through both analysis of sound level spectrograms and from the audio recordings. There were only a few brief periods of rain: two on September 30, and one on October 4. Anemometers were setup a day after the sound level meters (on September 30).

4.2 BACKGROUND SOUND LEVEL SUMMARY

An overall summary of the monitor results is provided in this section, followed by time-history graphs for each monitor in Section 4.3. Sound levels for each location are summarized into daytime, nighttime, and entire period levels in Table 1. It includes equivalent continuous average (L_{eq}), upper 10th percentile (L_{10}), median (L_{50}), and lower 10th percentile (L_{90}) sound levels. The nighttime L_{eq} across the Project Area is 38.1 dBA, and the daytime L_{eq} across the Project Area is 44.8 dBA. As discussed in Section 3.0, this sets the nighttime design goal threshold for nonparticipating sensitive receptors at 43.1 dBA and the daytime design goal threshold for non-participating sensitive receptors at 49.8 dBA.

TABLE 1: SUMMARY OF BACKGROUND SOUND LEVELS¹

Location	Sound Pressure Level (dBA)			
	Leq	L90	L50	L10
Overall				
Monitor A	43.8	26.7	33.4	42.7
Monitor B	43.2	28.4	35.1	43.4
Monitor C	42.8	29.2	37.0	44.7
Day				
Monitor A	45.4	29.3	35.8	45.0
Monitor B	44.8	31.5	37.6	45.0
Monitor C	44.3	32.9	39.2	45.7
Site Average	44.8	Site Average + 5 dB		49.8
Night				
Monitor A	38.0	24.8	29.6	37.8
Monitor B	37.8	27.0	30.8	39.4
Monitor C	38.5	27.3	33.4	40.9
Site Average	38.1	Site Average + 5 dB		43.1

4.3 MONITOR RESULTS BY LOCATION

For display purposes, the one second data that was collected is displayed in 10-minute summarized values in the time history-graphs to show overall trends. Sound levels are plotted along with ambient temperature and wind speed to show relating trends. Time periods during which data was removed for the sound level summary presented in Section 4.2 are indicated with color-coded markers. Sound level data during periods when the entire 10-minute interval was excluded for wind, rain, or anomalies are still present in these graphs as lighter colors, with the darker colors representing 10-minute intervals where there were no data exclusions or only partial data exclusions.² The duration of each time history graph is one week, and each graph exhibits day/night shading where night is defined as 22:00 to 7:00 and shaded grey.

¹ High frequency biogenic sound was filtered out of the data during periods where it was present using an ANS weighting (defined in ANSI S12.100, "Methods to Define and Measure the Residual Sound in Protected Natural and Quiet Residential Areas") which simply discounts sound levels above the 1 kHz 1/1st octave band, the frequency range in which the biogenic sounds occur.

² For some 10-minute periods, shorter durations within the 10-minutes are excluded due to wind, rain, or anomalies, but the rest of the 10-minute interval is still used in the summary. These periods are shown in the darker colors (Leq and L90) as only some of the 10-minute period was excluded.

Monitor A

Background sound level monitoring results for Monitor A are shown in Figure 9 and Figure 10. Background sound levels were largely driven by airplane overflights, distant car passbys, and train passbys. Other sound sources included wind in foliage, birds and insects.

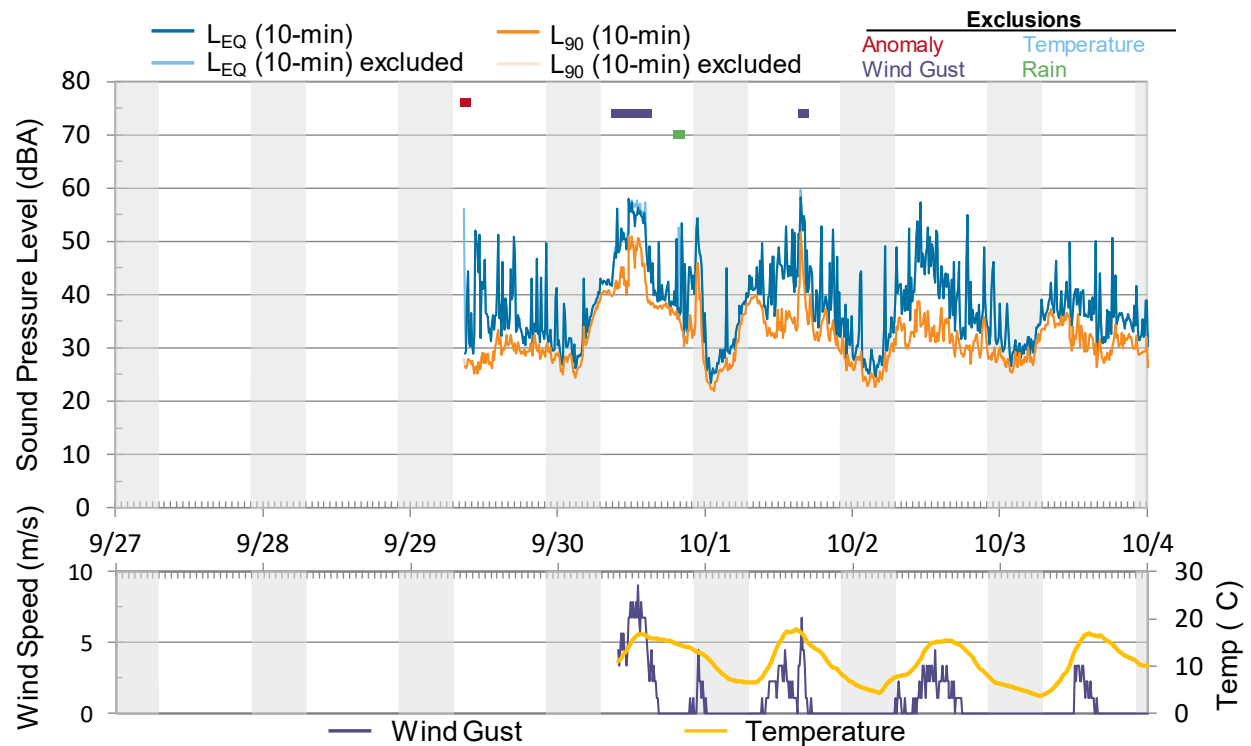


FIGURE 9: SOUND PRESSURE LEVELS OVER TIME - MONITOR A, SEPTEMBER 29 TO OCTOBER 4

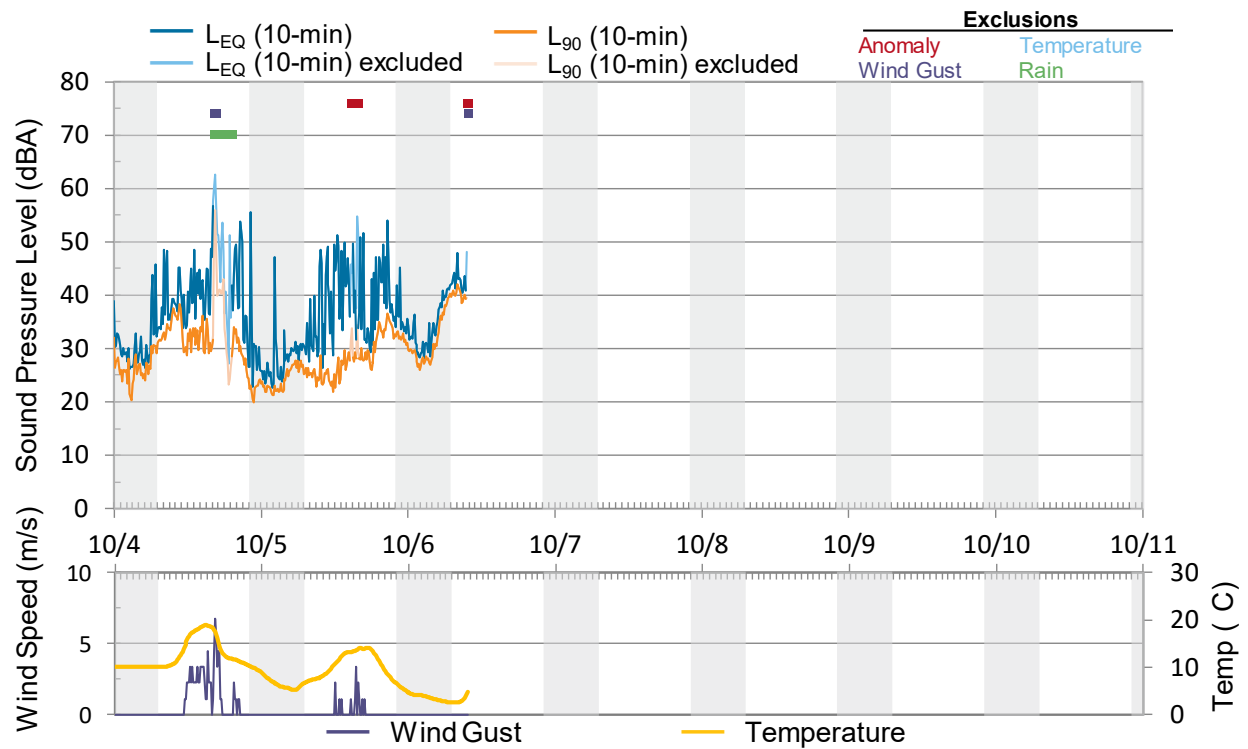


FIGURE 10: SOUND PRESSURE LEVELS OVER TIME - MONITOR A, OCTOBER 4 TO OCTOBER 6

Monitor B

Background sound level monitoring results for Monitor B are shown in Figure 11 and Figure 12. Background sound levels were largely driven by airplane overflights, car passbys, and train passbys. There was occasional operation of heavy equipment, though that only occurred consistently on two days and data from these periods was removed from results. At other periods, yard maintenance equipment was evident. Other sound sources included wind in foliage, birds and insects.

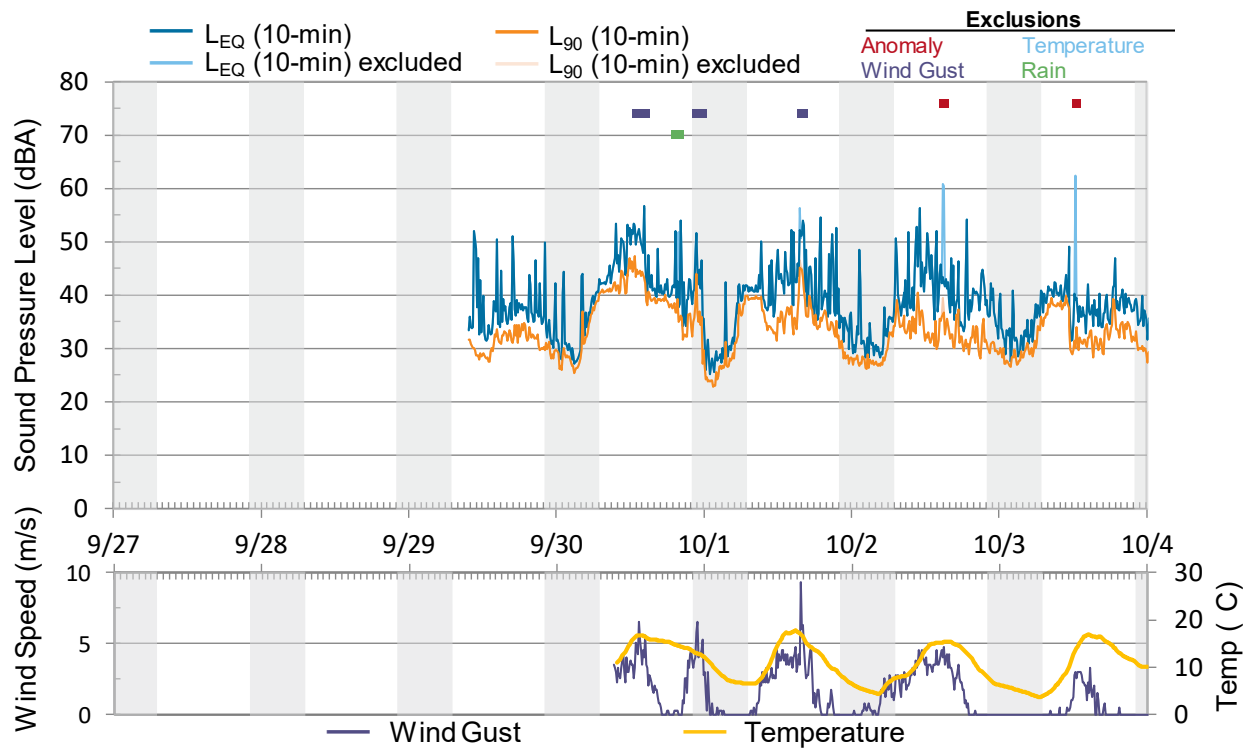


FIGURE 11: SOUND PRESSURE LEVELS OVER TIME - MONITOR B, SEPTEMBER 29 TO OCTOBER 4

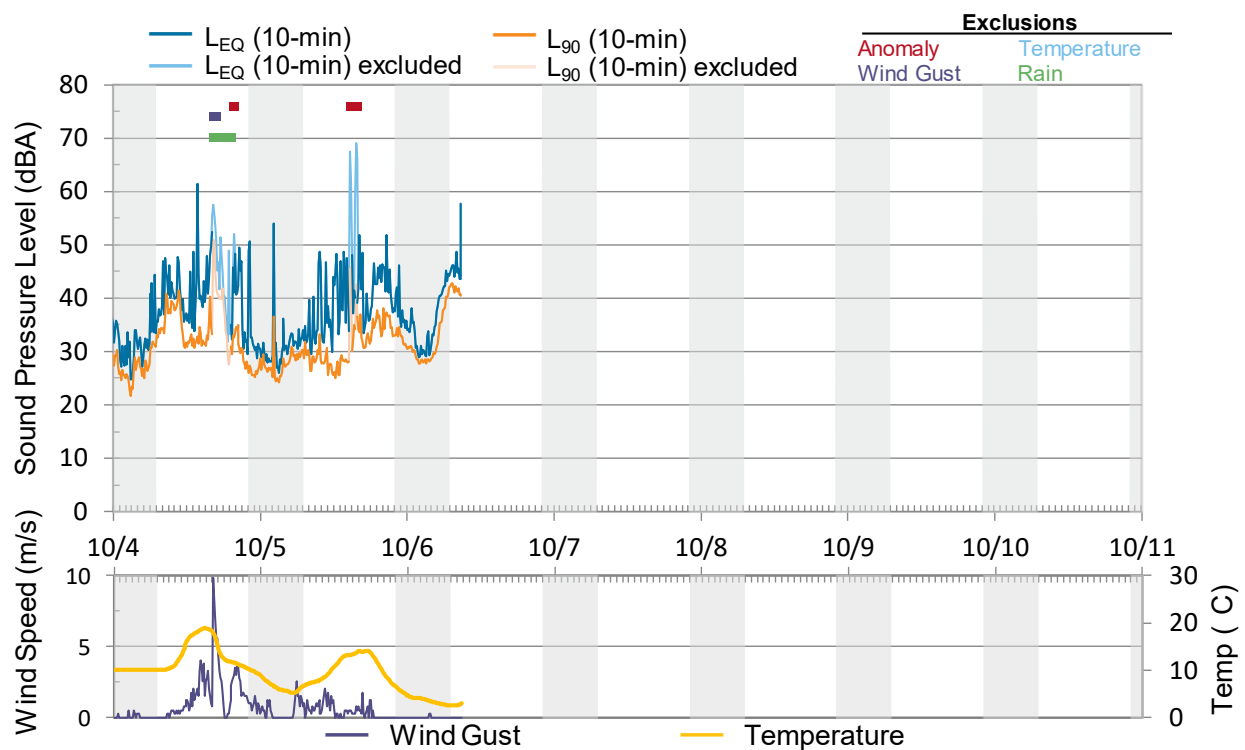


FIGURE 12: SOUND PRESSURE LEVELS OVER TIME - MONITOR B, OCTOBER 4 TO OCTOBER 6

Monitor C

Background sound level monitoring results for Monitor C are shown in Figure 13 through Figure 14. Background sound levels were driven by airplane overflights, car passbys, and distant train passbys. There was occasional operation of heavy equipment and yard maintenance equipment. Other sound sources included wind in foliage, birds and insects.

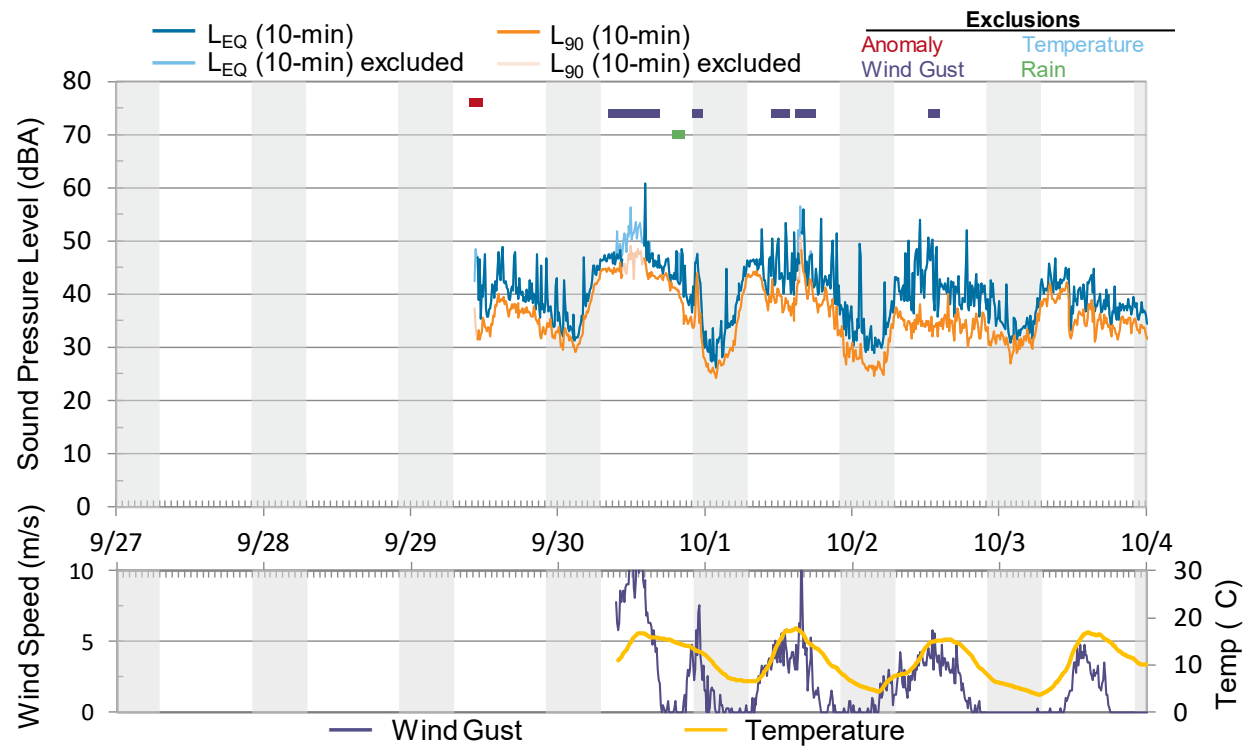


FIGURE 13: SOUND PRESSURE LEVELS OVER TIME - MONITOR C, SEPTEMBER 29 TO OCTOBER 4

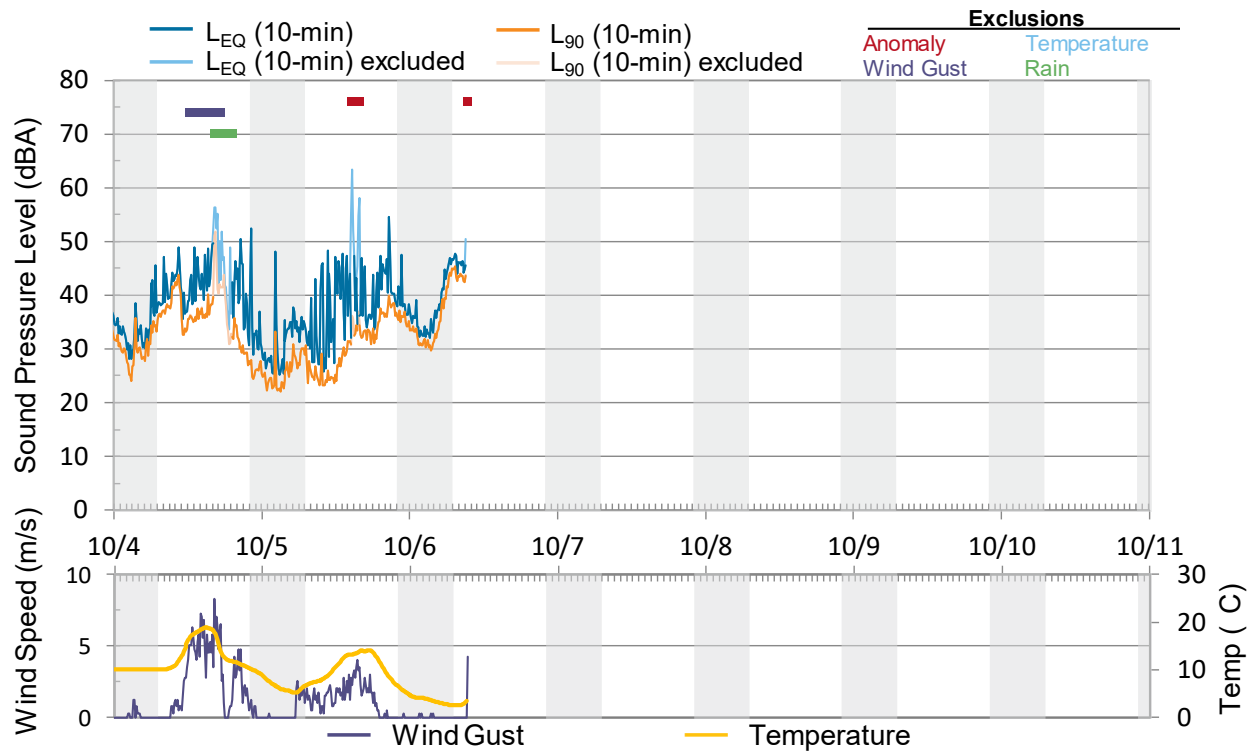


FIGURE 14: SOUND PRESSURE LEVELS OVER TIME - MONITOR C, OCTOBER 4 TO OCTOBER 6

5.0 SOUND PROPAGATION MODELING

5.1 PROCEDURES

Modeling for the Project was in accordance with the standard ISO 9613-2, “Acoustics – Attenuation of sound during propagation outdoors, Part 2: General Method of Calculation.” The ISO standard states,

This part of ISO 9613 specifies an engineering method for calculating the attenuation of sound during propagation outdoors in order to predict the levels of environmental noise at a distance from a variety of sources. The method predicts the equivalent continuous A-weighted sound pressure level ... under meteorological conditions favorable to propagation from sources of known sound emissions. These conditions are for downwind propagation ... or, equivalently, propagation under a well-developed moderate ground-based temperature inversion, such as commonly occurs at night.

The model takes into account source sound power levels, surface reflection and absorption, atmospheric absorption, geometric divergence, meteorological conditions, walls, barriers, berms, and terrain. The acoustical modeling software used here was CadnaA, from Datakustik GmbH. CadnaA is a widely accepted acoustical propagation modeling tool, used by many noise control professionals in the United States and internationally.

ISO 9613-2 also assumes downwind sound propagation between every source and every receiver, consequently, all wind directions, including the prevailing wind directions, are taken into account. Screening due to solar panels or vegetation were not taken into account for this project.

Model input parameters are listed in Appendix B including the modeled sound power spectra for each source. A few different inverters are currently being considered for the Project. This assessment provides the model result, assuming the Power Electronics FS-3430M inverter. Sound data for the inverter is based on a manufacturer specified sound pressure level, the dimensions of the inverter, and the spectrum from a similar size unit. Sound data for the substation transformer is based on a manufacturer (ABB) test of the transformer that is proposed for the Project along with added factors to compensate for load harmonics and uncertainty, and assuming the spectrum of a transformer tested by RSG. Data for the trackers is based on a manufacturer test. The inherent assumptions of ISO 9613-2 and how the model was setup will result in overall conservative results.

For the daytime configuration transformers, trackers, and inverters were set to operate and for the nighttime configuration, transformers and inverters were set to operate.

A total of 1,321 discrete receivers were placed in the model at residences surrounding the Project (an additional 18 were placed at non-residential locations). In addition, a grid of receivers spaced 20 meters by 20 meters was setup at a height of 4 meters above ground covering approximately 76 sq. km. (29 sq. mi.) around the Project Area.

5.2 MODEL RESULTS

A summary of the sound propagation model results is provided in Table 2, and Appendix C provides a list of the calculated overall sound pressure levels at each discrete receiver. As shown in Table 2, all residences are projected at 48.5 dBA or less during the day and 43.0 dBA or less at night, which are below the Project design thresholds of 49.8 dBA and 43.1 dBA, respectively. Sound levels at the project property lines range from 34 to 56 dBA for the daytime configuration and 33 to 49 dBA for the nighttime configuration.

TABLE 2: SUMMARY OF MODELED SOUND PRESSURE LEVELS

	Daytime Sound Level (dBA)			Nighttime Sound Level (dBA)		
	Min	Avg	Max	Min	Avg	Max
All Receivers	21.9	27.3	48.5	21.2	26.5	43.0

The highest sound levels at a residence during the daytime is at the residence just northeast of the proposed substation Location A. At this location, sound levels are primarily due to the substation transformer. At night the highest sound levels are found at the residence towards the northern part of the array just east of Watkins Road Southwest. Sound levels at this location are primarily due to nearby inverters. The modeling results given in Table 2 assume that barriers are installed at some inverters. These barriers are discussed further in Section 6.0.

A map of projected sound levels throughout the Project Area is provided in Figure 15 for the daytime configuration and Figure 16 for the nighttime configuration.

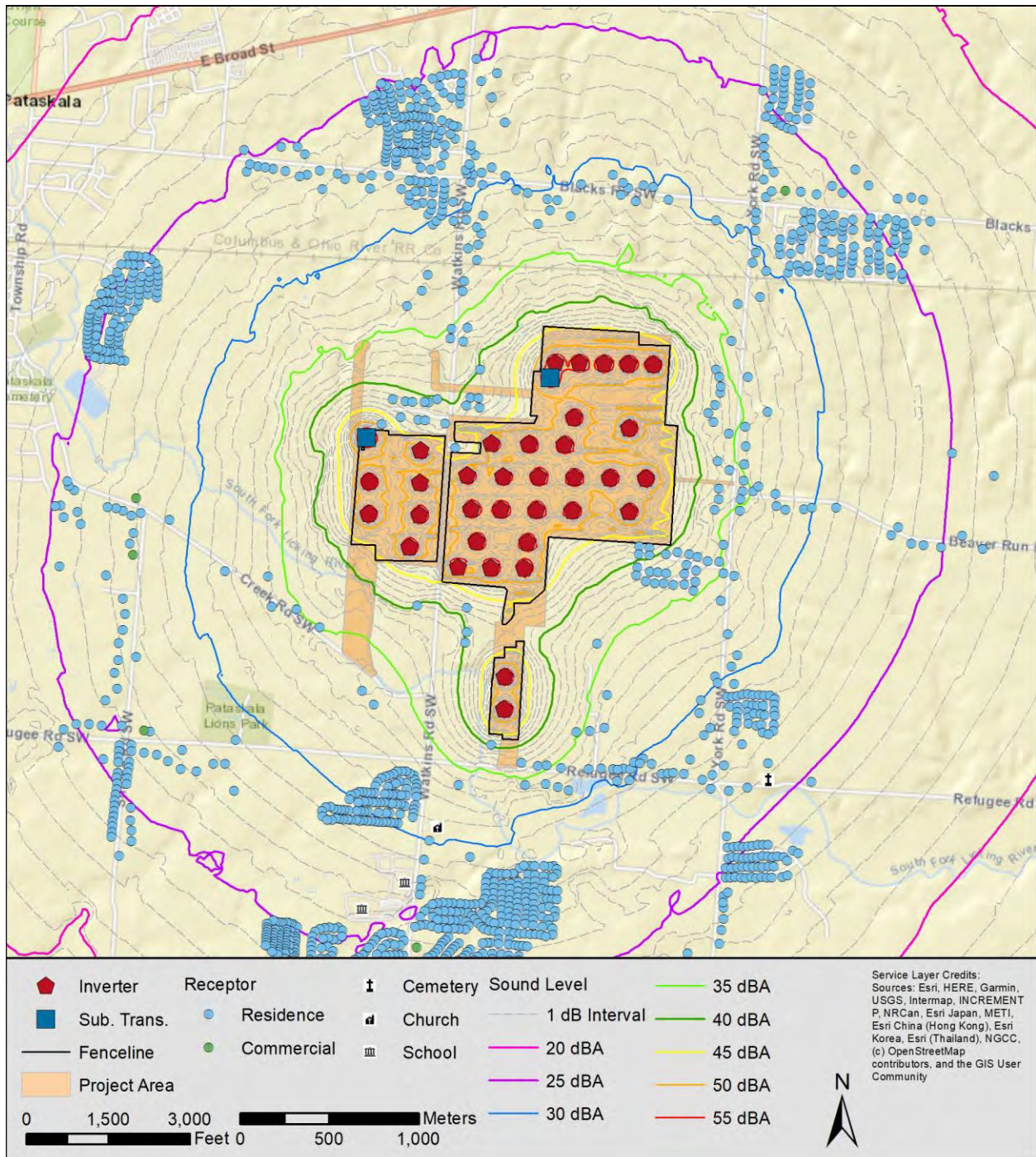


FIGURE 15: SOUND PROPAGATION MODEL RESULTS – DAYTIME CONFIGURATION WITH PROPOSED BARRIERS³

³ Although tracking motors were included in the sound propagation model, they are not shown in this figure to improve readability.

6.0 MITIGATION

The modeling results shown in Section 5.2 and Appendix C assume use of sound barriers around some inverters. Locations of these barriers are shown in Figure 17 along with the modeled heights. Most of the barriers will be located around inverters in the Watkins Road Southwest corridor, towards the northern part of the Project and one will be located near the southern part of the array, but still in the Watkins Road Southwest corridor. No barriers were modeled around the inverters. These barriers are assumed to be full height, that is they extend all the way to the ground for the entire length of the barrier. This represents an example of a feasible mitigation, but it is not the only option. Other options might include:

- Quieter inverters;
- Baffles; or
- Enclosures.

Similarly, the number and height of barriers may need to be adjusted if a different inverter is selected with different sound emissions. Once equipment and mitigation methods are finalized, modeling will be redone to ensure efficacy.

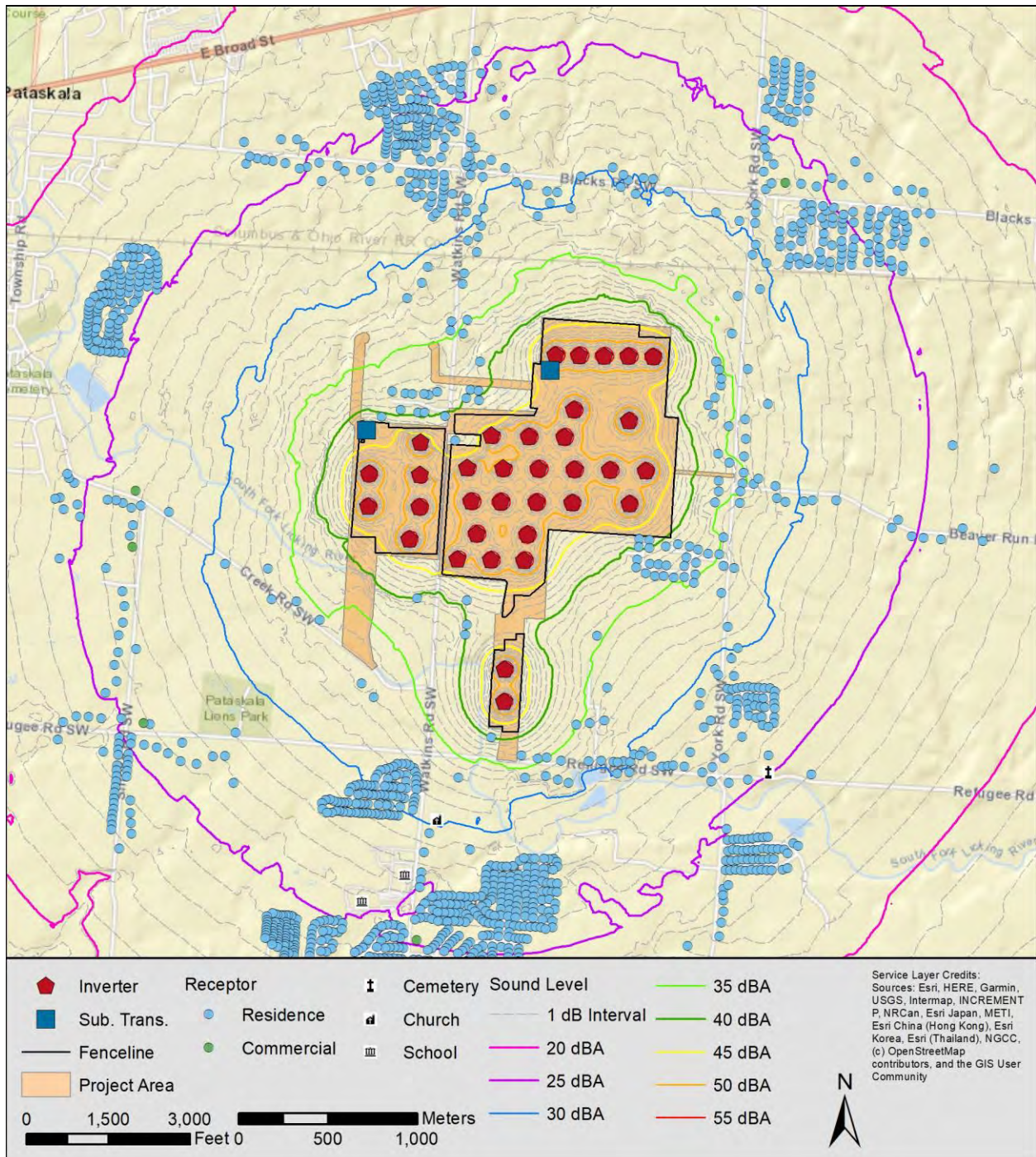


FIGURE 16: SOUND PROPAGATION MODELING RESULTS - NIGHTTIME CONFIGURATION WITH PROPOSED BARRIERS



FIGURE 17: SOUND BARRIER LOCATIONS INCLUDING MODELED BARRIER HEIGHT

7.0 CONSTRUCTION NOISE

Construction activities include road construction, substation construction, trenching, inverter installation, piling and racking. In any given area, construction will be relatively short in duration, particularly for road construction, trenching, piling, and racking. Construction of substations typically lasts longer than these other activities. Road construction will take place within and adjacent to the solar arrays. Trenching will take place along the underground collection line routes. Inverter installation would take place at each inverter pad location. And piling and racking will take place throughout the solar arrays.

Construction that involves increasing sound above ambient levels will take place between 7 AM and 7 PM or dusk, whichever is later. Pile driving will be limited to the hours of 9 AM to 7 PM, Monday through Friday. Construction equipment will be fitted with exhaust systems and mufflers to reduce exhaust noise. In addition, the material staging areas will be located away from sensitive receptors when feasible. To the extent possible, circular vehicular movements will be established to minimize the use of back alarms.

Equipment used for each activity will vary. Some of the louder pieces of equipment⁴ are shown in Table 3 along with the approximate maximum sound pressure levels at 15 meters (50 feet), 25 meters (82 feet) and 91 meters (300 feet). Twenty-five meters is the closest distance between a residence and a solar array where racking and piling will take place and 91 meters is a more typical distance between residences and the solar array.

⁴ Sound source information was obtained from FHWA's Roadway Construction Noise Model and manufacturer data.

TABLE 3: MAXIMUM SOUND LEVELS FROM VARIOUS TYPES OF CONSTRUCTION EQUIPMENT ASSUMING NO ATTENUATION FROM TREES OR TERRAIN

Equipment	Maximum Sound Pressure Level at 25 meters (82 feet) (dBA) ⁵	Maximum Sound Pressure Level at 15 meters (50 feet) (dBA)	Maximum Sound Pressure Level at 91 meters (300 feet) (dBA)
Excavator	76	85	62
Dozer	76	85	62
Grader	76	85	61
Roller	76	85	60
Dump Truck	75	84	60
Concrete Mixing Truck	76	85	61
Concrete Pumper Truck	73	82	58
Man-lift	76	85	62
Flatbed Truck	75	84	60
Large Crane	76	85	62
Small Crane	74	83	60
Trencher	72	83	54
Compactor	69	80	51
Forklift	75	85	59
Boom Truck	75	84	60
Small Pile Driver	73	84	55

⁵ Assumes hard ground around construction site, and ISO 9613-2 propagation with no vegetation reduction. Actual sound levels will likely be lower given the prevalence of vegetation and soft ground around the site.

8.0 CONCLUSIONS

RSG conducted a sound level assessment of the Project that included background sound level monitoring of the existing environment in and around the Project Area and sound propagation modeling to predict operational sound levels at nearby residences.

Summary and conclusions are as follows:

1. Sound sources in the existing soundscape include train passbys, traffic noise from both nearby roads, aircraft overflights, and biogenic and geophonic sounds.
 - a. Background sound levels were fairly consistent at all three monitors.
 - b. The average daytime L_{eq} across the Project Area was 44.8 dBA.
 - c. The average nighttime L_{eq} across the Project Area was 38.1 dBA.
2. Based on OPSB precedents, a Project design goal of 5 dB above existing L_{eq} was established, creating a daytime goal of 49.8 dBA and a nighttime goal of 43.1 dBA for non-participating residences.
3. While the Project transformers are typically the only sources that operate at night from a solar project, there may be times that the inverters for this Project will operate at night for MVAR control. As such, this assessment assumed:
 - a. All inverters would operate at night; and
 - b. Evaluated the projected sound levels from those sources against the nighttime goal of 43.1 dBA.
4. Sound propagation modeling was conducted in accordance with ISO 9613-2 at 1339 receivers throughout the Project Area.
5. Model results are summarized in Section 5.2, and provided in tabular format in Appendix C. All receivers are 48.5 dBA or less during the day and 43.0 dBA or less at night. These results assume use of noise barriers at a total of six inverter locations, as an example of a mitigation measure.
6. Sound levels at project property lines range from 34 to 56 dBA for the daytime configuration and 33 to 49 dBA for the nighttime configuration.
7. Sound levels due to construction are summarized in section 7.0.

APPENDIX A. ACOUSTICS PRIMER

Expressing Sound in Decibel Levels

The varying air pressure that constitutes sound can be characterized in many different ways. The human ear is the basis for the metrics that are used in acoustics. Normal human hearing is sensitive to sound fluctuations over an enormous range of pressures, from about 20 micropascals (the “threshold of audibility”) to about 20 pascals (the “threshold of pain”).⁶ This factor of one million in sound pressure difference is challenging to convey in engineering units. Instead, sound pressure is converted to sound “levels” in units of “decibels” (dB, named after Alexander Graham Bell). Once a measured sound is converted to dB, it is denoted as a level with the letter “L”.

The conversion from sound pressure in pascals to sound level in dB is a four-step process. First, the sound wave’s measured amplitude is squared and the mean is taken. Second, a ratio is taken between the mean square sound pressure and the square of the threshold of audibility (20 micropascals). Third, using the logarithm function, the ratio is converted to factors of 10. The final result is multiplied by 10 to give the decibel level. By this decibel scale, sound levels range from 0 dB at the threshold of audibility to 120 dB at the threshold of pain.

Typical sound sources, and their sound pressure levels, are listed on the scale in Figure 18.

Human Response to Sound Levels: Apparent Loudness

For every 20 dB increase in sound level, the sound pressure increases by a *factor* of 10; the sound *level* range from 0 dB to 120 dB covers 6 factors of 10, or one million, in sound *pressure*. However, for an increase of 10 dB in sound *level* as measured by a meter, humans perceive an approximate doubling of apparent loudness: to the human ear, a sound level of 70 dB sounds about “twice as loud” as a sound level of 60 dB. Smaller changes in sound level, less than 3 dB up or down, are generally not perceptible.

⁶ The pascal is a measure of pressure in the metric system. In Imperial units, they are themselves very small: one pascal is only 145 millionths of a pound per square inch (psi). The sound pressure at the threshold of audibility is only 3 one-billionths of one psi: at the threshold of pain, it is about 3 one-thousandths of one psi.

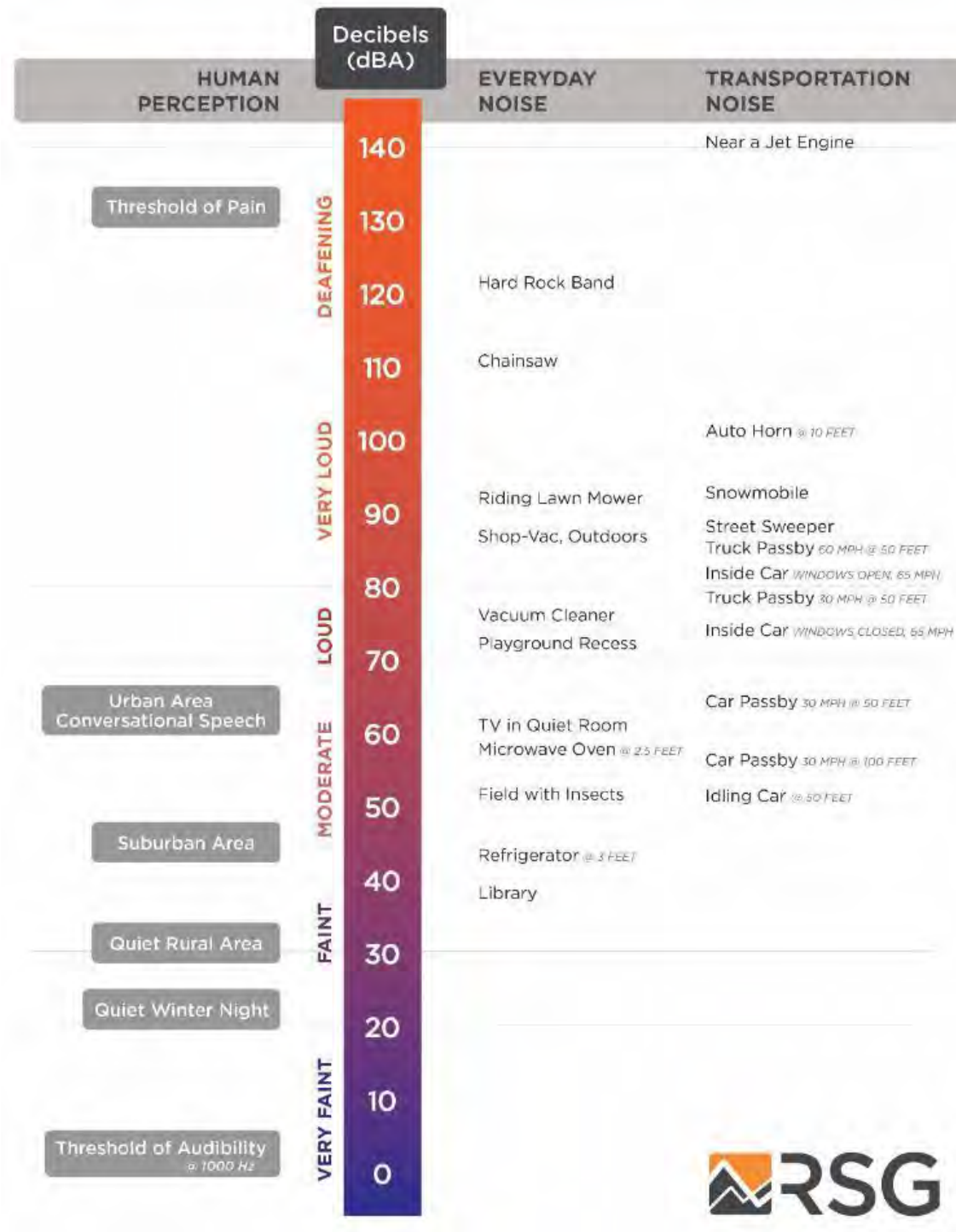


FIGURE 18: A SCALE OF SOUND PRESSURE LEVELS FOR TYPICAL SOUND SOURCES

Frequency Spectrum of Sound

The “frequency” of a sound is the rate at which it fluctuates in time, expressed in Hertz (Hz), or cycles per second. Very few sounds occur at only one frequency: most sound contains energy at many different frequencies, and it can be broken down into different frequency divisions, or bands. These bands are similar to musical pitches, from low tones to high tones. The most common division is the standard octave band. An octave is the range of frequencies whose upper frequency limit is twice its lower frequency limit, exactly like an octave in music. An octave band is identified by its center frequency: each successive band’s center frequency is twice as high (one octave) as the previous band. For example, the 500 Hz octave band includes all sound whose frequencies range between 354 Hz (Hertz, or cycles per second) and 707 Hz. The next band is centered at 1,000 Hz with a range between 707 Hz and 1,414 Hz. The range of human hearing is divided into 10 standard octave bands: 31.5 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1,000 Hz, 2,000 Hz, 4,000 Hz, 8,000 Hz, and 16,000 Hz. For analyses that require finer frequency detail, each octave-band can be subdivided. A commonly-used subdivision creates three smaller bands within each octave band, or so-called 1/3-octave bands.

Human Response to Frequency: Weighting of Sound Levels

The human ear is not equally sensitive to sounds of all frequencies. Sounds at some frequencies seem louder than others, despite having the same decibel level as measured by a sound level meter. In particular, human hearing is much more sensitive to medium pitches (from about 500 Hz to about 4,000 Hz) than to very low or very high pitches. For example, a tone measuring 80 dB at 500 Hz (a medium pitch) sounds quite a bit louder than a tone measuring 80 dB at 60 Hz (a very low pitch). The frequency response of normal human hearing ranges from 20 Hz to 20,000 Hz. Below 20 Hz, sound pressure fluctuations are not “heard”, but sometimes can be “felt”. This is known as “infrasound”. Likewise, above 20,000 Hz, sound can no longer be heard by humans; this is known as “ultrasound”. As humans age, they tend to lose the ability to hear higher frequencies first; many adults do not hear very well above about 16,000 Hz. Most natural and man-made sound occurs in the range from about 40 Hz to about 4,000 Hz. Some insects and birdsongs reach to about 8,000 Hz.

To adjust measured sound pressure levels so that they mimic human hearing response, sound level meters apply filters, known as “frequency weightings”, to the signals. There are several defined weighting scales, including “A”, “B”, “C”, “D”, “G”, and “Z”. The most common weighting scale used in environmental noise analysis and regulation is A-weighting. This weighting represents the sensitivity of the human ear to sounds of low to moderate level. It attenuates sounds with frequencies below 1000 Hz and above 4000 Hz; it amplifies very slightly sounds between 1000 Hz and 4000 Hz, where the human ear is particularly sensitive. The C-weighting scale is sometimes used to describe louder sounds. The B- and D- scales are seldom used. All of these frequency weighting scales are normalized to the average human hearing response at

1000 Hz: at this frequency, the filters neither attenuate nor amplify. When a reported sound level has been filtered using a frequency weighting, the letter is appended to “dB”. For example, sound with A-weighting is usually denoted “dBA”. When no filtering is applied, the level is denoted “dB” or “dBZ”. The letter is also appended as a subscript to the level indicator “L”, for example “L_A” for A-weighted levels.

Time Response of Sound Level Meters

Because sound levels can vary greatly from one moment to the next, the time over which sound is measured can influence the value of the levels reported. Often, sound is measured in real time, as it fluctuates. In this case, acousticians apply a so-called “time response” to the sound level meter, and this time response is often part of regulations for measuring sound. If the sound level is varying slowly, over a few seconds, “Slow” time response is applied, with a time constant of one second. If the sound level is varying quickly (for example, if brief events are mixed into the overall sound), “Fast” time response can be applied, with a time constant of one-eighth of a second.⁷ The time response setting for a sound level measurement is indicated with the subscript “S” for Slow and “F” for Fast: L_S or L_F. A sound level meter set to Fast time response will indicate higher sound levels than one set to Slow time response when brief events are mixed into the overall sound, because it can respond more quickly.

In some cases, the maximum sound level that can be generated by a source is of concern. Likewise, the minimum sound level occurring during a monitoring period may be required. To measure these, the sound level meter can be set to capture and hold the highest and lowest levels measured during a given monitoring period. This is represented by the subscript “max”, denoted as “L_{max}”. One can define a “max” level with Fast response L_{Fmax} (1/8-second time constant), Slow time response L_{Smax} (1-second time constant), or Continuous Equivalent level over a specified time period L_{EQmax}.

Accounting for Changes in Sound Over Time

A sound level meter’s time response settings are useful for continuous monitoring. However, they are less useful in summarizing sound levels over longer periods. To do so, acousticians apply simple statistics to the measured sound levels, resulting in a set of defined types of sound level related to averages over time. An example is shown in Figure 19. The sound level at each instant of time is the grey trace going from left to right. Over the total time it was measured (1 hour in the figure), the sound energy spends certain fractions of time near various levels, ranging from the minimum (about 27 dB in the figure) to the maximum (about 65 dB in the figure). The simplest descriptor is the average sound level, known as the Equivalent Continuous

⁷ There is a third time response defined by standards, the “Impulse” response. This response was defined to enable use of older, analog meters when measuring very brief sounds; it is no longer in common use.

Sound Level. Statistical levels are used to determine for what percentage of time the sound is louder than any given level. These levels are described in the following sections.

Equivalent Continuous Sound Level - L_{eq}

One straightforward, common way of describing sound levels is in terms of the Continuous Equivalent Sound Level, or L_{eq} . The L_{eq} is the average sound pressure level over a defined period of time, such as one hour or one day. L_{eq} is the most commonly used descriptor in noise standards and regulations. L_{eq} is representative of the overall sound to which a person is exposed. Because of the logarithmic calculation of decibels, L_{eq} tends to favor higher sound levels: loud and infrequent sources have a larger impact on the resulting average sound level than quieter but more frequent sounds. For example, in Figure 19, even though the sound levels spends most of the time near about 34 dBA, the L_{eq} is 41 dBA, having been “inflated” by the maximum level of 65 dBA and other occasional spikes over the course of the hour.

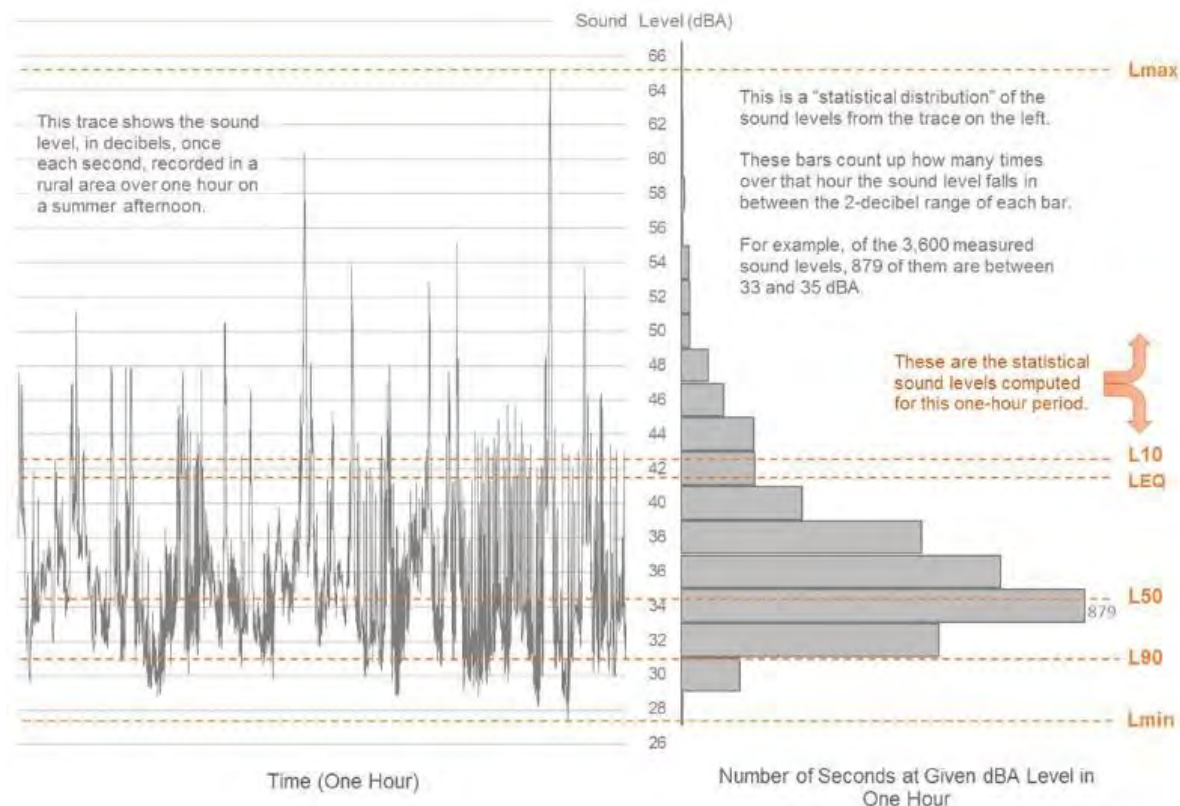


FIGURE 19: EXAMPLE OF DESCRIPTIVE TERMS OF SOUND MEASUREMENT OVER TIME

Percentile Sound Levels – L_n

Percentile sound levels describe the statistical distribution of sound levels over time. “ L_N ” is the level above which the sound spends “N” percent of the time. For example, L_{90} (sometimes called the “residual base level”) is the sound level exceeded 90% of the time: the sound is louder than L_{90} most of the time. L_{10} is the sound level that is exceeded only 10% of the time. L_{50} (the “median level”) is exceeded 50% of the time: half of the time the sound is louder than L_{50} , and half the time it is quieter than L_{50} . Note that L_{50} (median) and L_{EQ} (mean) are not always the same, for reasons described in the previous section.

L_{90} is often a good representation of the “ambient sound” in an area. This is the sound that persists for longer periods, and below which the overall sound level seldom falls. It tends to filter out other short-term environmental sounds that aren’t part of the source being investigated. L_{10} represents the higher, but less frequent, sound levels. These could include such events as barking dogs, vehicles driving by and aircraft flying overhead, gusts of wind, and work operations. L_{90} represents the background sound that is present when these event sounds are excluded.

Note that if one sound source is very constant and dominates the soundscape in an area, all of the descriptive sound levels mentioned here tend toward the same value. It is when the sound is varying widely from one moment to the next that the statistical descriptors are useful.

APPENDIX B. MODEL INPUT DATA

TABLE 4: MODEL PARAMETER SETTINGS

Model Parameter	Setting
Atmospheric Absorption	Based on 10°C and 70% RH
Foliage	No Foliage Attenuation
Ground Absorption	ISO 9613-2 spectral, G=0 on concrete equipment pads, G=0.6 at substation, and G=1 elsewhere
Receiver Height	4 meters for sound level isolines discrete receptors
Search Radius	6,000 meters from each source

TABLE 5: MODELED SOUND POWER SPECTRA, dBZ UNLESS OTHERWISE NOTED

Sound Source	1/1 Octave Band Frequency Sound Power (dBZ)									Sum (dBA)	Sum (dBZ)	Notes
	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz			
Power Electronics FS3430M Inverter	88	92	102	100	96	93	90	93	84	100	106	Sound Pressure from Manufacturer - Spectrum from Similar Unit
Transformer - ONAF Cooling	106	103	106	97	95	90	82	82	76	100	112	Sound Pressure Level from ABB Test - Spectrum from RSG Test of Similar Transformer
Transformer - ONAN Cooling	91	85	96	85	79	74	68	70	65	86	100	Sound Pressure Level from ABB Test - Spectrum from RSG Test of Similar Transformer
NexTracker Tracking Motor					70					67	70	Nextracker Test with 8% duty cycle

TABLE 6: SOUND SOURCE INFORMATION

Source ID	Source Type	Relative Height (m)	Coordinates (UTM NAD83Z17N)		
			X (m)	Y (m)	Z (m)
Inv01	Inverter	2	360162	4427993	312
Inv02	Inverter	2	360295	4427991	314
Inv03	Inverter	2	360433	4427988	315
Inv04	Inverter	2	360571	4427986	315
Inv05	Inverter	2	360709	4427983	318
Inv06	Inverter	2	360266	4427686	311
Inv07	Inverter	2	360574	4427625	308
Inv08	Inverter	2	360255	4427165	306
Inv09	Inverter	2	360575	4427159	307
Inv10	Inverter	2	360212	4427534	310
Inv11	Inverter	2	360003	4426988	301
Inv12	Inverter	2	359667	4427362	302
Inv13	Inverter	2	360067	4427355	309
Inv14	Inverter	2	360267	4427351	308
Inv15	Inverter	2	360667	4427345	309
Inv16	Inverter	2	360012	4427537	309
Inv17	Inverter	2	359804	4427541	309
Inv18	Inverter	2	359867	4427358	305
Inv19	Inverter	2	360055	4427168	305
Inv20	Inverter	2	359801	4426845	301
Inv21	Inverter	2	359855	4427171	302
Inv22	Inverter	2	359719	4426992	301
Inv23	Inverter	2	360467	4427348	309
Inv24	Inverter	2	359614	4426848	300
Inv25	Inverter	2	359691	4427174	302
Inv26	Inverter	2	359987	4426842	301
Inv27	Inverter	2	359878	4426233	297
Inv28	Inverter	2	359875	4426052	295
Inv29	Inverter	2	359403	4427322	300
Inv30	Inverter	2	359117	4427327	299
Inv32	Inverter	2	359113	4427146	298
Inv33	Inverter	2	359400	4427141	299
Inv34	Inverter	2	359344	4426961	299
Inv31	Inverter	2	359406	4427503	303
Transformer - SW Location	Substation Transformer	3	359103	4427573	303

Source ID	Source Type	Relative Height (m)	Coordinates (UTM NAD83Z17N)		
			X (m)	Y (m)	Z (m)
Transformer - NE Location	Substation Transformer	3	360131	4427907	312

APPENDIX C. MODEL RESULTS FOR EACH RECEPTOR



FIGURE 20: MAP OF RECEIVER IDS – NORTHWEST VIEW

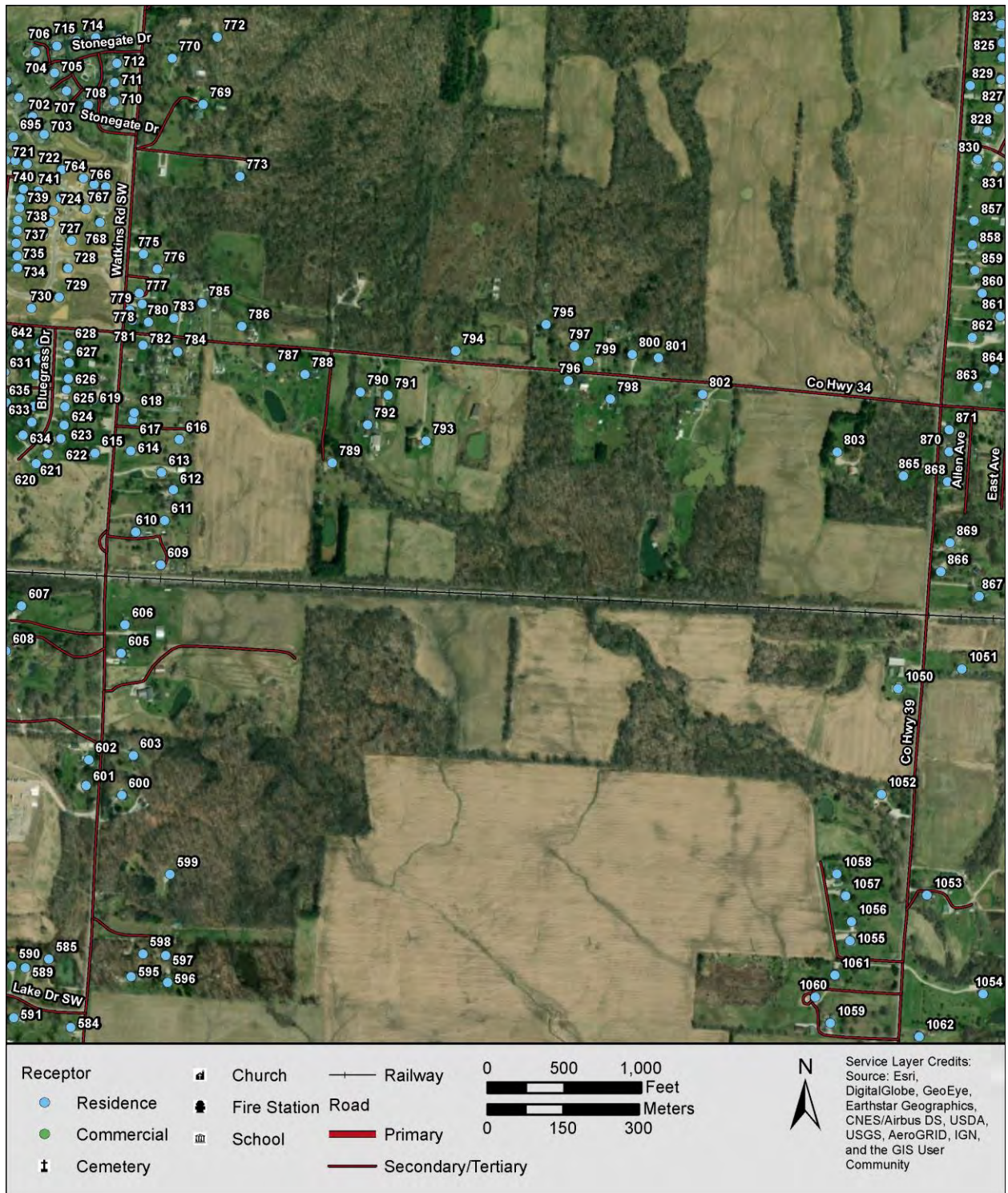


FIGURE 21: MAP OF RECEIVER IDS – NORTH CENTER VIEW



FIGURE 22: MAP OF RECEIVER IDS - NORTHEAST VIEW



FIGURE 23: MAP OF RECEIVER IDS - WEST-CENTER VIEW

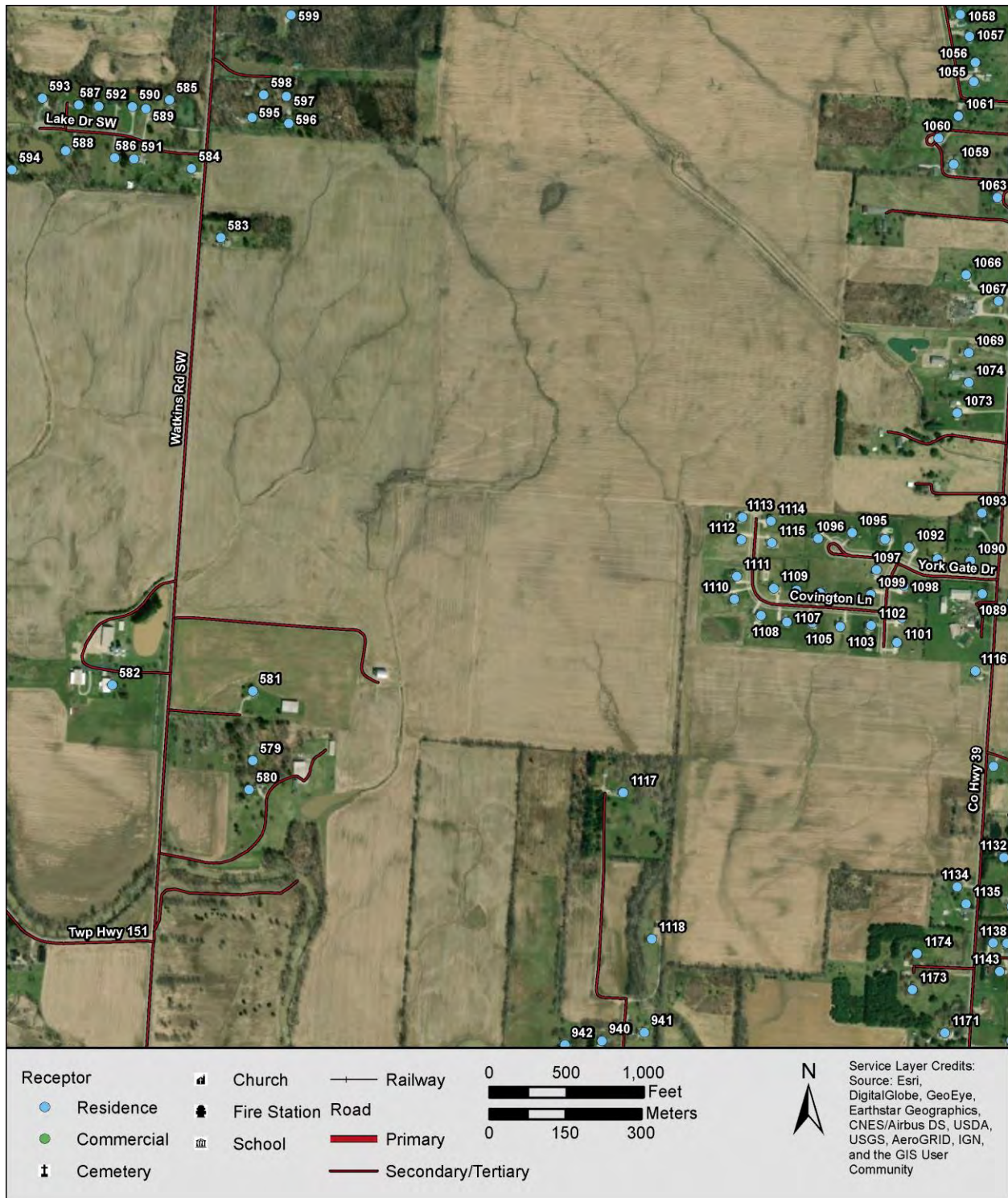


FIGURE 24: MAP OF RECEIVER IDS - CENTER VIEW



FIGURE 25: MAP OF RECEIVER IDS - EAST-CENTER VIEW

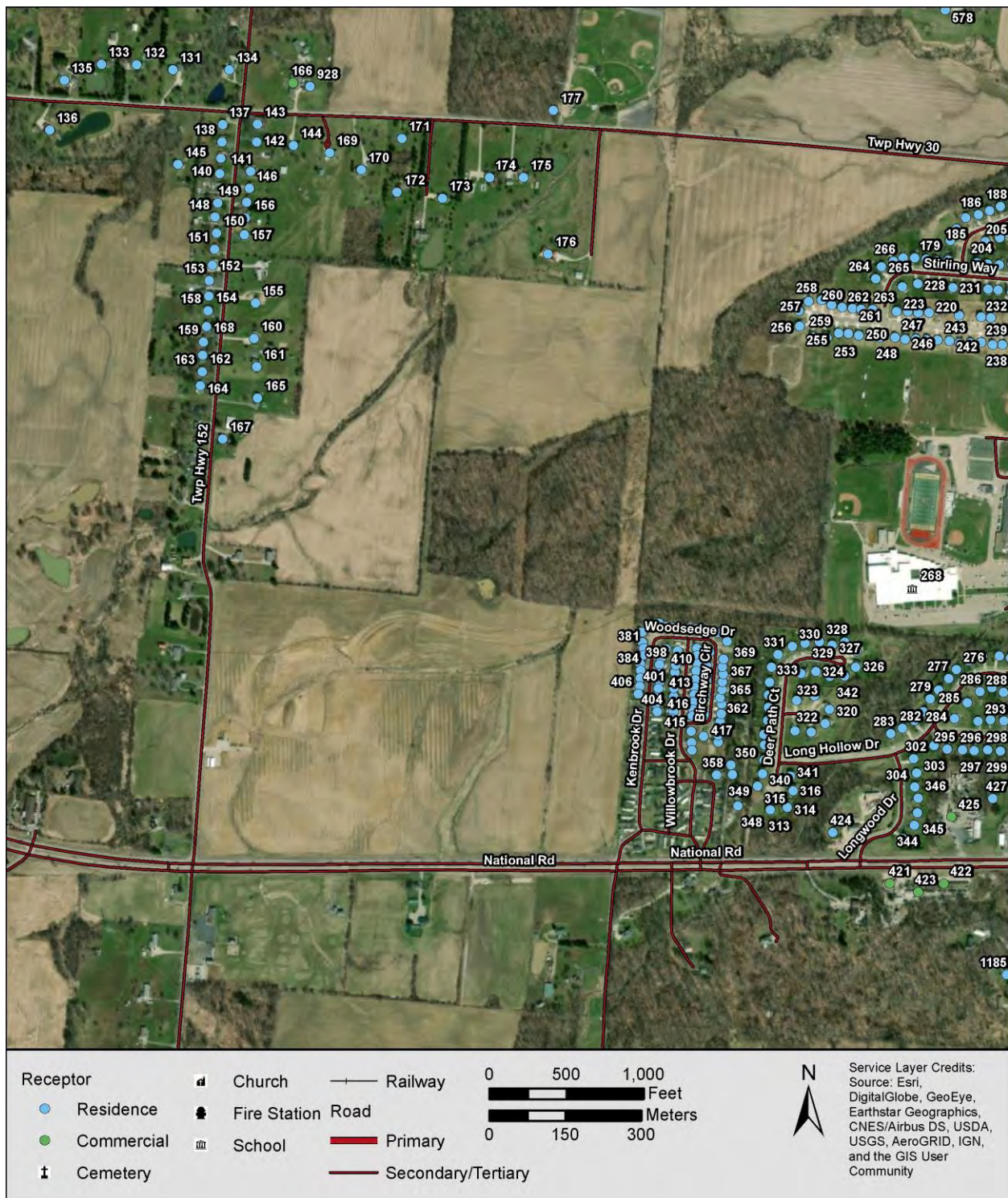


FIGURE 26: MAP OF RECEIVER IDS - SOUTHWEST VIEW

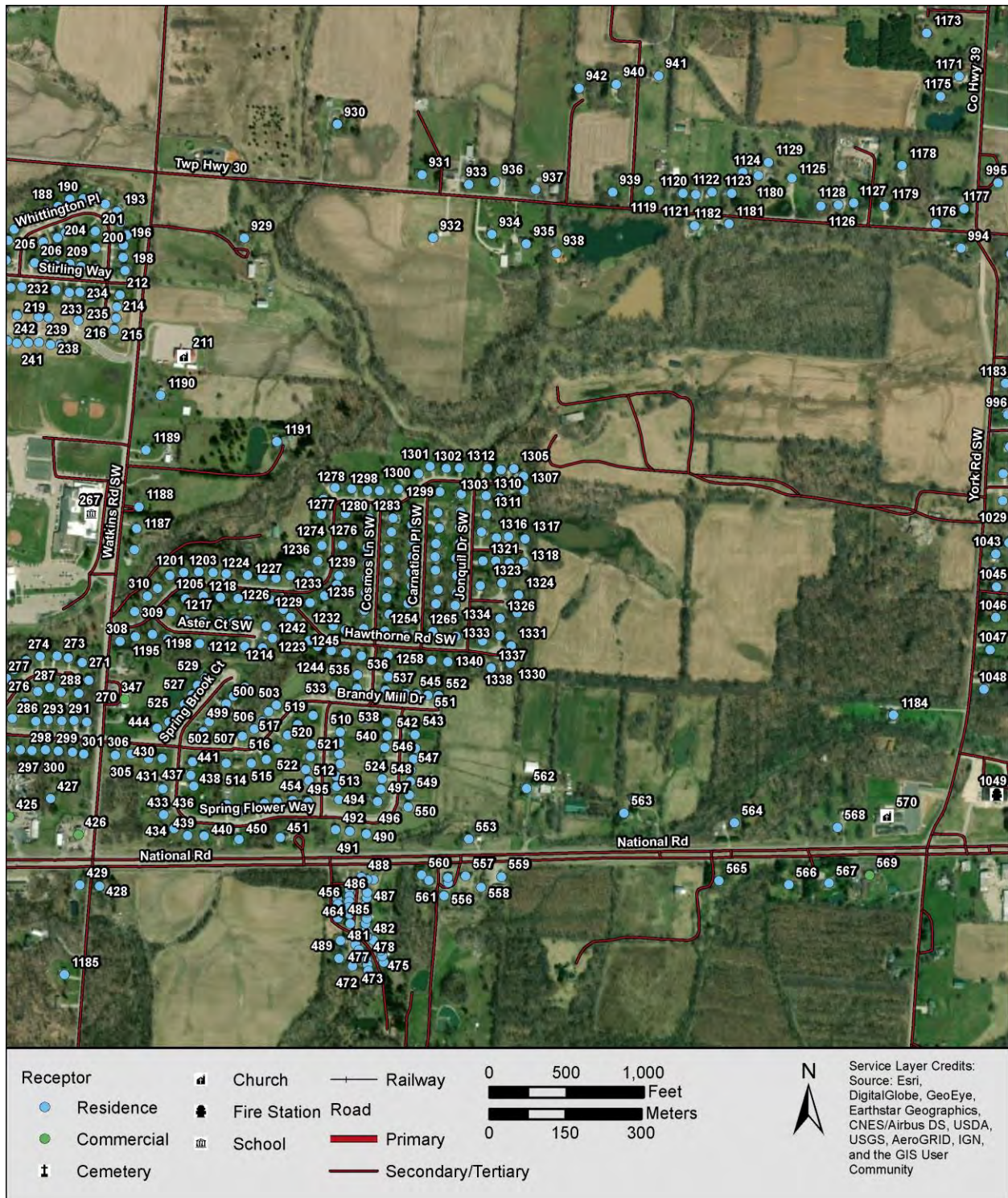


FIGURE 27: MAP OF RECEIVER IDS - SOUTH-CENTER VIEW



FIGURE 28: MAP OF RECEIVER IDS - SOUTHEAST VIEW

TABLE 7: MODEL RESULTS & RECEIVER COORDINATES

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
1	Residence	26	25	4	357713	4428107	306
2	Residence	26	25	4	357710	4428134	307
3	Residence	26	25	4	357709	4428162	307
4	Residence	26	25	4	357717	4428186	308
5	Residence	26	25	4	357738	4428197	308
6	Residence	26	24	4	357698	4428234	308
7	Residence	25	24	4	357683	4428212	308
8	Residence	26	24	4	357664	4428168	308
9	Residence	26	24	4	357663	4428141	307
10	Residence	26	24	4	357660	4428115	306
11	Residence	26	25	4	357658	4428092	306
12	Residence	26	25	4	357708	4428080	306
13	Residence	26	25	4	357714	4428048	305
14	Residence	26	24	4	357666	4428054	306
15	Residence	25	24	4	357647	4428054	306
16	Residence	25	24	4	357619	4428061	306
17	Residence	25	24	4	357596	4428073	306
18	Residence	25	24	4	357577	4428096	306
19	Residence	25	24	4	357578	4428117	306
20	Residence	25	24	4	357587	4428142	306
21	Residence	25	24	4	357588	4428162	306
22	Residence	25	24	4	357595	4428185	306
23	Residence	25	24	4	357593	4428208	307
24	Residence	25	24	4	357592	4428229	307
25	Residence	25	24	4	357598	4428251	307
26	Residence	25	24	4	357605	4428270	307
27	Residence	25	24	4	357630	4428287	308
28	Residence	25	24	4	357651	4428292	308
29	Residence	25	24	4	357675	4428287	308
30	Residence	26	25	4	357746	4428004	305
31	Residence	26	25	4	357719	4428004	305
32	Residence	26	25	4	357690	4428011	305
33	Residence	26	24	4	357665	4428008	305
34	Residence	26	24	4	357644	4428012	305
35	Residence	25	24	4	357608	4428012	306

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
36	Residence	25	24	4	357580	4428020	306
37	Residence	25	24	4	357559	4428031	306
38	Residence	25	24	4	357544	4428050	306
39	Residence	25	24	4	357537	4428072	306
40	Residence	25	24	4	357534	4428099	306
41	Residence	25	24	4	357538	4428123	306
42	Residence	24	23	4	357537	4428170	306
43	Residence	24	23	4	357543	4428193	306
44	Residence	24	23	4	357544	4428218	306
45	Residence	24	23	4	357543	4428238	306
46	Residence	24	23	4	357546	4428260	305
47	Residence	24	23	4	357551	4428287	305
48	Residence	25	23	4	357538	4428146	306
49	Residence	24	23	4	357578	4428319	307
50	Residence	25	24	4	357601	4428327	308
51	Residence	25	24	4	357625	4428336	308
52	Residence	25	24	4	357649	4428333	308
53	Residence	25	24	4	357671	4428332	308
54	Residence	25	24	4	357615	4428377	308
55	Residence	25	24	4	357645	4428387	308
56	Residence	25	24	4	357678	4428382	309
57	Residence	25	24	4	357724	4428348	308
58	Residence	25	24	4	357721	4428326	308
59	Residence	26	24	4	357718	4428294	308
60	Residence	26	24	4	357734	4428276	308
61	Residence	26	25	4	357768	4428244	308
62	Residence	26	25	4	357799	4428286	308
63	Residence	26	25	4	357818	4428307	308
64	Residence	26	25	4	357826	4428339	308
65	Residence	26	25	4	357825	4428375	308
66	Residence	26	25	4	357828	4428403	309
67	Residence	25	24	4	357777	4428404	309
68	Residence	26	24	4	357777	4428373	309
69	Residence	26	24	4	357766	4428339	308
70	Residence	25	24	4	357726	4428385	309
71	Residence	25	24	4	357728	4428412	309

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
72	Residence	25	24	4	357725	4428442	309
73	Residence	25	24	4	357718	4428470	309
74	Residence	25	24	4	357677	4428431	309
75	Residence	24	23	4	357639	4428440	308
76	Residence	25	23	4	357667	4428458	308
77	Residence	25	23	4	357704	4428497	309
78	Residence	25	24	4	357785	4428469	309
79	Residence	25	24	4	357779	4428436	309
80	Residence	26	24	4	357832	4428441	309
81	Residence	25	24	4	357842	4428475	309
82	Residence	25	24	4	357796	4428497	309
83	Residence	25	24	4	357830	4428537	309
84	Residence	25	24	4	357881	4428503	309
85	Residence	26	24	4	357884	4428473	309
86	Residence	26	24	4	357881	4428443	309
87	Residence	26	25	4	357875	4428412	309
88	Residence	26	25	4	357874	4428374	308
89	Residence	26	25	4	357926	4428357	309
90	Residence	26	25	4	357930	4428387	309
91	Residence	26	25	4	357930	4428423	309
92	Residence	26	25	4	357933	4428447	309
93	Residence	26	25	4	357932	4428480	309
94	Residence	26	24	4	357931	4428516	309
95	Residence	25	24	4	357791	4428541	309
96	Residence	25	23	4	357760	4428542	309
97	Residence	25	24	4	357918	4428550	310
98	Residence	25	24	4	357893	4428572	310
99	Residence	25	23	4	357863	4428585	309
100	Residence	25	23	4	357823	4428588	309
101	Residence	25	23	4	357795	4428590	309
102	Residence	25	23	4	357766	4428591	309
103	Residence	25	23	4	357728	4428542	309
104	Commercial	28	27	4	357810	4427232	302
105	Residence	25	24	4	357426	4427327	303
106	Residence	25	24	4	357434	4427301	303
107	Residence	26	25	4	357464	4427276	303

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
108	Residence	27	26	4	357650	4427181	302
109	Residence	27	26	4	357698	4427177	302
110	Residence	28	26	4	357736	4427163	302
111	Residence	28	27	4	357784	4427136	302
112	Residence	26	25	4	357481	4427155	303
113	Residence	25	24	4	357404	4427127	303
114	Residence	25	24	4	357385	4427192	303
115	Residence	25	24	4	357358	4427187	303
116	Residence	28	27	4	357838	4427149	302
117	Residence	26	25	4	357498	4427086	302
118	Residence	28	27	4	357794	4427037	302
119	Residence	28	27	4	357775	4426978	302
120	Residence	26	25	4	357381	4426851	306
121	Residence	27	26	4	357641	4426799	303
122	Residence	27	27	4	357735	4426668	302
123	Residence	27	27	4	357746	4426584	302
124	Residence	27	26	4	357709	4426326	306
125	Residence	28	27	4	357811	4426344	304
126	Residence	27	26	4	357713	4426421	304
127	Residence	27	26	4	357736	4426494	303
128	Residence	27	26	4	357688	4426255	307
129	Residence	27	26	4	357703	4426165	306
130	Residence	26	25	4	357638	4426099	307
131	Residence	25	25	4	357617	4425958	305
132	Residence	25	25	4	357545	4425967	307
133	Residence	25	24	4	357476	4425968	309
134	Residence	26	25	4	357728	4425957	305
135	Residence	24	24	4	357403	4425937	308
136	Residence	24	23	4	357374	4425839	307
137	Residence	26	25	4	357715	4425849	306
138	Residence	26	25	4	357713	4425815	307
139	Residence	26	25	4	357712	4425782	307
140	Residence	26	25	4	357709	4425753	308
141	Residence	26	25	4	357770	4425757	307
142	Residence	26	25	4	357782	4425815	307
143	Residence	26	25	4	357784	4425850	307

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
144	Residence	26	26	4	357855	4425808	307
145	Residence	25	24	4	357627	4425770	307
146	Residence	26	25	4	357768	4425723	308
147	Residence	25	25	4	357760	4425664	309
148	Residence	25	24	4	357700	4425667	309
149	Residence	25	24	4	357705	4425694	308
150	Residence	25	24	4	357703	4425635	309
151	Residence	25	24	4	357700	4425603	310
152	Residence	25	24	4	357695	4425572	310
153	Residence	25	24	4	357689	4425541	310
154	Residence	25	24	4	357688	4425510	310
155	Residence	25	24	4	357780	4425497	309
156	Residence	26	25	4	357763	4425696	308
157	Residence	25	24	4	357758	4425632	309
158	Residence	24	24	4	357687	4425481	310
159	Residence	24	23	4	357677	4425420	310
160	Residence	25	24	4	357777	4425427	310
161	Residence	24	24	4	357782	4425371	310
162	Residence	24	23	4	357676	4425394	310
163	Residence	24	23	4	357675	4425361	310
164	Residence	24	23	4	357671	4425334	311
165	Residence	24	23	4	357784	4425310	310
166	Commercial	27	26	4	357854	4425931	306
167	Residence	24	23	4	357715	4425229	312
168	Residence	24	23	4	357683	4425451	310
169	Residence	27	26	4	357926	4425793	306
170	Residence	27	26	4	357988	4425760	306
171	Residence	27	27	4	358069	4425821	305
172	Residence	27	26	4	358059	4425716	306
173	Residence	27	26	4	358149	4425703	306
174	Residence	28	27	4	358241	4425745	304
175	Residence	28	27	4	358309	4425745	303
176	Residence	28	27	4	358357	4425594	306
177	Residence	29	28	4	358368	4425877	302
178	Residence	30	30	4	359058	4425586	300
179	Residence	31	30	4	359080	4425586	300

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
180	Residence	31	30	4	359103	4425584	300
181	Residence	31	30	4	359125	4425580	299
182	Residence	31	30	4	359147	4425582	299
183	Residence	31	30	4	359151	4425621	299
184	Residence	31	31	4	359163	4425643	298
185	Residence	31	31	4	359181	4425665	297
186	Residence	31	31	4	359206	4425672	297
187	Residence	32	31	4	359228	4425679	297
188	Residence	32	31	4	359250	4425688	296
189	Residence	32	31	4	359273	4425702	296
190	Residence	32	31	4	359299	4425703	295
191	Residence	32	32	4	359322	4425703	295
192	Residence	32	32	4	359343	4425692	295
193	Residence	32	32	4	359366	4425678	296
194	Residence	32	32	4	359373	4425656	297
195	Residence	32	32	4	359386	4425631	297
196	Residence	32	31	4	359378	4425612	297
197	Residence	32	31	4	359378	4425587	297
198	Residence	31	31	4	359382	4425561	297
199	Residence	31	31	4	359324	4425566	297
200	Residence	32	31	4	359324	4425605	297
201	Residence	32	31	4	359323	4425639	297
202	Residence	32	31	4	359285	4425645	297
203	Residence	31	31	4	359265	4425636	297
204	Residence	31	31	4	359249	4425626	297
205	Residence	31	31	4	359220	4425618	298
206	Residence	31	30	4	359204	4425576	298
207	Residence	31	30	4	359225	4425574	298
208	Residence	31	31	4	359247	4425572	298
209	Residence	31	31	4	359273	4425574	298
210	Residence	31	31	4	359295	4425569	298
211	Church	31	30	4	359498	4425392	300
212	Residence	31	31	4	359372	4425513	298
213	Residence	31	31	4	359366	4425489	298
214	Residence	31	31	4	359364	4425467	299
215	Residence	31	30	4	359361	4425444	300

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
216	Residence	31	30	4	359290	4425463	300
217	Residence	31	30	4	359231	4425468	301
218	Residence	30	30	4	359211	4425470	301
219	Residence	30	30	4	359169	4425473	301
220	Residence	30	30	4	359109	4425478	302
221	Residence	30	29	4	359088	4425478	302
222	Residence	30	29	4	359067	4425480	302
223	Residence	30	29	4	359045	4425480	303
224	Residence	30	30	4	359056	4425529	302
225	Residence	30	30	4	359087	4425535	301
226	Residence	30	30	4	359109	4425533	301
227	Residence	30	30	4	359135	4425528	300
228	Residence	31	30	4	359156	4425528	300
229	Residence	31	30	4	359178	4425529	300
230	Residence	31	30	4	359201	4425526	300
231	Residence	31	30	4	359226	4425524	299
232	Residence	31	30	4	359246	4425523	299
233	Residence	31	30	4	359272	4425518	299
234	Residence	31	30	4	359293	4425519	299
235	Residence	31	30	4	359315	4425508	299
236	Residence	30	30	4	359279	4425411	301
237	Residence	30	30	4	359254	4425414	302
238	Residence	30	30	4	359235	4425415	302
239	Residence	30	30	4	359212	4425419	302
240	Residence	30	30	4	359190	4425419	301
241	Residence	30	29	4	359169	4425418	301
242	Residence	30	29	4	359149	4425422	301
243	Residence	30	29	4	359126	4425423	302
244	Residence	30	29	4	359104	4425425	302
245	Residence	30	29	4	359083	4425426	302
246	Residence	30	29	4	359061	4425425	302
247	Residence	29	29	4	359042	4425429	303
248	Residence	29	29	4	359011	4425429	303
249	Residence	29	29	4	358996	4425434	303
250	Residence	29	29	4	358971	4425433	303
251	Residence	29	29	4	358950	4425437	304

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
252	Residence	29	29	4	358931	4425438	304
253	Residence	29	28	4	358908	4425429	304
254	Residence	29	28	4	358881	4425430	304
255	Residence	29	28	4	358853	4425451	304
256	Residence	29	28	4	358852	4425482	303
257	Residence	29	29	4	358871	4425500	302
258	Residence	29	29	4	358897	4425503	302
259	Residence	29	29	4	358917	4425493	303
260	Residence	29	29	4	358938	4425489	303
261	Residence	30	29	4	358958	4425486	303
262	Residence	30	29	4	358975	4425485	303
263	Residence	30	29	4	358998	4425484	303
264	Residence	30	29	4	359004	4425545	301
265	Residence	30	30	4	359015	4425568	301
266	Residence	30	30	4	359039	4425579	300
267	School	28	27	4	359315	4425081	302
268	School	26	26	4	359076	4424932	303
269	Residence	26	25	4	359290	4424727	307
270	Residence	26	25	4	359310	4424753	307
271	Residence	26	26	4	359297	4424788	305
272	Residence	26	26	4	359270	4424797	304
273	Residence	26	26	4	359247	4424801	303
274	Residence	26	25	4	359214	4424800	303
275	Residence	25	25	4	359187	4424792	302
276	Residence	25	25	4	359163	4424774	303
277	Residence	25	25	4	359148	4424756	303
278	Residence	25	25	4	359128	4424733	304
279	Residence	25	24	4	359111	4424716	304
280	Residence	25	25	4	359098	4424691	306
281	Residence	25	24	4	359080	4424673	307
282	Residence	25	24	4	359056	4424658	306
283	Residence	25	24	4	359034	4424647	305
284	Residence	25	25	4	359159	4424677	307
285	Residence	26	25	4	359184	4424709	306
286	Residence	26	25	4	359210	4424730	306
287	Residence	26	25	4	359233	4424738	306

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
288	Residence	26	25	4	359256	4424729	307
289	Residence	25	25	4	359306	4424671	309
290	Residence	25	25	4	359281	4424674	308
291	Residence	25	25	4	359257	4424673	308
292	Residence	25	25	4	359230	4424675	308
293	Residence	25	25	4	359205	4424672	308
294	Residence	25	24	4	359119	4424624	308
295	Residence	25	24	4	359145	4424617	309
296	Residence	25	24	4	359175	4424616	310
297	Residence	25	24	4	359198	4424614	310
298	Residence	25	24	4	359225	4424615	310
299	Residence	25	24	4	359250	4424613	309
300	Residence	25	25	4	359278	4424611	309
301	Residence	25	25	4	359300	4424607	309
302	Residence	25	24	4	359078	4424598	308
303	Residence	25	24	4	359085	4424570	309
304	Residence	24	24	4	359081	4424542	311
305	Residence	25	25	4	359363	4424605	307
306	Residence	25	25	4	359394	4424607	307
307	Residence	25	25	4	359429	4424598	308
308	Residence	26	26	4	359372	4424830	304
309	Residence	27	26	4	359401	4424888	301
310	Residence	27	26	4	359426	4424919	301
311	Residence	25	25	4	358942	4424761	306
312	Residence	25	25	4	358964	4424779	305
313	Residence	24	23	4	358796	4424497	310
314	Residence	23	23	4	358829	4424502	307
315	Residence	24	23	4	358770	4424544	312
316	Residence	24	23	4	358841	4424535	307
317	Residence	25	24	4	358845	4424653	309
318	Residence	25	24	4	358876	4424650	308
319	Residence	25	24	4	358904	4424667	307
320	Residence	25	24	4	358913	4424695	307
321	Residence	25	24	4	358883	4424722	307
322	Residence	25	24	4	358847	4424713	309
323	Residence	25	25	4	358856	4424766	308

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
324	Residence	25	25	4	358885	4424770	307
325	Residence	26	25	4	358943	4424828	306
326	Residence	26	25	4	358965	4424811	305
327	Residence	26	25	4	358918	4424822	307
328	Residence	26	25	4	358893	4424829	307
329	Residence	25	25	4	358865	4424826	308
330	Residence	25	25	4	358839	4424819	308
331	Residence	25	25	4	358811	4424803	308
332	Residence	25	24	4	358798	4424778	309
333	Residence	25	24	4	358794	4424749	309
334	Residence	25	24	4	358792	4424724	309
335	Residence	25	24	4	358792	4424699	309
336	Residence	25	24	4	358790	4424673	310
337	Residence	24	24	4	358783	4424646	311
338	Residence	24	24	4	358784	4424625	311
339	Residence	24	23	4	358783	4424595	311
340	Residence	24	23	4	358780	4424568	311
341	Residence	24	23	4	358835	4424564	309
342	Residence	25	25	4	358913	4424760	306
343	Residence	24	23	4	359056	4424441	313
344	Residence	24	23	4	359080	4424467	312
345	Residence	24	24	4	359086	4424491	312
346	Residence	24	24	4	359088	4424520	311
347	Commercial	26	25	4	359381	4424715	307
348	Residence	24	23	4	358732	4424505	314
349	Residence	24	23	4	358721	4424566	313
350	Residence	24	23	4	358718	4424586	313
351	Residence	24	23	4	358693	4424631	312
352	Residence	24	24	4	358693	4424644	312
353	Residence	24	24	4	358693	4424659	311
354	Residence	24	23	4	358664	4424642	312
355	Residence	24	23	4	358640	4424652	312
356	Residence	24	23	4	358640	4424630	312
357	Residence	24	23	4	358641	4424615	313
358	Residence	24	23	4	358690	4424565	313
359	Residence	24	24	4	358696	4424671	311

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
360	Residence	24	24	4	358699	4424686	311
361	Residence	24	24	4	358700	4424706	310
362	Residence	25	24	4	358697	4424718	310
363	Residence	25	24	4	358700	4424734	310
364	Residence	25	24	4	358701	4424749	309
365	Residence	25	24	4	358703	4424764	309
366	Residence	25	24	4	358702	4424779	309
367	Residence	25	24	4	358704	4424794	309
368	Residence	25	24	4	358676	4424808	309
369	Residence	25	24	4	358711	4424829	309
370	Residence	25	24	4	358691	4424846	308
371	Residence	25	24	4	358680	4424850	309
372	Residence	25	24	4	358663	4424853	309
373	Residence	25	24	4	358651	4424855	309
374	Residence	25	24	4	358632	4424854	309
375	Residence	25	24	4	358619	4424855	309
376	Residence	25	24	4	358603	4424857	309
377	Residence	25	24	4	358590	4424859	309
378	Residence	25	24	4	358577	4424865	309
379	Residence	25	24	4	358543	4424847	309
380	Residence	25	24	4	358544	4424827	309
381	Residence	25	24	4	358546	4424816	310
382	Residence	25	24	4	358543	4424801	310
383	Residence	24	24	4	358539	4424786	310
384	Residence	24	24	4	358539	4424772	310
385	Residence	24	24	4	358539	4424757	310
386	Residence	24	24	4	358538	4424741	310
387	Residence	24	24	4	358605	4424691	311
388	Residence	24	24	4	358606	4424705	311
389	Residence	24	24	4	358605	4424721	311
390	Residence	24	24	4	358605	4424737	310
391	Residence	24	24	4	358608	4424752	310
392	Residence	25	24	4	358607	4424768	310
393	Residence	25	24	4	358609	4424782	310
394	Residence	25	24	4	358612	4424797	310
395	Residence	25	24	4	358613	4424811	310

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
396	Residence	25	24	4	358590	4424815	310
397	Residence	25	24	4	358580	4424797	310
398	Residence	25	24	4	358577	4424784	310
399	Residence	24	24	4	358575	4424767	310
400	Residence	24	24	4	358578	4424749	310
401	Residence	24	24	4	358574	4424736	310
402	Residence	24	24	4	358568	4424720	311
403	Residence	24	23	4	358570	4424705	311
404	Residence	24	23	4	358573	4424690	311
405	Residence	24	23	4	358601	4424677	311
406	Residence	24	23	4	358535	4424726	310
407	Residence	25	24	4	358651	4424816	309
408	Residence	25	24	4	358651	4424801	309
409	Residence	25	24	4	358652	4424785	309
410	Residence	25	24	4	358649	4424771	309
411	Residence	25	24	4	358648	4424754	310
412	Residence	25	24	4	358647	4424740	310
413	Residence	24	24	4	358646	4424724	310
414	Residence	24	24	4	358644	4424710	310
415	Residence	24	24	4	358643	4424695	311
416	Residence	24	24	4	358642	4424682	311
417	Residence	24	24	4	358666	4424685	311
418	Residence	25	24	4	358667	4424726	310
419	Residence	25	24	4	358670	4424753	309
420	Residence	25	24	4	358670	4424781	309
421	Abandoned Commercial	23	23	4	359031	4424351	316
422	Abandoned Commercial	24	23	4	359138	4424352	313
423	Abandoned Commercial	23	23	4	359088	4424335	314
424	Residence	24	23	4	358919	4424452	312
425	Commercial	24	24	4	359153	4424484	312
426	Commercial	24	24	4	359290	4424448	311
427	Residence	25	24	4	359235	4424519	311
428	Residence	24	23	4	359331	4424346	314
429	Residence	24	23	4	359292	4424348	313
430	Residence	25	25	4	359455	4424599	307
431	Residence	25	24	4	359456	4424539	308

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
432	Residence	25	24	4	359454	4424512	308
433	Residence	25	24	4	359458	4424487	309
434	Residence	25	24	4	359479	4424460	308
435	Residence	25	24	4	359512	4424513	307
436	Residence	25	24	4	359517	4424544	307
437	Residence	25	24	4	359512	4424565	307
438	Residence	25	25	4	359515	4424592	307
439	Residence	24	24	4	359505	4424447	308
440	Residence	24	24	4	359538	4424446	309
441	Residence	25	25	4	359581	4424588	307
442	Residence	26	25	4	359536	4424651	306
443	Residence	26	25	4	359469	4424670	306
444	Residence	26	25	4	359445	4424658	306
445	Residence	25	24	4	359582	4424507	309
446	Residence	25	24	4	359609	4424495	308
447	Residence	25	24	4	359636	4424502	308
448	Residence	25	24	4	359657	4424509	308
449	Residence	25	24	4	359682	4424513	307
450	Residence	24	24	4	359607	4424439	310
451	Residence	24	24	4	359688	4424442	309
452	Residence	25	24	4	359713	4424515	306
453	Residence	25	24	4	359743	4424513	305
454	Residence	25	25	4	359745	4424554	305
455	Residence	23	22	4	359801	4424321	308
456	Residence	22	22	4	359801	4424310	307
457	Residence	22	21	4	359802	4424298	306
458	Residence	22	22	4	359802	4424284	307
459	Residence	23	22	4	359824	4424340	306
460	Residence	22	22	4	359824	4424327	305
461	Residence	22	21	4	359824	4424316	305
462	Residence	22	22	4	359823	4424304	305
463	Residence	22	22	4	359825	4424291	306
464	Residence	22	22	4	359826	4424272	306
465	Residence	22	22	4	359807	4424239	307
466	Residence	23	22	4	359837	4424231	307
467	Residence	23	23	4	359843	4424220	307

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
468	Residence	23	23	4	359850	4424210	308
469	Residence	23	23	4	359858	4424201	308
470	Residence	23	23	4	359860	4424191	308
471	Residence	23	22	4	359862	4424179	308
472	Residence	23	22	4	359831	4424189	309
473	Residence	23	23	4	359893	4424197	307
474	Residence	23	23	4	359889	4424209	307
475	Residence	23	23	4	359886	4424219	307
476	Residence	23	23	4	359880	4424230	306
477	Residence	23	22	4	359871	4424240	306
478	Residence	23	22	4	359859	4424247	306
479	Residence	23	22	4	359857	4424259	306
480	Residence	22	22	4	359857	4424273	305
481	Residence	22	22	4	359859	4424282	305
482	Residence	22	22	4	359859	4424295	305
483	Residence	22	21	4	359857	4424310	305
484	Residence	22	22	4	359859	4424324	305
485	Residence	22	22	4	359859	4424333	305
486	Residence	24	23	4	359872	4424360	306
487	Residence	24	23	4	359860	4424359	306
488	Residence	24	23	4	359848	4424364	306
489	Residence	23	22	4	359804	4424204	309
490	Residence	25	24	4	359858	4424449	306
491	Residence	25	24	4	359825	4424454	306
492	Residence	25	24	4	359797	4424458	306
493	Residence	25	24	4	359804	4424517	305
494	Residence	25	25	4	359799	4424543	305
495	Residence	25	25	4	359799	4424564	305
496	Residence	25	24	4	359880	4424514	304
497	Residence	25	24	4	359886	4424538	304
498	Residence	26	26	4	359618	4424739	304
499	Residence	26	26	4	359596	4424722	305
500	Residence	26	25	4	359581	4424706	305
501	Residence	26	25	4	359566	4424690	305
502	Residence	26	25	4	359548	4424671	306
503	Residence	26	25	4	359680	4424704	303

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
504	Residence	26	25	4	359665	4424691	304
505	Residence	26	25	4	359653	4424672	305
506	Residence	26	25	4	359637	4424657	305
507	Residence	26	25	4	359614	4424642	306
508	Residence	26	25	4	359856	4424675	304
509	Residence	26	25	4	359807	4424679	304
510	Residence	26	25	4	359806	4424651	304
511	Residence	26	25	4	359805	4424629	305
512	Residence	25	25	4	359804	4424607	305
513	Residence	25	25	4	359806	4424587	305
514	Residence	25	25	4	359631	4424589	308
515	Residence	25	25	4	359660	4424596	308
516	Residence	26	25	4	359683	4424618	307
517	Residence	26	25	4	359702	4424645	305
518	Residence	26	25	4	359722	4424665	304
519	Residence	26	25	4	359753	4424683	304
520	Residence	26	25	4	359749	4424626	305
521	Residence	25	25	4	359747	4424602	305
522	Residence	25	25	4	359738	4424577	306
523	Residence	25	25	4	359885	4424582	304
524	Residence	25	25	4	359889	4424558	304
525	Residence	26	25	4	359482	4424686	305
526	Residence	26	25	4	359499	4424705	305
527	Residence	26	25	4	359514	4424724	305
528	Residence	26	26	4	359525	4424743	305
529	Residence	26	26	4	359541	4424757	305
530	Residence	26	26	4	359560	4424774	305
531	Residence	26	26	4	359753	4424740	304
532	Residence	26	26	4	359775	4424741	304
533	Residence	26	26	4	359795	4424742	304
534	Residence	26	26	4	359840	4424736	304
535	Residence	26	26	4	359841	4424763	304
536	Residence	26	26	4	359901	4424760	303
537	Residence	26	26	4	359896	4424733	304
538	Residence	26	25	4	359898	4424671	304
539	Residence	26	25	4	359899	4424643	304

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
540	Residence	26	25	4	359894	4424620	304
541	Residence	26	25	4	359955	4424618	304
542	Residence	26	25	4	359954	4424645	304
543	Residence	26	25	4	359955	4424667	304
544	Residence	26	26	4	359936	4424726	304
545	Residence	26	26	4	359957	4424725	304
546	Residence	25	25	4	359951	4424597	304
547	Residence	25	25	4	359946	4424575	304
548	Residence	25	25	4	359945	4424553	304
549	Residence	25	24	4	359943	4424526	304
550	Residence	25	24	4	359940	4424502	303
551	Residence	26	26	4	359979	4424723	303
552	Residence	26	26	4	360001	4424722	303
553	Residence	24	24	4	360060	4424439	305
554	Residence	24	23	4	360019	4424353	307
555	Residence	24	23	4	360019	4424363	307
556	Residence	24	23	4	360011	4424327	307
557	Residence	24	23	4	360054	4424366	306
558	Abandoned Residence	24	23	4	360085	4424344	306
559	Residence	24	23	4	360125	4424365	305
560	Residence	24	23	4	359967	4424369	306
561	Residence	24	23	4	359982	4424358	307
562	Residence	25	24	4	360174	4424539	303
563	Residence	24	24	4	360366	4424491	302
564	Residence	24	23	4	360584	4424471	302
565	Residence	23	23	4	360554	4424357	302
566	Residence	23	22	4	360691	4424349	301
567	Residence	23	22	4	360771	4424352	301
568	Residence	23	23	4	360787	4424463	302
569	Commercial	22	22	4	360851	4424368	300
570	Church	23	23	4	360886	4424485	300
571	Residence	29	28	4	357996	4427111	300
572	Residence	32	31	4	358308	4426822	298
573	Residence	34	33	4	358548	4426794	298
574	Residence	33	33	4	358570	4426624	298
575	Residence	35	34	4	358708	4426611	297

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
576	Residence	35	35	4	358839	4426508	297
577	Residence	34	34	4	359075	4426153	298
578	Residence	34	33	4	359141	4426075	296
579	Residence	41	40	4	359662	4426482	301
580	Residence	40	40	4	359655	4426424	300
581	Residence	43	42	4	359662	4426619	301
582	Residence	40	39	4	359384	4426631	298
583	Residence	44	43	4	359599	4427513	308
584	Residence	42	41	4	359541	4427650	308
585	Residence	40	39	4	359497	4427785	311
586	Residence	42	40	4	359390	4427671	307
587	Residence	41	38	4	359318	4427776	308
588	Residence	43	40	4	359292	4427685	306
589	Residence	41	39	4	359451	4427768	310
590	Residence	41	38	4	359424	4427772	310
591	Residence	42	40	4	359428	4427669	307
592	Residence	41	38	4	359358	4427772	309
593	Residence	42	38	4	359247	4427788	308
594	Residence	49	42	4	359187	4427647	306
595	Residence	42	40	4	359660	4427750	314
596	Residence	42	41	4	359733	4427739	313
597	Residence	41	40	4	359729	4427792	313
598	Residence	41	40	4	359684	4427796	314
599	Residence	40	39	4	359738	4427953	317
600	Residence	38	37	4	359642	4428110	318
601	Residence	36	34	4	359571	4428129	314
602	Residence	35	34	4	359576	4428180	313
603	Residence	37	35	4	359665	4428188	317
604	Residence	33	32	4	359329	4428309	317
605	Residence	34	33	4	359641	4428391	317
606	Residence	33	32	4	359648	4428448	317
607	Residence	32	31	4	359443	4428485	319
608	Residence	33	32	4	359412	4428396	320
609	Residence	33	31	4	359719	4428566	319
610	Residence	32	31	4	359669	4428631	321
611	Residence	33	31	4	359727	4428654	323

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
612	Residence	33	31	4	359744	4428715	324
613	Residence	32	30	4	359721	4428750	323
614	Residence	31	29	4	359660	4428792	321
615	Residence	31	29	4	359588	4428787	322
616	Residence	31	30	4	359756	4428815	325
617	Residence	30	29	4	359664	4428854	322
618	Residence	30	29	4	359666	4428867	323
619	Residence	30	28	4	359585	4428893	323
620	Residence	30	29	4	359472	4428767	320
621	Residence	30	29	4	359495	4428786	321
622	Residence	30	29	4	359521	4428816	321
623	Residence	30	28	4	359528	4428843	321
624	Residence	30	28	4	359529	4428880	322
625	Residence	29	28	4	359532	4428914	323
626	Residence	29	28	4	359536	4428935	323
627	Residence	29	28	4	359538	4428966	324
628	Residence	29	27	4	359536	4429001	324
629	Residence	29	27	4	359480	4429007	323
630	Residence	29	27	4	359477	4428975	323
631	Residence	29	28	4	359472	4428943	322
632	Residence	29	28	4	359468	4428880	321
633	Residence	30	28	4	359464	4428849	320
634	Residence	30	28	4	359446	4428823	320
635	Residence	29	28	4	359413	4428888	320
636	Residence	29	28	4	359374	4428875	320
637	Residence	29	27	4	359340	4428899	321
638	Residence	29	27	4	359343	4428930	322
639	Residence	29	27	4	359375	4428952	321
640	Residence	29	27	4	359410	4428948	321
641	Residence	28	27	4	359404	4429002	322
642	Residence	28	27	4	359439	4429003	323
643	Residence	28	27	4	359370	4429010	323
644	Residence	28	27	4	359339	4429012	323
645	Residence	28	27	4	359294	4428964	322
646	Residence	28	26	4	359227	4429038	324
647	Residence	28	26	4	359265	4429100	325

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
648	Residence	27	26	4	359267	4429117	325
649	Residence	27	26	4	359267	4429140	326
650	Residence	27	26	4	359210	4429141	326
651	Residence	27	26	4	359208	4429118	325
652	Residence	25	24	4	359088	4429450	328
653	Residence	25	24	4	359093	4429430	327
654	Residence	25	24	4	359101	4429410	327
655	Residence	25	24	4	359107	4429389	327
656	Residence	25	24	4	359159	4429405	327
657	Residence	25	24	4	359152	4429431	328
658	Residence	25	24	4	359144	4429458	328
659	Residence	25	24	4	359135	4429485	328
660	Residence	25	24	4	359155	4429495	329
661	Residence	25	24	4	359188	4429491	331
662	Residence	25	24	4	359192	4429466	330
663	Residence	25	24	4	359192	4429439	330
664	Residence	26	24	4	359200	4429412	329
665	Residence	26	24	4	359183	4429408	328
666	Residence	25	24	4	359210	4429544	333
667	Residence	25	24	4	359182	4429553	332
668	Residence	25	24	4	359228	4429526	332
669	Residence	25	24	4	359237	4429501	332
670	Residence	26	24	4	359237	4429474	331
671	Residence	26	24	4	359245	4429451	331
672	Residence	26	25	4	359249	4429432	330
673	Residence	26	25	4	359255	4429411	330
674	Residence	26	25	4	359260	4429387	329
675	Residence	26	25	4	359265	4429367	329
676	Residence	26	25	4	359209	4429360	329
677	Residence	26	25	4	359172	4429350	328
678	Residence	26	25	4	359119	4429335	327
679	Residence	26	25	4	359209	4429341	328
680	Residence	26	25	4	359217	4429311	328
681	Residence	26	25	4	359224	4429287	327
682	Residence	27	25	4	359223	4429259	327
683	Residence	26	25	4	359293	4429368	329

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
684	Residence	26	25	4	359317	4429370	330
685	Residence	27	25	4	359319	4429311	329
686	Residence	26	25	4	359295	4429313	329
687	Residence	27	25	4	359275	4429304	328
688	Residence	27	25	4	359276	4429276	328
689	Residence	27	26	4	359274	4429252	327
690	Residence	25	24	4	359284	4429549	332
691	Residence	26	24	4	359291	4429510	332
692	Residence	26	24	4	359294	4429471	331
693	Residence	26	25	4	359345	4429424	332
694	Residence	26	25	4	359385	4429423	333
695	Residence	27	25	4	359427	4429415	333
696	Residence	26	24	4	359381	4429474	331
697	Residence	25	24	4	359345	4429502	331
698	Residence	25	24	4	359332	4429559	331
699	Residence	25	23	4	359380	4429564	330
700	Residence	25	24	4	359413	4429524	331
701	Residence	25	24	4	359438	4429492	330
702	Residence	26	25	4	359466	4429454	331
703	Residence	26	25	4	359488	4429419	331
704	Residence	25	24	4	359470	4429583	333
705	Residence	25	24	4	359508	4429541	332
706	Residence	25	24	4	359513	4429595	334
707	Residence	26	25	4	359533	4429505	333
708	Residence	26	25	4	359576	4429477	332
709	Residence	26	25	4	359625	4429444	333
710	Residence	26	25	4	359626	4429485	333
711	Residence	26	25	4	359628	4429522	334
712	Residence	26	25	4	359632	4429560	334
713	Residence	25	24	4	359638	4429608	336
714	Residence	25	24	4	359590	4429611	336
715	Residence	25	24	4	359552	4429605	334
716	Residence	26	25	4	359338	4429374	331
717	Residence	27	25	4	359366	4429376	332
718	Residence	27	25	4	359390	4429371	332
719	Residence	27	26	4	359412	4429368	332

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
720	Residence	27	26	4	359431	4429367	332
721	Residence	27	26	4	359454	4429361	333
722	Residence	27	26	4	359523	4429349	332
723	Residence	27	26	4	359521	4429293	332
724	Residence	28	26	4	359506	4429267	331
725	Residence	28	26	4	359499	4429246	330
726	Residence	28	26	4	359486	4429221	329
727	Residence	28	27	4	359542	4429209	330
728	Residence	28	27	4	359535	4429154	328
729	Residence	28	27	4	359518	4429097	326
730	Residence	28	27	4	359463	4429074	325
731	Residence	28	27	4	359405	4429086	325
732	Residence	28	26	4	359380	4429133	326
733	Residence	28	26	4	359436	4429155	326
734	Residence	27	26	4	359434	4429179	327
735	Residence	28	26	4	359433	4429203	328
736	Residence	27	26	4	359435	4429229	329
737	Residence	27	26	4	359436	4429249	330
738	Residence	27	26	4	359439	4429273	330
739	Residence	27	26	4	359441	4429292	331
740	Residence	27	26	4	359447	4429311	332
741	Residence	27	26	4	359477	4429307	332
742	Residence	27	26	4	359391	4429315	331
743	Residence	27	26	4	359389	4429292	330
744	Residence	27	26	4	359388	4429269	330
745	Residence	27	26	4	359390	4429246	329
746	Residence	27	26	4	359386	4429216	328
747	Residence	27	26	4	359361	4429217	328
748	Residence	27	26	4	359342	4429219	327
749	Residence	27	26	4	359318	4429219	327
750	Residence	27	26	4	359294	4429223	327
751	Residence	27	26	4	359277	4429227	327
752	Residence	27	26	4	359339	4429319	330
753	Residence	27	26	4	359365	4429320	331
754	Residence	27	26	4	359269	4429170	326
755	Residence	27	26	4	359288	4429170	326

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
756	Residence	27	26	4	359314	4429166	325
757	Residence	27	26	4	359337	4429170	325
758	Residence	27	26	4	359359	4429168	326
759	Residence	27	26	4	359381	4429164	327
760	Residence	27	26	4	359209	4429164	327
761	Residence	27	26	4	359216	4429184	327
762	Residence	27	26	4	359217	4429208	327
763	Residence	27	25	4	359218	4429234	327
764	Residence	27	26	4	359566	4429332	331
765	Residence	27	26	4	359587	4429320	330
766	Residence	27	26	4	359610	4429315	329
767	Residence	27	26	4	359571	4429271	331
768	Residence	28	27	4	359599	4429245	331
769	Residence	27	26	4	359803	4429478	338
770	Residence	26	24	4	359742	4429570	336
771	Residence	25	24	4	359715	4429694	339
772	Residence	27	26	4	359831	4429612	341
773	Residence	28	27	4	359876	4429336	336
774	Residence	28	26	4	359685	4429209	329
775	Residence	28	27	4	359684	4429182	330
776	Residence	28	27	4	359712	4429153	329
777	Residence	29	28	4	359677	4429105	329
778	Residence	29	28	4	359682	4429083	328
779	Residence	29	28	4	359658	4429070	327
780	Residence	29	28	4	359695	4429047	327
781	Residence	29	28	4	359663	4429051	327
782	Residence	29	28	4	359684	4429001	325
783	Residence	29	28	4	359745	4429055	328
784	Residence	30	28	4	359753	4428988	328
785	Residence	29	28	4	359801	4429084	329
786	Residence	29	28	4	359880	4429039	329
787	Residence	31	30	4	359937	4428958	330
788	Residence	30	29	4	360005	4428943	325
789	Residence	32	31	4	360059	4428769	324
790	Residence	31	29	4	360115	4428908	323
791	Residence	31	29	4	360170	4428902	323

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
792	Residence	31	30	4	360129	4428844	322
793	Residence	32	30	4	360244	4428812	322
794	Residence	31	30	4	360303	4428990	332
795	Residence	30	30	4	360483	4429043	334
796	Residence	32	31	4	360527	4428931	334
797	Residence	31	30	4	360539	4428999	334
798	Residence	31	30	4	360610	4428895	331
799	Residence	31	30	4	360566	4428970	335
800	Residence	31	30	4	360653	4428983	334
801	Residence	30	30	4	360705	4428976	334
802	Residence	31	30	4	360793	4428904	332
803	Residence	30	29	4	361059	4428790	332
804	Residence	27	26	4	359130	4429040	322
805	Residence	28	26	4	359120	4428966	322
806	Residence	27	26	4	359072	4429026	322
807	Residence	27	26	4	358980	4429021	323
808	Residence	27	26	4	358941	4429050	324
809	Residence	27	25	4	358852	4428964	323
810	Residence	27	25	4	358838	4429069	325
811	Residence	27	25	4	358767	4429044	323
812	Residence	26	25	4	358727	4429036	320
813	Residence	26	25	4	358754	4429159	325
814	Residence	26	24	4	358646	4429065	319
815	Residence	25	24	4	358623	4429200	322
816	Residence	25	24	4	358713	4429200	322
817	Residence	26	24	4	358577	4429078	320
818	Residence	26	24	4	358491	4429091	323
819	Residence	26	24	4	358533	4429084	322
820	Residence	25	24	4	358448	4429102	323
821	Residence	25	24	4	358415	4429183	323
822	Residence	26	24	4	358428	4429063	322
823	Residence	24	23	4	361384	4429637	346
824	Residence	24	23	4	361386	4429601	345
825	Residence	24	23	4	361386	4429572	345
826	Residence	24	23	4	361384	4429528	345
827	Residence	25	24	4	361380	4429471	345

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
828	Residence	25	24	4	361357	4429425	344
829	Residence	25	24	4	361323	4429516	346
830	Residence	25	24	4	361338	4429370	342
831	Residence	25	25	4	361378	4429355	342
832	Residence	25	24	4	361422	4429402	343
833	Residence	25	24	4	361432	4429440	344
834	Residence	24	23	4	361439	4429470	343
835	Residence	24	23	4	361440	4429501	343
836	Residence	24	23	4	361440	4429532	344
837	Residence	24	23	4	361440	4429564	344
838	Residence	24	23	4	361448	4429594	344
839	Residence	23	22	4	361448	4429628	344
840	Residence	25	24	4	361469	4429368	342
841	Residence	26	25	4	361402	4429333	341
842	Residence	26	25	4	361427	4429319	341
843	Residence	25	25	4	361459	4429304	340
844	Residence	25	24	4	361490	4429295	340
845	Residence	25	24	4	361511	4429356	341
846	Residence	25	24	4	361514	4429417	342
847	Residence	24	23	4	361521	4429457	342
848	Residence	24	23	4	361521	4429487	342
849	Residence	24	23	4	361524	4429517	342
850	Residence	24	23	4	361526	4429545	342
851	Residence	23	22	4	361527	4429577	343
852	Residence	23	22	4	361526	4429604	343
853	Residence	24	23	4	361571	4429357	340
854	Residence	24	23	4	361579	4429429	340
855	Residence	24	23	4	361583	4429494	341
856	Residence	23	22	4	361588	4429557	342
857	Residence	26	25	4	361331	4429248	339
858	Residence	26	25	4	361328	4429200	339
859	Residence	27	26	4	361332	4429149	338
860	Residence	27	26	4	361346	4429104	338
861	Residence	27	26	4	361383	4429058	337
862	Residence	27	26	4	361327	4429016	334
863	Residence	28	27	4	361339	4428919	333

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
864	Residence	28	27	4	361370	4428953	335
865	Residence	30	29	4	361191	4428743	330
866	Residence	31	31	4	361264	4428553	328
867	Residence	31	30	4	361340	4428504	326
868	Residence	29	28	4	361278	4428731	329
869	Residence	31	30	4	361282	4428610	329
870	Residence	29	28	4	361281	4428791	330
871	Residence	29	28	4	361281	4428834	332
872	Residence	29	29	4	361474	4428533	327
873	Residence	29	28	4	361412	4428641	325
874	Residence	29	28	4	361484	4428678	331
875	Residence	30	29	4	361478	4428602	331
876	Residence	27	27	4	361593	4428831	332
877	Residence	28	27	4	361555	4428836	333
878	Residence	29	28	4	361489	4428713	331
879	Residence	29	29	4	361528	4428501	327
880	Residence	28	27	4	361419	4428684	326
881	Residence	29	28	4	361419	4428600	326
882	Residence	30	29	4	361462	4428496	326
883	Residence	26	25	4	361658	4428825	331
884	Residence	27	27	4	361594	4428796	332
885	Residence	28	28	4	361551	4428782	334
886	Residence	27	27	4	361590	4428748	332
887	Residence	29	28	4	361536	4428731	333
888	Residence	29	28	4	361545	4428701	334
889	Residence	29	28	4	361540	4428678	334
890	Residence	29	28	4	361535	4428630	332
891	Residence	27	26	4	361653	4428760	330
892	Residence	26	25	4	361676	4428799	330
893	Residence	27	26	4	361669	4428723	329
894	Residence	27	26	4	361663	4428671	328
895	Residence	27	26	4	361707	4428607	327
896	Residence	29	29	4	361515	4428537	328
897	Residence	29	28	4	361575	4428506	328
898	Residence	29	28	4	361574	4428530	328
899	Residence	29	28	4	361637	4428495	326

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
900	Residence	28	27	4	361650	4428527	326
901	Residence	28	27	4	361640	4428567	326
902	Residence	27	26	4	361659	4428628	327
903	Residence	28	28	4	361693	4428481	327
904	Residence	28	27	4	361700	4428511	327
905	Residence	28	27	4	361751	4428484	327
906	Residence	28	27	4	361760	4428525	327
907	Residence	27	27	4	361817	4428495	327
908	Residence	27	27	4	361820	4428539	327
909	Residence	27	27	4	361764	4428558	327
910	Residence	27	26	4	361824	4428563	327
911	Residence	26	26	4	361828	4428594	327
912	Residence	27	26	4	361763	4428594	327
913	Residence	27	26	4	361761	4428629	327
914	Residence	26	25	4	361834	4428642	325
915	Residence	26	25	4	361768	4428692	327
916	Residence	26	25	4	361767	4428728	328
917	Residence	26	26	4	361713	4428727	329
918	Residence	26	25	4	361828	4428735	326
919	Residence	26	25	4	361977	4428510	326
920	Residence	26	25	4	361976	4428539	325
921	Residence	27	26	4	361909	4428511	326
922	Residence	26	25	4	361918	4428570	326
923	Residence	26	25	4	361974	4428565	325
924	Residence	26	25	4	361974	4428592	326
925	Residence	26	25	4	361915	4428612	326
926	Residence	25	25	4	361966	4428645	324
927	Residence	26	25	4	362038	4428521	325
928	Residence	27	26	4	357888	4425924	306
929	Residence	33	33	4	359617	4425625	293
930	Residence	40	40	4	359801	4425850	294
931	Residence	37	37	4	359968	4425750	296
932	Residence	34	34	4	359989	4425625	295
933	Residence	36	36	4	360060	4425731	296
934	Residence	34	33	4	360106	4425632	296
935	Residence	33	33	4	360174	4425614	296

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
936	Residence	35	35	4	360112	4425736	296
937	Residence	34	34	4	360192	4425721	295
938	Residence	32	32	4	360233	4425596	296
939	Residence	33	32	4	360344	4425716	295
940	Residence	34	34	4	360351	4425929	297
941	Residence	33	33	4	360435	4425945	296
942	Residence	36	35	4	360278	4425921	297
943	Residence	25	24	4	362103	4428460	322
944	Residence	25	24	4	362105	4428489	321
945	Residence	26	25	4	362045	4428485	325
946	Residence	25	24	4	362039	4428613	320
947	Residence	25	24	4	362106	4428604	319
948	Residence	25	24	4	362114	4428634	320
949	Residence	25	24	4	362064	4428655	320
950	Residence	24	23	4	362226	4428624	327
951	Residence	25	24	4	361966	4428694	321
952	Residence	25	24	4	361970	4428723	321
953	Residence	25	24	4	361987	4428766	323
954	Residence	26	25	4	361910	4428698	321
955	Residence	25	25	4	361912	4428724	322
956	Residence	25	24	4	361913	4428769	322
957	Residence	25	24	4	361924	4428800	322
958	Residence	24	23	4	362112	4428771	329
959	Residence	25	24	4	362068	4428757	327
960	Residence	24	23	4	362111	4428744	326
961	Residence	24	23	4	362129	4428709	323
962	Residence	24	24	4	362129	4428680	321
963	Residence	25	24	4	362059	4428729	324
964	Residence	25	24	4	362063	4428679	320
965	Residence	24	24	4	362070	4428790	329
966	Residence	25	24	4	362016	4428799	325
967	Residence	24	23	4	362181	4428786	329
968	Residence	24	23	4	362260	4428784	329
969	Residence	26	25	4	361771	4428755	329
970	Residence	26	25	4	361775	4428779	329
971	Residence	26	25	4	361826	4428791	328

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
972	Residence	26	25	4	361713	4428759	329
973	Residence	26	25	4	361721	4428818	330
974	Commercial	28	27	4	361448	4428956	336
975	Residence	27	26	4	361535	4428950	333
976	Residence	27	26	4	361622	4428935	333
977	Residence	25	24	4	361767	4428944	330
978	Residence	24	23	4	361914	4428985	327
979	Residence	25	25	4	361709	4428981	333
980	Residence	24	23	4	362077	4428912	330
981	Residence	24	23	4	362155	4428917	332
982	Residence	24	23	4	362219	4428903	333
983	Residence	25	24	4	362383	4427484	309
984	Residence	24	23	4	362617	4427357	310
986	Residence	24	24	4	362438	4427021	310
987	Residence	24	23	4	362553	4426949	310
989	Residence	25	24	4	361593	4425643	297
990	Cemetery	26	25	4	361352	4425656	296
991	Residence	27	26	4	361351	4425748	299
992	Residence	26	25	4	361236	4425612	293
993	Residence	26	26	4	361130	4425594	291
994	Residence	27	26	4	361031	4425605	290
995	Residence	28	27	4	361104	4425734	297
996	Residence	25	25	4	361124	4425277	293
997	Residence	25	25	4	361156	4425278	293
998	Residence	25	24	4	361183	4425281	293
999	Residence	25	24	4	361210	4425279	293
1000	Residence	25	24	4	361237	4425282	293
1001	Residence	25	24	4	361263	4425284	293
1002	Residence	25	24	4	361293	4425291	292
1003	Residence	24	24	4	361323	4425291	292
1004	Residence	24	24	4	361349	4425292	291
1005	Residence	25	25	4	361127	4425214	293
1006	Residence	25	25	4	361152	4425221	293
1007	Residence	25	24	4	361181	4425218	293
1008	Residence	25	24	4	361211	4425215	294
1009	Residence	25	24	4	361237	4425218	293

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
1010	Residence	25	24	4	361292	4425220	293
1011	Residence	24	24	4	361322	4425227	293
1012	Residence	24	23	4	361350	4425225	293
1013	Residence	24	23	4	361377	4425224	292
1014	Residence	24	23	4	361405	4425226	292
1015	Residence	24	23	4	361440	4425221	291
1016	Residence	24	23	4	361458	4425202	291
1017	Residence	24	23	4	361491	4425257	289
1018	Residence	23	23	4	361460	4425120	293
1019	Residence	24	23	4	361431	4425110	293
1020	Residence	24	23	4	361371	4425105	293
1021	Residence	24	23	4	361344	4425106	293
1022	Residence	24	23	4	361313	4425109	294
1023	Residence	24	24	4	361286	4425105	294
1024	Residence	24	24	4	361257	4425108	293
1025	Residence	24	24	4	361225	4425104	293
1026	Residence	24	24	4	361200	4425106	293
1027	Residence	25	24	4	361167	4425110	293
1028	Residence	25	24	4	361139	4425105	293
1029	Residence	25	24	4	361113	4425107	294
1030	Residence	25	24	4	361114	4425160	293
1031	Residence	25	24	4	361146	4425161	294
1032	Residence	25	24	4	361178	4425162	294
1033	Residence	25	24	4	361206	4425165	294
1034	Residence	25	24	4	361237	4425165	293
1035	Residence	24	24	4	361268	4425166	293
1036	Residence	24	24	4	361298	4425167	293
1037	Residence	24	24	4	361322	4425165	293
1038	Residence	24	23	4	361352	4425170	293
1039	Residence	24	23	4	361382	4425168	293
1040	Residence	23	23	4	361518	4425243	288
1041	Residence	25	24	4	361265	4425218	293
1042	Residence	24	24	4	361126	4425024	293
1043	Residence	25	24	4	361100	4425002	294
1044	Residence	24	24	4	361099	4424967	294
1045	Residence	24	24	4	361101	4424937	295

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
1046	Residence	24	24	4	361100	4424877	295
1047	Residence	24	23	4	361089	4424813	295
1048	Residence	23	22	4	361076	4424735	295
1049	Fire Station	22	21	4	361102	4424527	296
1050	Residence	33	33	4	361180	4428321	322
1051	Residence	32	31	4	361306	4428360	324
1052	Residence	34	34	4	361147	4428112	314
1053	Residence	34	33	4	361237	4427912	312
1054	Residence	33	32	4	361348	4427716	313
1055	Residence	37	36	4	361085	4427821	316
1056	Residence	37	36	4	361088	4427859	316
1057	Residence	37	37	4	361076	4427910	317
1058	Residence	38	37	4	361058	4427954	319
1059	Residence	38	37	4	361045	4427658	315
1060	Residence	38	38	4	361016	4427710	316
1061	Residence	38	37	4	361054	4427753	316
1062	Residence	34	34	4	361221	4427631	312
1063	Residence	36	35	4	361131	4427593	313
1064	Residence	34	33	4	361225	4427523	310
1065	Residence	34	34	4	361217	4427423	311
1066	Residence	37	37	4	361070	4427440	312
1067	Residence	37	36	4	361133	4427388	314
1068	Residence	36	35	4	361214	4427330	313
1069	Residence	38	37	4	361075	4427286	311
1070	Residence	36	35	4	361208	4427272	312
1071	Residence	33	32	4	361296	4427298	310
1072	Residence	35	34	4	361193	4427162	308
1073	Residence	36	36	4	361052	4427167	308
1074	Residence	37	36	4	361074	4427227	310
1075	Residence	36	35	4	361195	4427227	311
1076	Residence	32	31	4	361392	4427257	308
1077	Residence	32	31	4	361399	4427189	308
1078	Residence	35	34	4	361269	4427270	312
1079	Residence	31	31	4	361447	4427169	308
1080	Residence	31	30	4	361551	4427171	309
1081	Residence	30	29	4	361597	4427179	308

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
1082	Residence	29	28	4	361731	4427179	305
1083	Residence	27	26	4	362042	4427024	306
1084	Residence	27	26	4	362078	4427068	307
1085	Residence	26	25	4	362155	4426977	308
1086	Residence	26	25	4	362221	4426968	308
1087	Residence	25	24	4	362319	4426958	308
1088	Residence	34	34	4	361161	4426797	310
1089	Residence	35	34	4	361102	4426811	310
1090	Residence	35	35	4	361078	4426876	310
1091	Residence	36	36	4	361013	4426879	310
1092	Residence	37	37	4	360957	4426902	309
1093	Residence	35	34	4	361101	4426970	309
1094	Residence	38	37	4	360909	4426918	309
1095	Residence	39	38	4	360845	4426931	308
1096	Residence	39	39	4	360778	4426920	308
1097	Residence	37	37	4	360892	4426858	308
1098	Residence	36	36	4	360946	4426827	308
1099	Residence	37	36	4	360881	4426809	307
1100	Residence	36	35	4	360943	4426763	308
1101	Residence	35	35	4	360933	4426715	308
1102	Residence	36	35	4	360882	4426749	306
1103	Residence	36	36	4	360821	4426746	305
1104	Residence	38	37	4	360782	4426812	307
1105	Residence	37	36	4	360766	4426754	306
1106	Residence	38	38	4	360735	4426818	306
1107	Residence	37	37	4	360716	4426755	305
1108	Residence	38	37	4	360665	4426768	305
1109	Residence	39	38	4	360690	4426822	306
1110	Residence	39	38	4	360613	4426800	305
1111	Residence	40	39	4	360617	4426845	305
1112	Residence	41	40	4	360626	4426917	306
1113	Residence	42	42	4	360629	4426962	306
1114	Residence	42	41	4	360685	4426954	307
1115	Residence	41	40	4	360686	4426911	307
1116	Residence	34	33	4	361088	4426658	309
1117	Residence	36	36	4	360393	4426418	300

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
1118	Residence	34	33	4	360449	4426129	298
1119	Residence	32	31	4	360416	4425719	295
1120	Residence	31	31	4	360483	4425713	296
1121	Residence	31	31	4	360508	4425711	296
1122	Residence	31	31	4	360540	4425716	296
1123	Residence	31	30	4	360579	4425714	296
1124	Residence	30	29	4	360601	4425754	295
1125	Residence	29	29	4	360697	4425743	294
1126	Residence	29	28	4	360755	4425688	293
1127	Residence	28	28	4	360820	4425694	293
1128	Residence	28	28	4	360789	4425691	293
1129	Residence	30	29	4	360651	4425774	294
1130	Residence	32	32	4	361123	4426470	307
1131	Residence	31	30	4	361179	4426352	305
1132	Residence	30	30	4	361144	4426290	304
1133	Residence	29	29	4	361159	4426193	302
1134	Residence	30	30	4	361052	4426232	301
1135	Residence	30	29	4	361070	4426199	301
1136	Residence	29	28	4	361179	4426125	301
1137	Residence	29	29	4	361123	4426122	300
1138	Residence	29	28	4	361151	4426121	301
1139	Residence	29	28	4	361206	4426132	302
1140	Residence	29	28	4	361238	4426136	302
1141	Residence	29	28	4	361268	4426128	302
1142	Residence	28	28	4	361299	4426128	303
1143	Residence	29	28	4	361136	4426065	300
1144	Residence	29	28	4	361181	4426063	300
1145	Residence	29	28	4	361179	4426035	300
1146	Residence	28	28	4	361233	4426076	301
1147	Residence	28	28	4	361264	4426074	301
1148	Residence	28	27	4	361292	4426070	301
1149	Residence	28	27	4	361324	4426070	302
1150	Residence	28	28	4	361233	4426036	301
1151	Residence	28	27	4	361240	4426006	301
1152	Residence	29	28	4	361175	4426006	300
1153	Residence	28	28	4	361174	4425973	300

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
1154	Residence	28	27	4	361241	4425971	301
1155	Residence	28	27	4	361274	4426027	301
1156	Residence	28	27	4	361309	4426022	301
1157	Residence	28	27	4	361331	4426018	301
1158	Residence	28	27	4	361313	4425965	301
1159	Residence	28	27	4	361285	4425959	301
1160	Residence	27	27	4	361321	4425919	300
1161	Residence	27	26	4	361353	4425910	300
1162	Residence	27	26	4	361381	4425929	301
1163	Residence	27	27	4	361384	4425963	301
1164	Residence	27	27	4	361388	4426013	302
1165	Residence	28	27	4	361384	4426041	302
1166	Residence	28	27	4	361386	4426075	302
1167	Residence	28	27	4	361388	4426107	303
1168	Residence	28	27	4	361362	4426127	303
1169	Residence	28	28	4	361328	4426127	303
1170	Residence	28	28	4	361159	4425929	300
1171	Residence	29	28	4	361028	4425944	299
1172	Residence	28	27	4	361205	4425854	300
1173	Residence	30	29	4	360964	4426030	299
1174	Residence	30	30	4	360973	4426100	301
1175	Residence	29	28	4	360991	4425905	299
1176	Residence	28	27	4	360982	4425654	294
1177	Residence	27	27	4	361037	4425683	294
1178	Residence	28	28	4	360915	4425768	294
1179	Residence	28	27	4	360880	4425688	292
1180	Residence	30	29	4	360632	4425748	293
1181	Residence	30	30	4	360574	4425653	296
1182	Residence	30	30	4	360506	4425650	295
1183	Residence	26	25	4	361119	4425338	293
1184	Residence	23	22	4	360898	4424684	294
1185	Residence	23	22	4	359262	4424172	321
1186	Residence	26	25	4	359400	4425010	299
1187	Residence	26	26	4	359405	4425052	300
1188	Residence	28	28	4	359409	4425095	301
1189	Residence	29	29	4	359423	4425207	303

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
1190	Residence	30	30	4	359452	4425315	302
1191	Residence	29	29	4	359681	4425223	295
1192	Residence	27	26	4	359402	4424838	303
1193	Residence	27	26	4	359446	4424934	300
1194	Residence	27	26	4	359472	4424888	302
1195	Residence	27	26	4	359436	4424844	304
1196	Residence	27	26	4	359466	4424834	304
1197	Residence	27	26	4	359502	4424822	304
1198	Residence	27	26	4	359529	4424825	304
1199	Residence	27	26	4	359555	4424818	304
1200	Residence	27	26	4	359470	4424959	299
1201	Residence	27	27	4	359497	4424965	299
1202	Residence	27	27	4	359527	4424966	299
1203	Residence	27	27	4	359555	4424965	299
1204	Residence	28	27	4	359582	4424963	299
1205	Residence	27	27	4	359537	4424919	301
1206	Residence	27	27	4	359501	4424913	301
1207	Residence	27	26	4	359535	4424868	302
1208	Residence	27	26	4	359501	4424871	302
1209	Residence	27	26	4	359569	4424870	302
1210	Residence	27	26	4	359594	4424867	302
1211	Residence	27	26	4	359592	4424821	304
1212	Residence	27	26	4	359618	4424819	304
1213	Residence	27	26	4	359653	4424816	303
1214	Residence	27	26	4	359673	4424836	303
1215	Residence	27	26	4	359660	4424859	302
1216	Residence	27	27	4	359624	4424870	302
1217	Residence	27	27	4	359570	4424916	301
1218	Residence	27	27	4	359605	4424914	301
1219	Residence	27	27	4	359625	4424913	301
1220	Residence	27	27	4	359668	4424912	301
1221	Residence	27	27	4	359694	4424893	302
1222	Residence	27	27	4	359709	4424877	303
1223	Residence	27	26	4	359726	4424851	303
1224	Residence	28	27	4	359623	4424960	300
1225	Residence	28	27	4	359653	4424957	300

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
1226	Residence	28	27	4	359679	4424954	301
1227	Residence	28	27	4	359708	4424959	302
1228	Residence	28	27	4	359744	4424960	303
1229	Residence	27	27	4	359747	4424906	303
1230	Residence	27	27	4	359770	4424878	304
1231	Residence	27	27	4	359792	4424860	304
1232	Residence	27	27	4	359817	4424851	304
1233	Residence	27	27	4	359776	4424919	303
1234	Residence	28	27	4	359799	4424941	303
1235	Residence	28	27	4	359804	4424959	303
1236	Residence	28	27	4	359762	4424988	302
1237	Residence	28	27	4	359810	4424985	302
1238	Residence	28	28	4	359811	4425019	302
1239	Residence	28	28	4	359770	4425018	302
1240	Residence	28	28	4	359766	4425048	302
1241	Residence	28	28	4	359814	4425050	302
1242	Residence	27	26	4	359745	4424831	304
1243	Residence	27	26	4	359762	4424820	304
1244	Residence	27	26	4	359788	4424811	304
1245	Residence	27	26	4	359817	4424806	304
1246	Residence	27	26	4	359848	4424801	304
1247	Residence	27	27	4	359853	4424855	303
1248	Residence	27	27	4	359854	4424891	302
1249	Residence	28	27	4	359855	4424926	302
1250	Residence	28	27	4	359858	4424954	302
1251	Residence	28	27	4	359901	4424948	301
1252	Residence	27	27	4	359898	4424915	302
1253	Residence	27	27	4	359903	4424883	302
1254	Residence	27	26	4	359895	4424850	302
1255	Residence	27	26	4	359900	4424801	302
1256	Residence	27	26	4	359927	4424796	302
1257	Residence	27	26	4	359959	4424793	302
1258	Residence	27	26	4	359987	4424793	302
1259	Residence	27	26	4	359936	4424841	301
1260	Residence	27	27	4	359938	4424876	301
1261	Residence	27	27	4	359940	4424904	301

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
1262	Residence	28	27	4	359947	4424938	301
1263	Residence	27	27	4	359995	4424903	301
1264	Residence	27	27	4	359992	4424876	301
1265	Residence	27	26	4	359989	4424849	301
1266	Residence	27	27	4	360000	4424932	300
1267	Residence	28	27	4	359995	4424970	300
1268	Residence	28	27	4	359949	4424997	300
1269	Residence	28	27	4	359945	4424966	300
1270	Residence	28	27	4	359900	4424980	301
1271	Residence	28	28	4	359902	4425012	300
1272	Residence	28	28	4	359860	4425015	301
1273	Residence	28	27	4	359859	4424983	302
1274	Residence	29	28	4	359770	4425080	301
1275	Residence	29	28	4	359773	4425110	300
1276	Residence	29	28	4	359817	4425082	301
1277	Residence	29	28	4	359796	4425132	298
1278	Residence	29	28	4	359829	4425130	299
1279	Residence	29	28	4	359860	4425128	298
1280	Residence	29	28	4	359863	4425072	300
1281	Residence	28	28	4	359863	4425046	300
1282	Residence	28	28	4	359907	4425045	299
1283	Residence	28	28	4	359910	4425073	299
1284	Residence	28	28	4	359950	4425028	299
1285	Residence	28	28	4	359948	4425060	298
1286	Residence	28	28	4	359951	4425084	297
1287	Residence	28	28	4	359999	4425083	296
1288	Residence	28	28	4	360002	4425053	297
1289	Residence	28	27	4	359995	4425023	298
1290	Residence	28	27	4	359993	4424997	299
1291	Residence	28	27	4	359995	4424970	300
1292	Residence	28	27	4	360035	4424993	299
1293	Residence	28	27	4	360042	4425023	298
1294	Residence	28	28	4	360042	4425054	296
1295	Residence	28	28	4	360044	4425085	296
1296	Residence	28	28	4	360045	4425120	295
1297	Residence	29	28	4	360003	4425124	295

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
1298	Residence	29	28	4	359884	4425127	298
1299	Residence	29	28	4	359921	4425130	297
1300	Residence	29	28	4	359961	4425161	295
1301	Residence	28	28	4	359984	4425174	294
1302	Residence	29	28	4	360016	4425171	294
1303	Residence	28	28	4	360097	4425171	294
1304	Residence	29	28	4	360124	4425168	295
1305	Residence	29	28	4	360149	4425171	295
1306	Residence	29	28	4	360168	4425155	296
1307	Residence	29	28	4	360169	4425128	296
1308	Residence	28	28	4	360145	4425109	296
1309	Residence	29	28	4	360121	4425113	296
1310	Residence	28	28	4	360094	4425117	295
1311	Residence	28	28	4	360095	4425080	295
1312	Residence	28	28	4	360042	4425171	294
1313	Residence	24	23	4	361839	4429075	332
1314	Residence	28	28	4	360085	4425045	296
1315	Residence	28	27	4	360115	4425034	297
1316	Residence	28	27	4	360138	4425036	297
1317	Residence	28	27	4	360171	4425032	297
1318	Residence	28	27	4	360168	4424986	299
1319	Residence	28	27	4	360140	4424984	299
1320	Residence	28	27	4	360113	4424988	299
1321	Residence	28	27	4	360088	4424988	300
1322	Residence	27	27	4	360083	4424939	301
1323	Residence	27	27	4	360126	4424945	301
1324	Residence	27	27	4	360159	4424921	302
1325	Residence	27	26	4	360156	4424886	302
1326	Residence	27	26	4	360121	4424875	302
1327	Residence	27	27	4	360083	4424887	302
1328	Residence	27	26	4	360087	4424830	302
1329	Residence	27	26	4	360122	4424840	302
1330	Residence	26	26	4	360142	4424786	302
1331	Residence	27	26	4	360144	4424820	302
1332	Residence	27	26	4	360035	4424840	301
1333	Residence	27	26	4	360033	4424872	301

Receiver ID	Receiver Type	Sound Pressure Level (dBA)		Relative Height (m)	Coordinates (UTM NAD83 Z17N)		
		Daytime	Nighttime		X (m)	Y (m)	Z (m)
1334	Residence	27	27	4	360033	4424900	301
1335	Residence	27	27	4	360036	4424925	301
1336	Residence	28	27	4	360037	4424959	300
1337	Residence	26	26	4	360104	4424777	302
1338	Residence	26	26	4	360077	4424786	302
1339	Residence	27	26	4	360049	4424788	303
1340	Residence	27	26	4	360019	4424789	302
1343	Commercial	28	27	4	357791	4426916	301



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Case No(s). 20-1757-EL-BGN

Summary: Application Exhibit N - Noise Assessment electronically filed by Teresa Orahod on behalf of Dylan F. Borchers