Appendix E

Noise Modeling for the Pleasant Valley Repower Project

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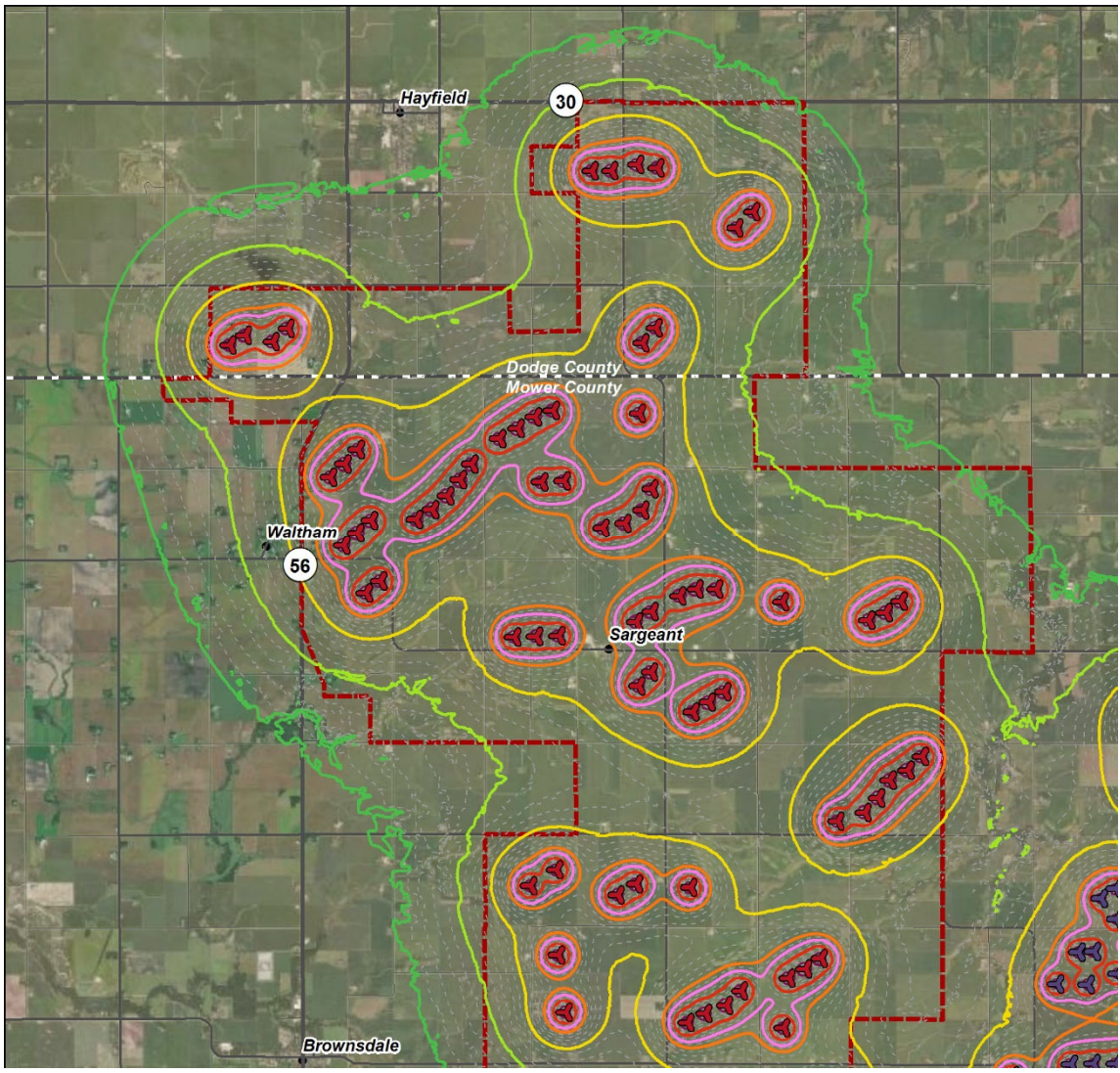
PLEASANT VALLEY REPOWER NOISE ASSESSMENT



April 2022

Xcel Energy

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Report Title:

Pleasant Valley Repower Noise Assessment

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1.0 INTRODUCTION

Xcel Energy (“Xcel”) operates the Pleasant Valley Wind Farm in Mower and Dodge Counties, Minnesota. They are submitting a Site Permit Amendment Application (“SPA”) to the Minnesota Public Utilities Commission (“PUC”) to repower the wind farm. Repowering the Pleasant Valley Wind Farm (“Project”) will involve replacing all 100 existing Vestas V100 2.0 MW turbines with Vestas V110 2.2 MW turbines. The current hub height of 95 meters (312 feet) will be maintained; the existing turbine tower and foundation will remain the same.

For the SPA, RSG conducted this noise assessment of the Project. Included in this report are:

- A description of the Project;
- A discussion of applicable sound level standards;
- A discussion of background sound levels;
- Sound propagation modeling procedures and results; and
- Conclusions.

Appendix A includes a primer on the science of sound, including descriptions of some of the acoustical terms used in this report, and Appendix B includes a discussion of sound issues that are particular to wind farms.

2.0 PROJECT DESCRIPTION

The Pleasant Valley Wind Farm is located in Mower and Dodge Counties, Minnesota. The project is generally bounded by State Route 30 to the north, State Route 56 to the west, Interstate 90 to the south and County Route 7 to the east. The City of Austin is approximately 13.5 kilometers (8 miles) to the southwest of the Project boundary. The City of Hayfield is 3 kilometers (2 miles) to the west of the northern extent of the Project. The area around the Project is composed primarily of agricultural land uses with rural and farm residences spread throughout the area. The terrain is mostly flat.

The Project is currently composed of 100 Vestas V100-2.0 MW wind turbines with a hub height of 95 meters (312 feet). Repowering them will involve upgrading to Vestas V110-2.2 MW models with STE[1] blades. The repower will be achieved by installing rotors with longer blades and replacing components of existing hubs for 86 turbines and replacing the entire hubs for 14 turbines.

The project turbines are not the only wind turbines in the area. Wapsipinicon Wind, which is composed of 67 GE 1.5 MW wind turbines, is located southeast of the Project area but north of I-90. On the other side of I-90, south of Wapsipinicon Wind and east of Pleasant Valley Wind, is the Grand Meadow Wind Farm, which is composed of 67 GE 1.5 MW turbines and will be repowered to GE 1.6-91 LNTE and GE 1.6-97 LNTE turbines.

In addition to the Pleasant Valley Wind Farm, the analysis presented in this report considers sound emissions from wind turbines from other area wind projects within 3.2 kilometers (2 miles) of the Pleasant Valley Wind Farm.

A map of the Project area, Project Turbines, and some of the surrounding wind power developments is provided in Figure 1. All residences within 3.2 km (2 miles) of Project turbines are included in the sound propagation model.

[1] Serrated Trailing Edges (STE) on wind turbine blades result in lower overall sound levels than standard blades. Some other manufacturers refer to them as Low Noise Trailing Edge or LNTE.

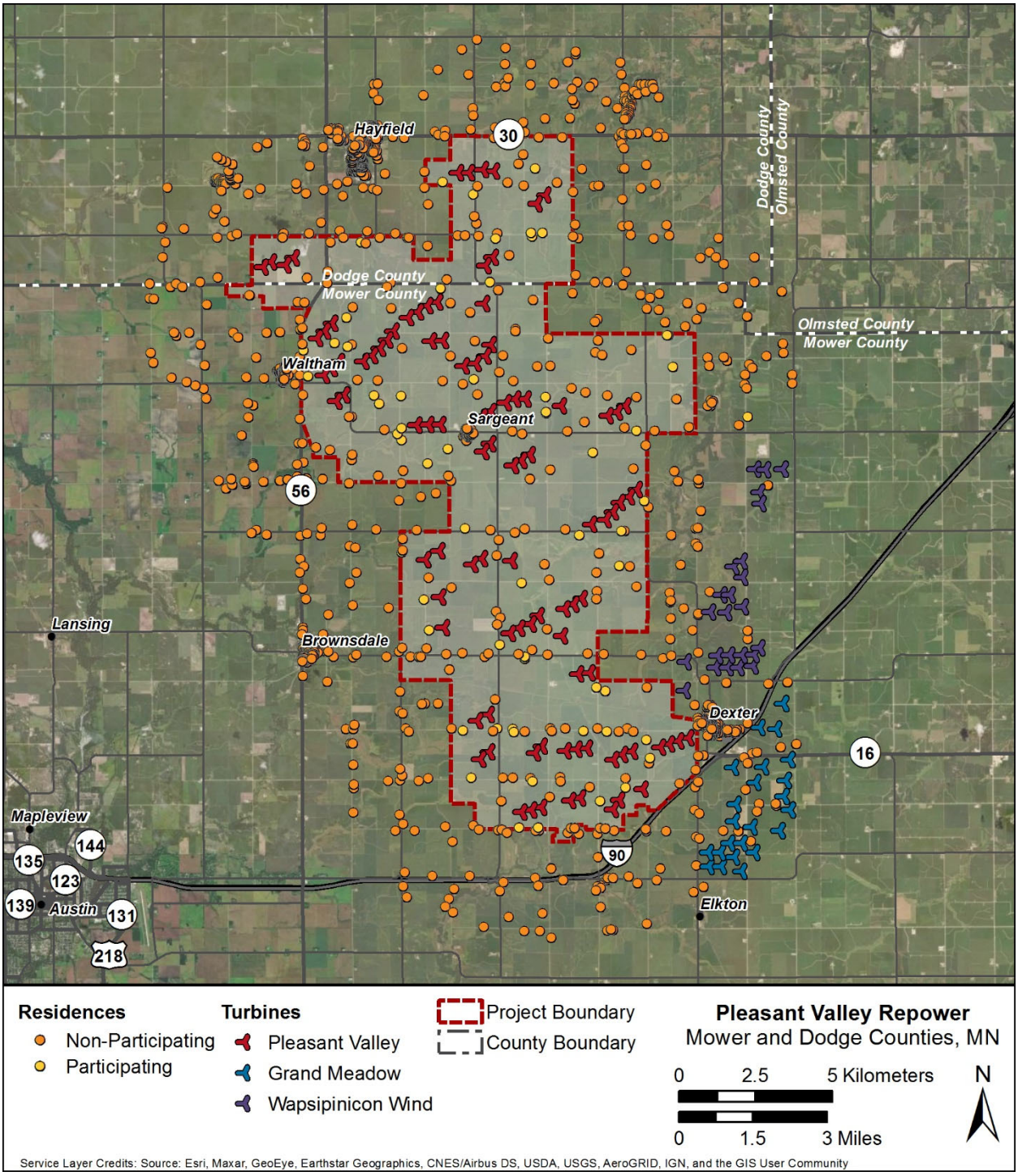

FIGURE 1 PROJECT AREA MAP

3.0 SOUND LEVEL STANDARD & GUIDELINES

3.1 LOCAL STANDARDS

Both Mower and Dodge Counties refer to statewide noise rules defined by the Minnesota Pollution Control Agency in Minnesota Rules Chapter 7030 (see Section 3.2). There are no additional noise limits or requirements in Section 14-18.5, *Special Requirements for Wind Energy Conversion System,* of the Mower County Zoning Ordinance or in Section 17-19.6, *Noise*, of the Dodge County Zoning Ordinance.

3.2 STATE STANDARDS

Minnesota Statute §116.07 charges the Pollution Control Agency with adopting noise standards. These standards are set in Minnesota Rules Chapter 7030, and a wind power project must demonstrate compliance with the standards to receive a site permit from the PUC. The rule provides daytime and nighttime[2] sound level limits (Table 1) for a variety of land uses, which are grouped into three categories identified by a Noise Area Classification ("NAC"). The sensitive land uses around the Project are primarily within NAC 1 which includes residences (including farmhouses) and contains the most restrictive sound limits.

TABLE 1: SOUND LEVEL LIMITS (dBA) FROM MN RULES 7030.0040

NOISE AREA CLASSIFICATION	DAYTIME		NIGHTTIME	
	L_{50}	L_{10}	L_{50}	L_{10}
1	60	65	50	55
2	65	70	65	70
3	75	80	75	80

The Rule says that the limits are for the "…preservation of public health and welfare" and that they are "…consistent with speech, sleep, annoyance, and hearing conservation requirements…", but that they "…do not, by themselves, identify the limiting levels of impulsive noise[3] needed for the preservation of public health and welfare."

[2] MN Rules 7030.0020 define daytime as 7:00 a.m. to 10:00 p.m. and nighttime as 10:00 p.m. to 7:00 a.m.
[3] Impulsive noise is defined in Minnesota Rules Chapter 7030.0020. Typical wind turbine sound at the distance of a residential receiver is not considered impulsive.

4.0 BACKGROUND SOUND LEVELS

Given the extent of existing operational wind farms in the area, background sound levels without existing wind turbine sounds can be challenging to measure, particularly on a long-term basis. The background level sound levels were reported and collected in the post-construction noise assessment[4] for the original Pleasant Valley Wind Farm Project. Since the 2016 assessment, the Pleasant Valley Wind Farm project location, land uses, and roadways have not changed, so this was the most appropriate and recent background sound levels to use. The original Pleasant Valley post-construction assessment was measured in accordance with the guidance[5] by the Minnesota Department of Commerce that was applicable at the time of the monitoring.

As shown in the post-construction noise assessment[4], the hourly L_{50} at night was as low as 20 dBA and as high as 45 dBA. The hourly L_{50} was generally higher during the daytime with one hour as high as 51 dBA.

[4] Docket #IP-6828/WS-09-1197, Pleasant Valley Wind Farm, Post-Construction Noise Assessment, DNV-GL, August 24, 2016.
[5] "Guidance for Large Wind Energy Conversion System Noise Study Protocol and Report," October 2012.

5.0 SOUND PROPAGATION MODELING

5.1 MODELING PROCEDURE

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 assumes downwind sound propagation between every source and every receiver, consequently, all wind directions, including the prevailing wind directions, are taken into account.

Model input parameters are listed in Appendix C including the modeled sound power spectra for each turbine model. For this analysis, we utilized: a ground absorption factor of G=0.7, and a 2-dB uncertainty factor to the turbine sound power level to account for uncertainty.[6] In conjunction with a 4-meter receptor height, these modeling parameters are appropriate for comparing modeled results to the L_{50} metric used in the State standard, particularly when summing model results with the background L_{50}.[7] A search distance up to 10,000 meters (6.2 miles) allows for the contributions of distant turbines to be considered at receivers. The contribution of distant wind turbines will depend on the geometry and geography of the Project and are part of the reported turbine-only sound level.

[6] Kaliski, et. al., Regulating and predicting wind turbine sound in the U.S., Inter-Noise 2018.
[7] Generally accepted wind turbine modeling procedure calls for a ground absorption factor of G = 0.5, with a 2 dB uncertainty factor added to the manufacturer's guaranteed levels, to predict a maximum L_{eq1h}. In this case, the Minnesota state limit utilizes an L_{50} metric instead of maximum $L_{eq1h,}$ which means a ground factor of G=0.7 can be used. Based on data from the Massachusetts Study on Wind Turbine Acoustics (2016) by Mass CEC, the L_{50} from wind turbines is typically 0.7 to 1.0 dB lower than the L_{eq}. Using a ground factor of G=0.7 instead of 0.5 lowers the sound level projection of the model by 0.7 dB, on average, and as such serves as an adjustment factor to shift from an L_{eq}-based model to and L_{50} -based model to adhere to the Minnesota L_{50} noise standard.

Residences were modeled as discrete receivers at a height of 4 meters (13 feet) above ground level.[8] A total of 1,576 residences were modeled throughout the Project area. The grid, represented in the results maps by sound pressure level contours, is also calculated at a height of 4 meters (13 feet). Use of a 4-meter receiver height in the model results in a conservative calculation of the expected wind turbine sound levels at 1.5 meters (5 feet), which may be used for post-construction compliance monitoring. Modeling at a height of 4 meters is supported[6] by post-construction monitoring at a number of wind projects, and by the Institute of Acoustics' Good Practice Guide on Wind Turbine Noise (2013), "as it has the effect of reducing the potential oversensitivity of the calculation to the receiver region ground factor compared to lower receiver heights." The sound pressure level contours represent turbine-only sound levels.

5.2 MODELED SCENARIOS

Two scenarios were modeled:

- Scenario 1: Existing turbines at Pleasant Valley, and existing turbines at other area wind projects within 3.2 kilometers (2 miles) of Pleasant Valley.
- Scenario 2: Repower Pleasant Valley turbines, Repower Grand Meadow turbines, and existing turbines at other area wind projects within 3.2 kilometers (2 miles)

For Scenario 2, the repowered Pleasant Valley turbines consist of one hundred (100) Vestas V110 2.2 STE models. All repowered wind turbines are proposed to be equipped with serrated trailing edges (STE) on the blades. The repowered Grand Meadow turbines are GE 1.6-91 LNTE and GE 1.6-97 LNTE turbines with varying levels of Noise Reduced Operations ("NRO"). The specific turbine type and overall sound power level for each turbine is provided in Appendix C. Sound level contributions from other area wind turbines are included in the turbine-only sound levels calculated in the model.

[8] Some other site permit applications (PUC Docket Nos. 17-307, 18-179, and 19-394, for example) have used receiver heights of 1.5 meters as opposed to 4 meters. However, using a receiver height of 4 meters is more conservative and results in a projected sound level that is 1.6 dB higher, on average than the results modeled at a height of 1.5 meters.

5.3 MODEL RESULTS

For each scenario, results from the sound propagation model are given for both a turbine-only condition, shown in Table 2, and a total sound condition that includes turbine and background sound levels, shown in Table 3. For the latter, a worst-case nighttime condition is calculated by summing (logarithmically)[9] the modeled turbine-only sound levels with the highest measured nighttime background sound level (one-hour L_{50}) of 45 dBA. The worst-case nighttime sound levels for each scenario are shown in Figure 3 while illustrating the Project contribution to the background sound levels. Only nighttime median sound levels are considered because they are the most stringent; if turbine-only levels are below the nighttime total sound level, the daytime L_{50} and L_{10} limits will not be broached.

TABLE 2: TURBINE-ONLY MODEL RESULTS SUMMARY (dBA)

SCENARIO		STATISTICAL L_{50} METRIC[10]	RESIDENCE CLASSIFICATION		
			ALL RESIDENCES	PARTICIPATING	NON-PARTICIPATING
1	Existing	Min	13	28	13
		Mean	30	39	30
		Max	49	45	49
2	Repower	Min	16	30	16
		Mean	32	42	32
		Max	47	47	47

TABLE 3: TOTAL SOUND LEVEL RESULTS SUMMARY (dBA)

SCENARIO		BACK-GROUND SOUND LEVEL	STATISTICAL L_{50} METRIC[10]	RESIDENCE CLASSIFICATION		
				ALL RESIDENCES	PARTICIPATING	NON-PARTICIPATING
1	Existing	45 dBA	Min	45	45	45
			Mean	45	46	45
			Max	50	48	50
2	Repower	45 dBA	Min	45	45	45
			Mean	45	47	45
			Max	49	49	49

Under the existing scenario (Scenario 1), the highest modeled turbine-only sound level (L_{50}) at a non-participating residence is 49 dBA, and the average across all non-participating residences

[9] $L_{p1,2} = 10 \times \log_{10}\left(10^{L_{p1}/10} + 10^{L_{p2}/10}\right)$

[10] The average L_{50} across all residences is provided as a simple means of comparing the overall potential impact across the project area between the different scenarios. The maximum L_{50} represents the worst-case receptors. The minimum L_{50} represents the receptor with the least projected wind turbine sound.

is 30 dBA. At participating residences, the highest modeled turbine only sound level under Scenario 1 is 45 dBA.

Under the repower scenario (Scenario 2), the highest modeled turbine-only sound level (L_{50}) at a non-participating residence is 47 dBA, and the average across all non-participating residences is 32 dBA. The highest modeled non-participating residence at 47 dBA is at Receptor 1144. At participating residences, the highest modeled turbine only sound level under Scenario 2 is also 47 dBA.

Results for each residence are provided in Appendix D. As can be seen in Appendix D, most receptors are projected to see an increase of 1 to 3 dB in turbine-only sound level due to the repower, with an average increase of 2.5 dB. The average increase in sound level for receptors above 40 dBA was 1.5 dB and the average increase for receptors below 40 dBA was 2.8 dBA. The highest increase for receptors with a Repower turbine-only sound level above 40 dBA is 2.6 dB at Receptor 928 (38.1 dBA to 40.7 dBA), which is a participating residence.

Background sound levels can vary from hour to hour, and they can vary by location. Hourly nighttime background sound levels (L_{50}) in the Project area are expected to be 45 dBA or less in most locations but may be higher near I-90. Appendix D provides the model results summed with a range of potential background L_{50} values from 30 to 45 dBA in 5 dB increments. Table 2 shows the results of the modeled turbine-only sound levels with a nighttime background sound level (one-hour L_{50}) of 45 dBA. Using this ambient nighttime background noise level, which could be considered worst-case through much of the Project area, the sound level limits would not be exceeded at any participating or non-participating residence. It is possible for the background L_{50} to be greater than 45 dBA, but the Project has been modeled such that no receptors exceed a turbine-only sound level of 47 dBA, per Department of Commerce guidance[11] that states:

If background sound levels are equal to or greater than the applicable state standard at nearby receptors, the wind farm should not contribute more than 47 dB(A) to total sound levels at nearby receptors. Therefore, for example, when nighttime background sound levels are at 50 dB(A), a maximum turbine-only contribution of 47 dB(A) would result in a non-significant increase in total sound of 3 dB(A).

5.4 MAPPED MODEL RESULTS

Maps of model results for each scenario are provided in Figure 2 and Figure 3. Results are presented as contour lines representing 5-dB increments of calculated A-weighted turbine-only sound pressure levels. The pink contour line, however, does not represent a 5-dB increment; it denotes 47 dBA.

[11] "Application Guidance for Site Permitting of Large Wind Energy Conversion Systems in Minnesota," July 2019, MN Department of Commerce.

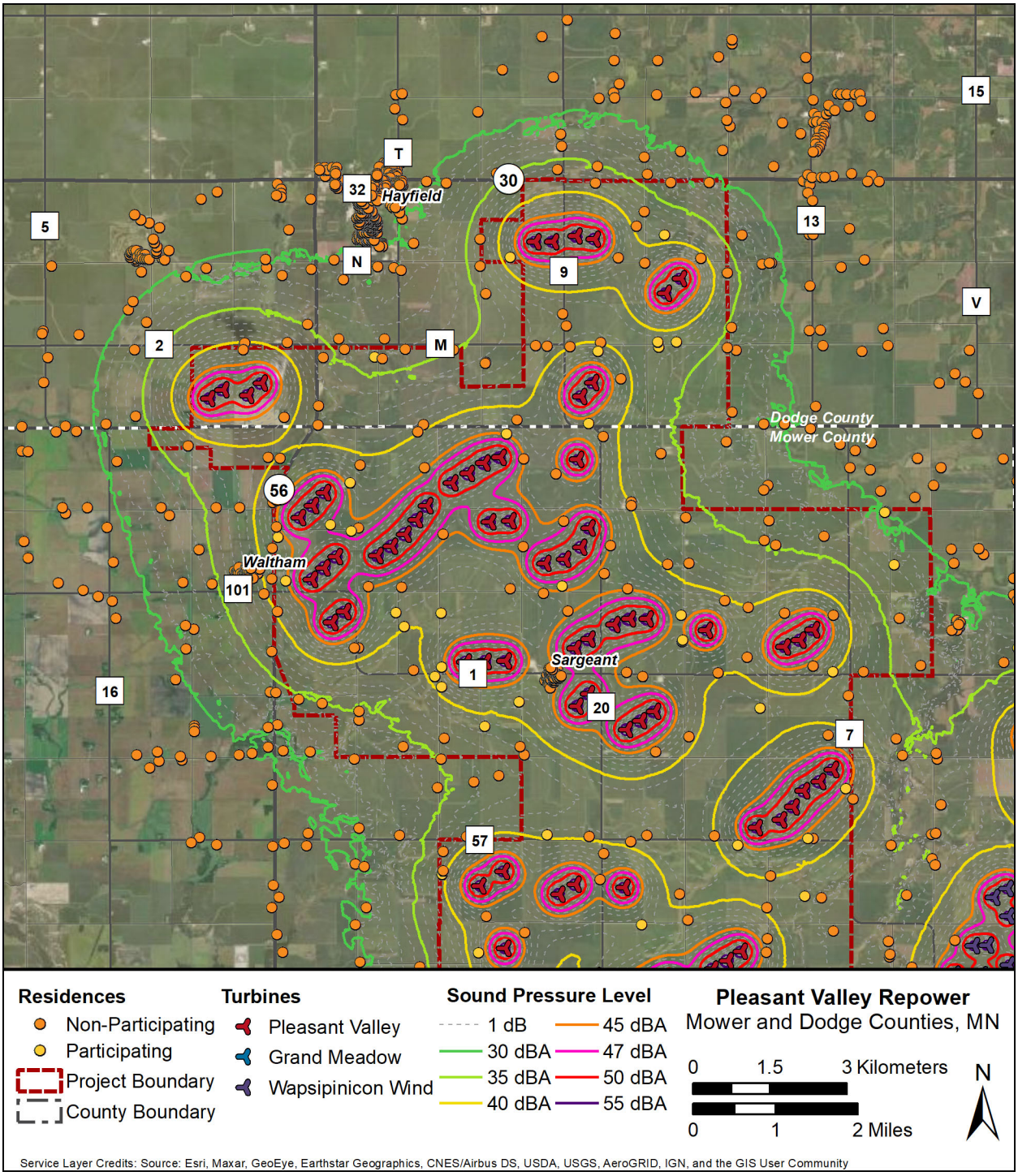

FIGURE 2 MAP OF SOUND PROPAGATION MODEL RESULTS (NORTH)

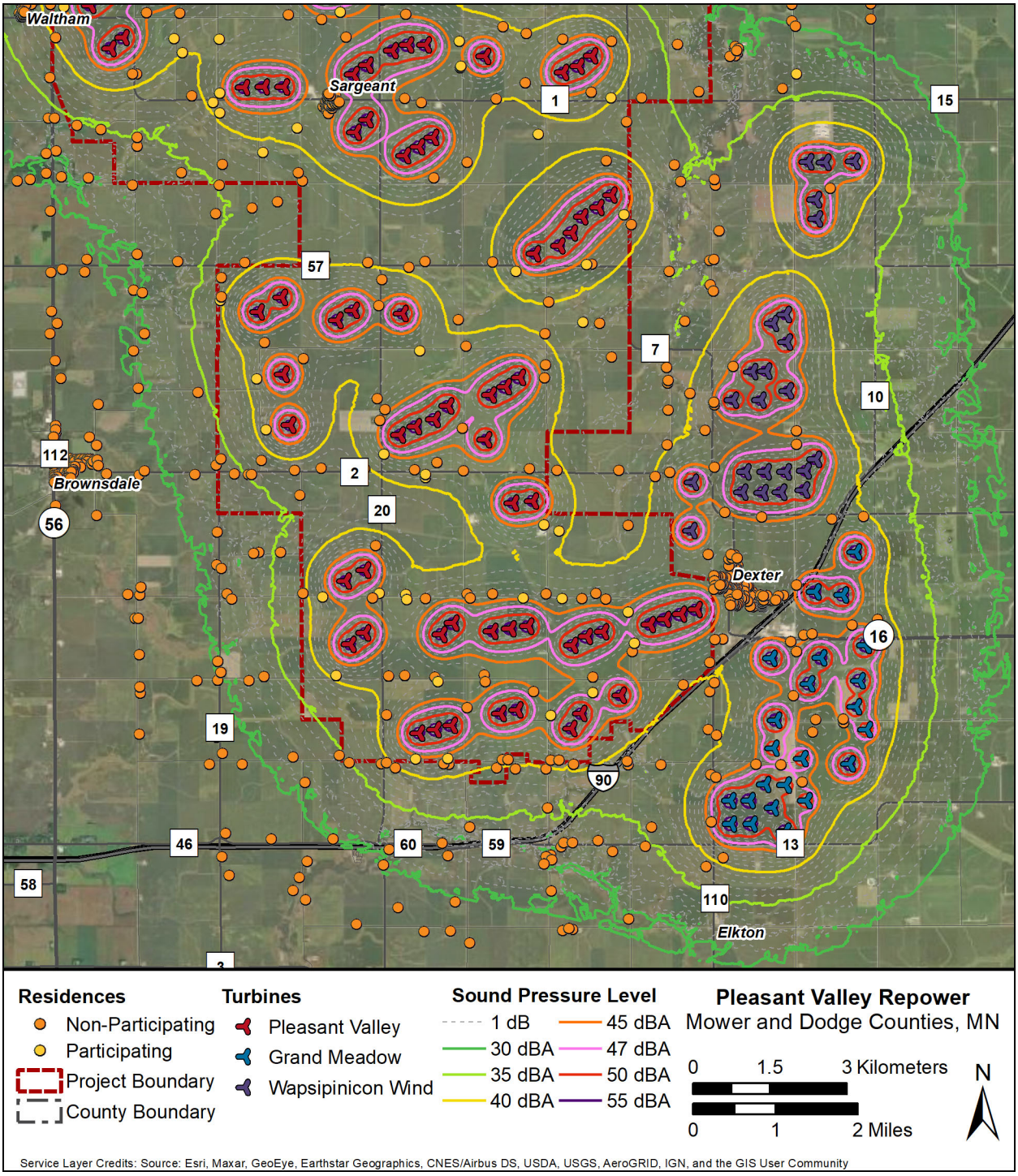

FIGURE 3 MAP OF SOUND PROPAGATION MODEL RESULTS (SOUTH)

6.0 CONCLUSIONS

Xcel is proposing to repower the Pleasant Valley Wind Farm by upgrading 100 Vestas V100 2.0 MW turbines to Vestas V110 2.2 MW turbines. The hub and blades of these turbines would be upgraded and/or replaced, leaving the current towers in place. All repowered turbines would have STE blades. For the SPA, RSG performed a noise assessment of the Project including sound emissions from neighboring wind power projects so that cumulative noise impacts could be assessed. The noise assessment included two scenarios:

- Scenario 1: Existing turbines at Grand Meadow, and existing turbines at other area wind projects within 3.2 kilometers (2 miles) of Pleasant Valley
- Scenario 2: Repower Pleasant Valley, Repower Grand Meadow turbines, and existing turbines at other area wind projects within 3.2 kilometers (2 miles) of Pleasant Valley.

Background sound levels measured in 2016 for the post-construction noise assessment for Pleasant Valley Wind Farm are discussed in Section 4.0 to provide context to the expected background sound levels in the Project vicinity.

Conclusions of the assessment are as follows:

1. Background sound levels were assessed within the Project area during the Project's 2016[4] post-construction noise assessment. Hourly median sound levels at night were between 20 and 45 dBA; daytime hourly median sound levels were as high as 51 dBA. Background sound levels near I-90 in the Project area may be higher.
2. State noise regulations require that wind power generation facilities show compliance with a nighttime limit of 50 dBA (L_{50}) and a daytime limit of 60 dBA (L_{50}) at residences, but guidance from the Department of Commerce recommends that turbine-only sound levels not exceed 47 dBA.[11]
3. Sound propagation modeling was performed in accordance with ISO 9613-2 at 272 discrete receivers modeled at a height of 4 meters above grade, with spectral ground attenuation, a ground factor of G=0.7, and 2 dB uncertainty factor added to the wind turbine sound power. As discussed in Section 5.1, these modeling parameters represent the highest hourly L_{50} of the proposed facility.
4. Projected turbine-only sound levels from the repowered Project are projected to be an average of 2.5 dB higher than the existing Project.
5. Given that the projected turbine-only sound levels from the Project are 47 dBA or less, the Project is not expected to exceed the noise regulations on a turbine-only basis, nor significantly contribute[11] to sound levels in excess of the sound level limit of 50 dBA L_{50}.

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").[12] 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 4.

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.

[12] 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.

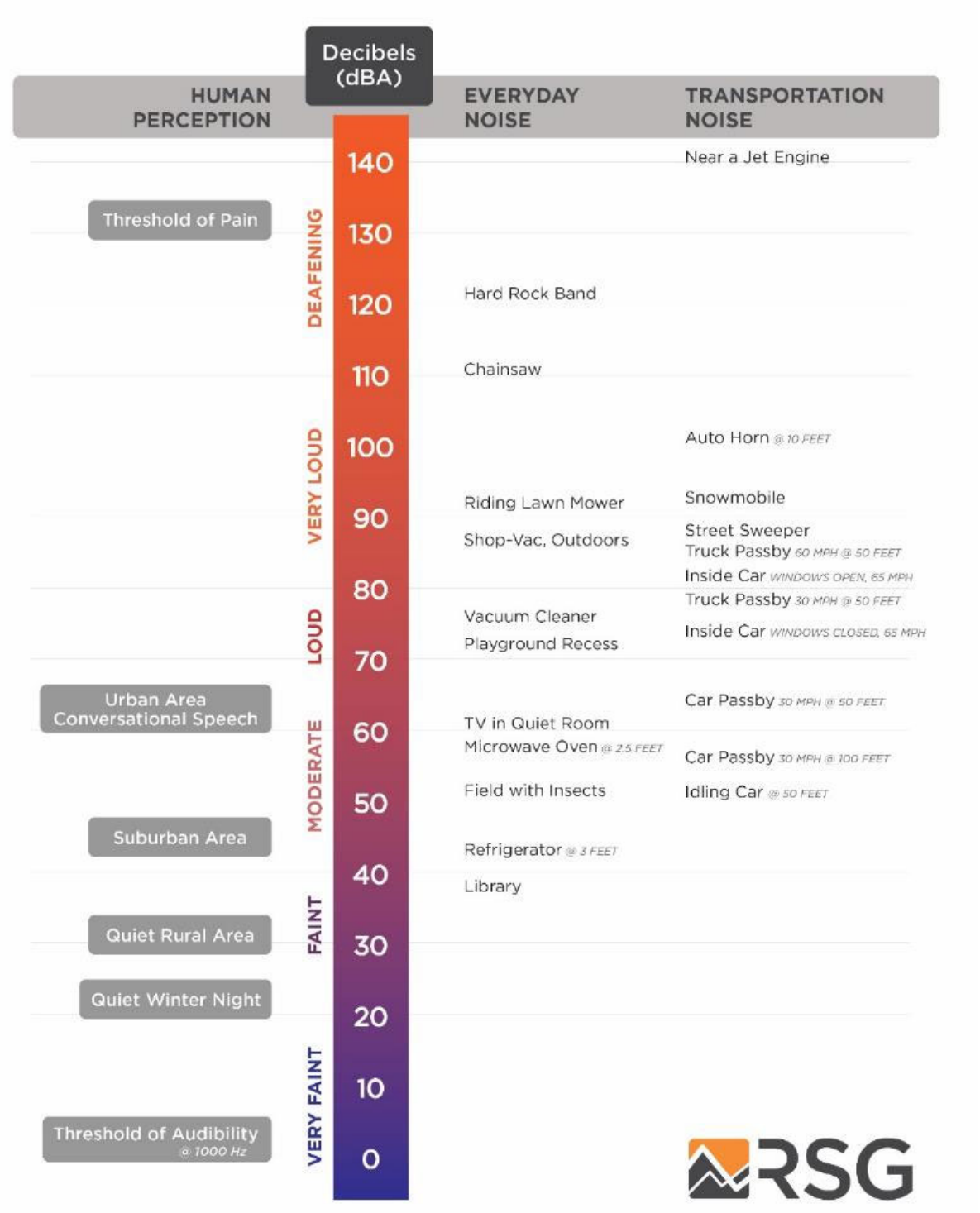

FIGURE 4: A SCALE OF SOUND PRESSURE LEVELS FOR TYPICAL SOUND SOURCES

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. G-weighting is a standardized weighting used to evaluate infrasound.

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.[13] 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 $L_{eq\text{-}max}$.

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 5. 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 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.

[13] 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.

Equivalent Continuous Sound Level - Leq

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 5, 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.

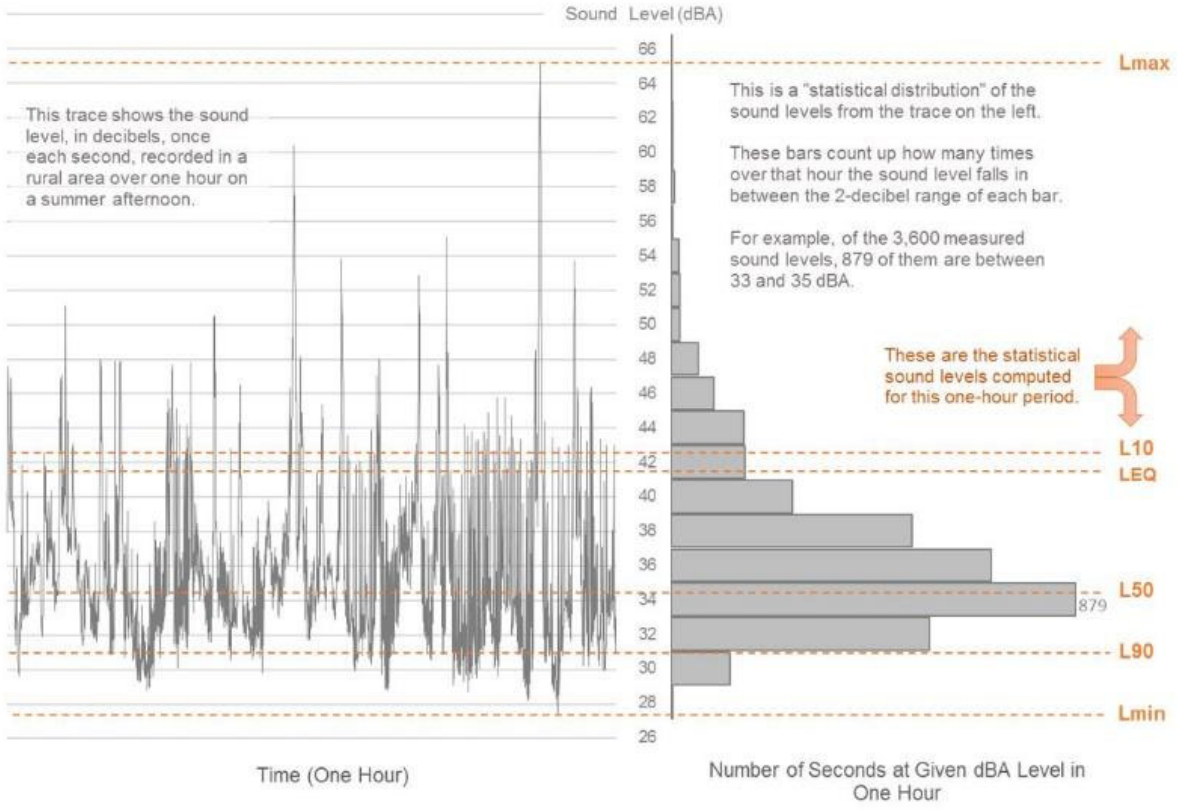

FIGURE 5: EXAMPLE OF DESCRIPTIVE TERMS OF SOUND MEASUREMENT OVER TIME

Percentile Sound Levels – Ln

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. (the "median level") is exceeded 50% of the time: half of the time the sound is louder than , and

half the time it is quieter than . Note that (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. WIND TURBINE ACOUSTICS – SPECIAL CONSIDERATIONS

Sources of Sound Generation by Wind Turbines

Wind turbines generate two principal types of sound: aerodynamic, produced from the flow of air around the blades, and mechanical, produced from mechanical and electrical components within the nacelle.

Aerodynamic sound is the primary source of sound associated with wind turbines. These acoustic emissions can be either tonal or broadband. Tonal sound occurs at discrete frequencies, whereas broadband sound is distributed with little peaking across the frequency spectrum. While unusual, tonal sound can also originate from unstable air flows over holes, slits, or blunt trailing edges on blades. The majority of audible aerodynamic sound from wind turbines is broadband at the middle frequencies, roughly between 200 Hz and 1,000 Hz.

Wind turbines emit aerodynamic broadband sound as the rotating blades interact with atmospheric turbulence and as air flows along their surfaces. This produces a characteristic “whooshing” sound through several mechanisms (Figure 6):

- Inflow turbulence sound occurs when the rotor blades encounter atmospheric turbulence as they pass through the air. Uneven pressure on a rotor blade causes variations in the local angle of attack, which affects the lift and drag forces, causing aerodynamic loading fluctuations. This generates sound that varies across a wide range of frequencies but is most significant at frequencies below 500 Hz.
- Trailing edge sound is produced as boundary-layer turbulence as the air passes into the wake, or trailing edge, of the blade. This sound is distributed across a wide frequency range but is most notable at high frequencies between 700 Hz and 2 kHz.
- Tip vortex sound occurs when tip turbulence interacts with the surface of the blade tip. While this is audible near the turbine, it tends to be a small component of the overall sound further away.
- Stall or separation sound occurs due to the interaction of turbulence with the blade surface.

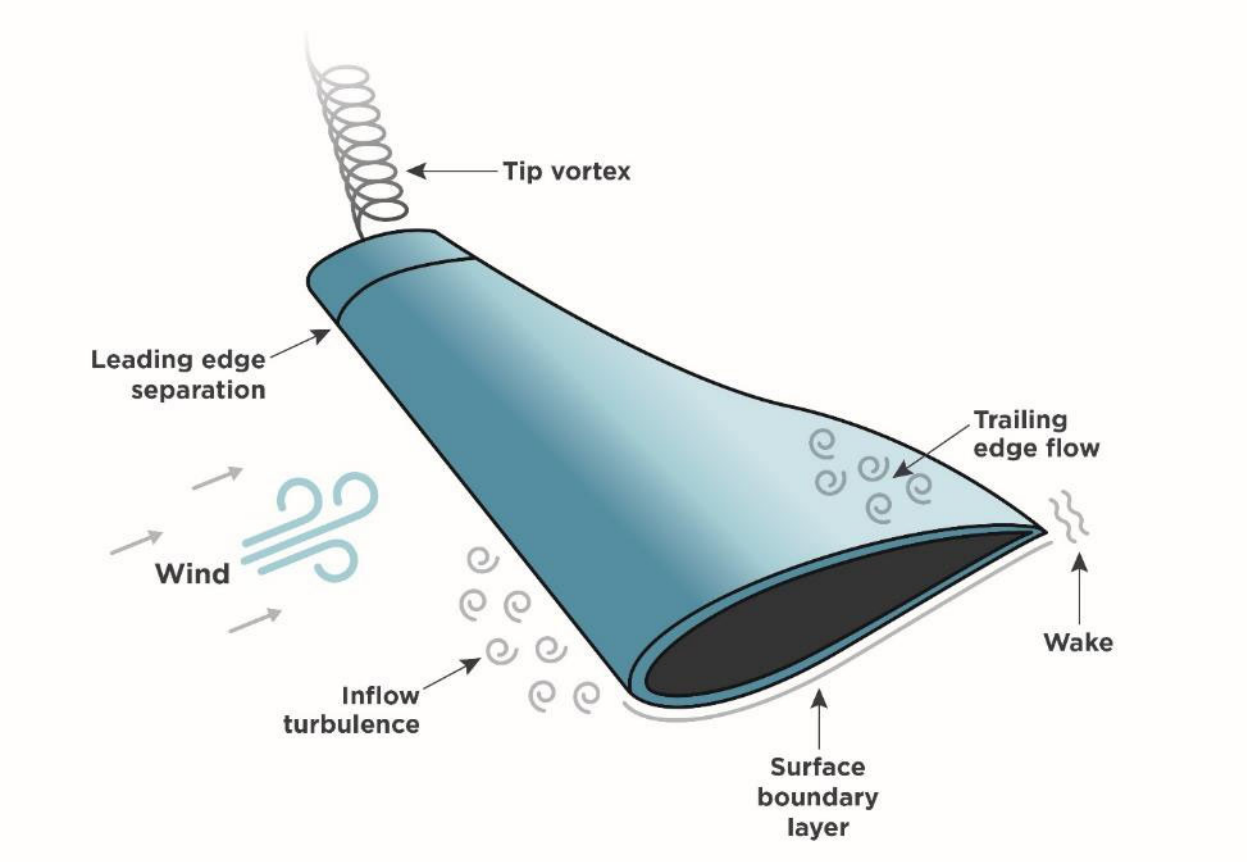

FIGURE 6: AIRFLOW AROUND A ROTOR BLADE

Mechanical sound from machinery inside the nacelle tends to be tonal in nature but can also have a broadband component. Potential sources of mechanical sound include the gearbox, generator, yaw drives, cooling fans, and auxiliary equipment. These components are housed within the nacelle, whose surfaces, if untreated, radiate the resulting sound. However modern wind turbines have nacelles that are designed to reduce the transmission of internal sound, and rarely is this a significant portion of the total wind turbine sound.

Amplitude Modulation

Amplitude modulation (AM) is a fluctuation in sound level that occurs at the blade passage frequency. There is no consistent definition how much of a sound level fluctuation is necessary for blade swish to be considered AM. Fluctuations in individual 1/3 octave bands are typically greater. Fluctuations in individual 1/3 octave bands can sometimes synchronize and desynchronize over periods, leading to increases and decreases in magnitude of the A-weighted fluctuations. Similarly, in wind farms with multiple turbines, fluctuations can synchronize and desynchronize, leading to variations in amplitude modulation depth.[14] Most

[14] McCunney, Robert, et al. “Wind Turbines and Health: A Critical Review of the Scientific Literature.” *Journal of Occupational and Environmental Medicine.* 56(11) November 2014: pp. e108-e130.

amplitude modulation is in the mid-frequencies and most overall A-weighted AM is less than 4.5 dB in depth.[15]

There are many confirmed and hypothesized causes of amplitude modulation including: blade passage in front of the tower, blade tip sound emission directivity, wind shear, inflow turbulence, transient blade stall, and turbine blade yaw error. It has recently been noted that although wind shear can contribute to the extent of amplitude modulation, wind shear does not contribute to the existence of amplitude modulation in and of itself. Instead, there needs to be detachment of airflow from the blades for wind shear to contribute to amplitude modulation.[16] While factors like the blade passing in front of the tower are intrinsic to wind turbine design, other factors vary with turbine design, local meteorology, topography, and turbine layout. Mountainous areas, for example, are more likely to have turbulent airflow, less likely to have high wind shear, and less likely to have turbine layouts that allow for blade passage synchronization for multiple turbines. Amplitude modulation extent varies with the relative location of a receptor to the turbine. Amplitude Modulation is usually experienced most when the receptor is between 45 and 60 degrees from the downwind or upwind position and is experienced least directly with the receptor directly upwind or downwind of the turbines.

Meteorology

Meteorological conditions can significantly affect sound propagation. The two most important conditions to consider are wind shear and temperature lapse. Wind shear is the difference in wind speeds by elevation and temperature lapse rate is the temperature gradient by elevation. In conditions with high wind shear (large wind speed gradient), sound levels upwind from the source tend to decrease and sound levels downwind tend to increase due to the refraction, or bending, of the sound (Figure 7).

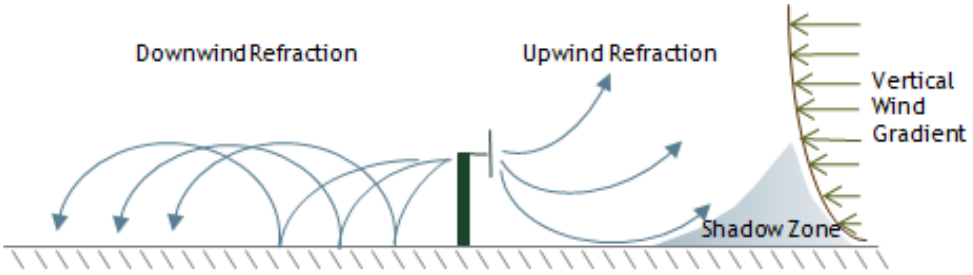

FIGURE 7: SCHEMATIC OF THE REFRACTION OF SOUND DUE TO VERTICAL WIND GRADIENT (WIND SHEAR)

With temperature lapse, when ground surface temperatures are higher than those aloft, sound will tend to refract upwards, leading to lower sound levels near the ground. The opposite is true when ground temperatures are lower than those aloft (an inversion condition).

[15] RSG, et al., "Massachusetts Study on Wind Turbine Acoustics," Massachusetts Clean Energy Center and Massachusetts Department of Environmental Protection, 2016
[16] "Wind Turbine Amplitude Modulation: Research to Improve Understanding as to its Cause and Effect." *RenewableUK.* December 2013.

High winds and/or high solar radiation can create turbulence which tends to break up and dissipate sound energy. Highly stable atmospheres, which tend to occur on clear nights with low ground-level wind speeds, tend to minimize atmospheric turbulence and are generally more favorable to downwind propagation.

In general terms, sound propagates along the ground best under stable conditions with a strong temperature inversion. This tends to occur during the night and is characterized by low ground level winds. As a result, worst-case conditions for wind turbines tend to occur downwind under moderate nighttime temperature inversions. Therefore, this is the default condition for modeling wind turbine sound.

Masking

As mentioned above, sound levels from wind turbines are a function of wind speed. Background sound is also a function of wind speed, i.e., the stronger the winds, the louder the resulting background sound. This effect is amplified in areas covered by trees and other vegetation.

The sound from a wind turbine can often be masked by wind sound at downwind receptors because the frequency spectrum from wind is very similar to the frequency spectrum from a wind turbine. Figure 8 compares the shape of the sound spectrum measured during a 5 m/s wind event to that of the V110 STE wind turbine. As shown, the shapes of the spectra are very similar. As a result, the masking of turbine sound occurs at higher wind speeds for some meteorological conditions. Masking will occur most, when ground wind speeds are relatively high, creating wind-caused sound such as wind blowing through the trees and interaction of wind with structures.

It is important to note that while winds may be blowing at turbine height, there may be little to no wind at ground level. This is especially true during strong wind gradients (high wind shear), which mostly occur at night. This can also occur on the leeward side of ridges where the ridge blocks the wind.

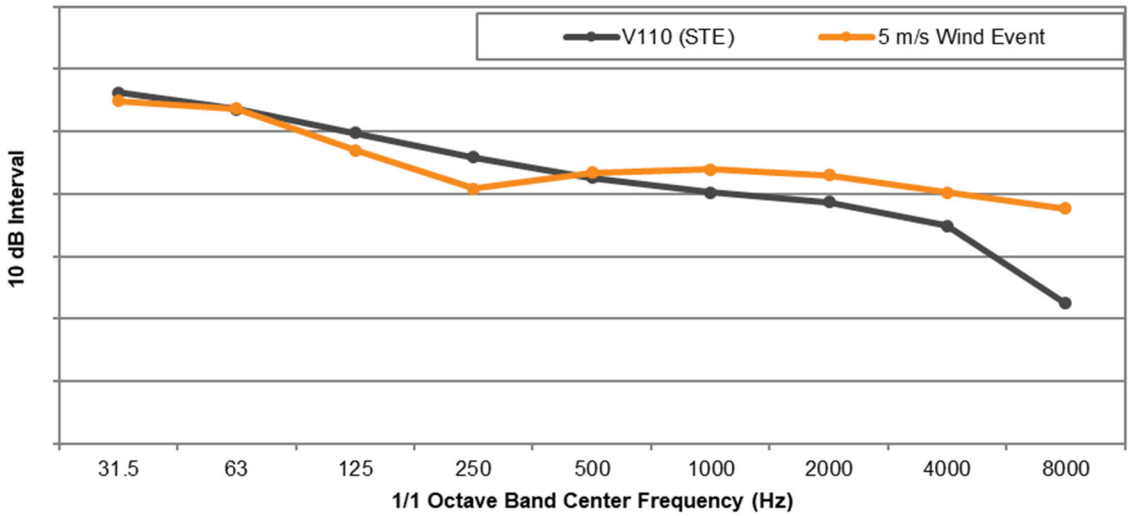

FIGURE 8: COMPARISON OF NORMALIZED FREQUENCY SPECTRA FROM WIND AND THE V110 (WITH STE) TURBINE[17]

Infrasound and Low Frequency Sound

Infrasound is sound pressure fluctuations at frequencies below about 20 Hz. Sound below this frequency is only audible at very high magnitudes (90 dBG[18] and higher). Low frequency sound is in the audible range of human hearing, that is, above 20 Hz, but below 100 to 200 Hz depending on the definition.

Low frequency aerodynamic tonal sound is typically associated with downwind rotors on horizontal axis wind turbines. In this configuration, the rotor plane is behind the tower relative to the oncoming wind. As the turbine blades rotate, each blade crosses behind the tower's aerodynamic wake and experiences brief load fluctuations. This causes short, low-frequency pulses or thumping sounds. Large modern wind turbines are "upwind", where the rotor plane is upwind of the tower. As a result, this type of low frequency sound is at a much lower magnitude with upwind turbines than downwind turbines, well below established infrasonic hearing thresholds.

Figure 9 shows the sound levels 350 meters (1,148 feet) from a wind turbine when the wind turbine was operating (T-on) and shut down (T-off) for wind speeds at hub height greater than 9 m/s. Measurements were made over approximately two weeks.[19] The red 90 dBG line is shown here as the ISO 7196:1995 perceptibility threshold. As shown, the wind turbines generated measurable infrasound, but at least 20 dB below audibility thresholds.

[17] The purpose of this Figure is to show the shapes to two spectra relative to one another and not the actual sound level of the two sources of sound. The level of each source was normalized independently.
[18] See Appendix A for additional information on frequency-weighted sound levels.
[19] RSG, et al., "Massachusetts Study on Wind Turbine Acoustics," Massachusetts Clean Energy Center and Massachusetts Department of Environmental Protection, 2016 – Graphic from RSG presentation to MassDEP WNTAG, March, 2016

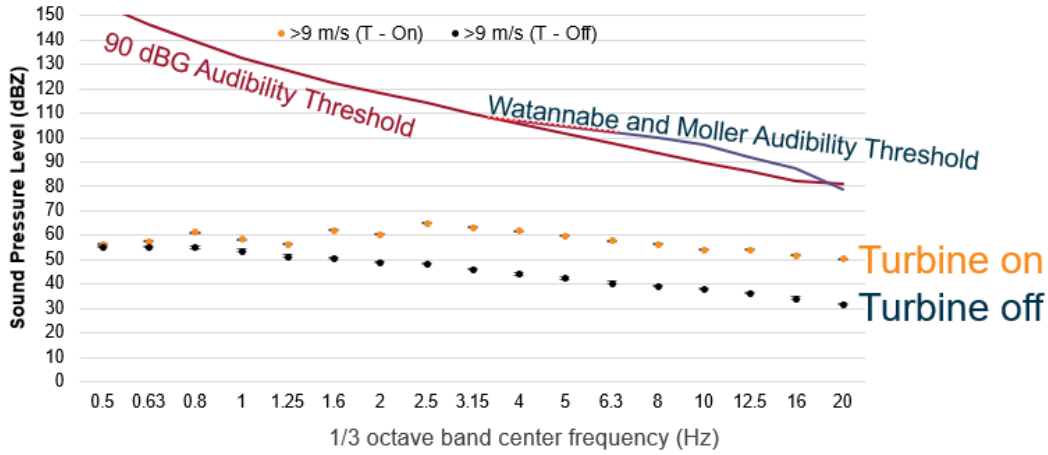

FIGURE 9: INFRASOUND FROM A WIND TURBINE AT 350 METERS (1,148 FEET) COMPARED WITH PERCEPTION THRESHOLDS

Low frequency sound is primarily generated by the generator and mechanical components. Much of the mechanical sound has been reduced in modern wind turbines through improved sound insulation at the hub. Low frequency sound can also be generated by the blades at higher wind speeds when the inflow air is very turbulent. However, at these wind speeds, low frequency sound from the wind turbine blades is often masked by wind sound at the downwind receptors.

Finally, low frequency sound is absorbed less by the atmosphere and ground than higher frequency sound. This is taken into account in our modeling by using frequency-specific ground attenuation and atmospheric absorption factors.

Use of Sound Level Weighting Networks for Wind Turbine Sound

The human ear is not equally sensitive to sound pressure levels at all frequencies and magnitudes. Some frequencies, despite being the same decibel level (that is, magnitude), seem louder than others. For example, a 500 Hz tone at 80 dB will sound louder than a 63 Hz tone at the same level. In addition, the relative loudness of these tones will change with magnitude. For example, the perceived difference in loudness between those two tones is less when both are at 110 dB than when they are at 40 dB.

To account for the difference in the perceived loudness of a sound by frequency and magnitude, acousticians apply frequency weightings to sound levels. The most common weighting scale used in environmental noise analysis is the “A-weighting”, which represents the sensitivity of the human ear at lower sound pressure levels. The A-weighting is the most appropriate weighting when overall sound pressure levels are relatively low (up to about 70 dBA). The A-weighting de-emphasizes sounds at lower and very high frequencies, since the human ear is insensitive to sound at these frequencies at low magnitude. The A-weighting is indicated by “dBA” or “dB(A)”.

At higher sound pressure levels (greater than approximately 70 dBA), a different weighting must be used since human hearing sensitivity does not change as much with frequency. The “C-weighting” mimics the sensitivity of the human ear for these moderate to higher sound levels (greater than approximately 70 dBA, which is higher ground-based sound levels produced by wind power projects). C-weighted sound levels are indicated by “dBC” or “dB(C)”.

The “Z-weighting” does not emphasize or de-emphasize sound at any frequency. “Z” weighted sound levels are sometimes labeled as “Flat” or “Linear”. The difference is that the “Z-weighting” is defined as being unweighted in a specific range, whereas “Flat” or “Linear” indicate that no weighting has been used. Z-weighting or unweighted levels are typically used when reporting sound levels at individual octave bands.

The most appropriate weighting for wind turbine sound is A-weighting, for two reasons. The first is that sound pressure levels due to wind turbine sound are typically in the appropriate range for the A-weighting at typical receiver distances (50 dBA or less). The second is that various studies of wind turbine acoustics have shown that the potential effects of wind turbine noise on people are correlated with A-weighted sound level (i.e., Pedersen et al, 2008[20]) as well as to the perceived loudness of wind turbine sound.[21,22] Other researchers found that 51% of the energy making up a C-weighted measurement of wind turbine sound is not audible. Thus, it is more difficult to relate the level of C-weighted sound to human perception. That is, two sounds may be perceived exactly alike, but there could be significant variations in the C-weighted sound level depending on the content of inaudible sound in each.[15]

[20] Pedersen, Eja and Waye, Kerstin. “Perception and annoyance due to wind turbine noise - a dose-response relation.” Journal of the Acoustical Society of America. 116(6). pp. 3460-3470.
[21] Yokoyama S., et al. “Perception of low frequency components in wind turbine noise.” Noise Control Engr. J. 62(5) 2014
[22] Yokoyama et al. “Loudness evaluation of general environmental noise containing low frequency components.” Proceedings of InterNoise2013, 2013

APPENDIX C. MODEL INPUT DATA

TABLE 4: SOUND PROPAGATION MODELING PARAMETERS

PARAMETER	SETTING
Ground Absorption	Spectral for all sources, mixed ground (G=0.7)
Atmospheric Attenuation	Based on 10˚ Celsius, 70% relative humidity
Structure Reflections	None
Receiver Height	4 meters for residences and isoline contours
Search Distance	10,000 meters

[NONPUBLIC DATA BEGINS...

TABLE 5: TURBINE 1/1 OCTAVE BAND MODELED SPECTRA (dBZ UNLESS OTHERWISE INDICATED)

TURBINE	1/1 OCTAVE BAND CENTER FREQUENCY (Hz)									SUM (dBA)	SUM (dBZ)
	31.5	63	125	250	500	1000	2000	4000	8000		
GE 1.5 MW sl/sle		111	110	106	102	98	93	86	79	104	115
Vestas V110 2.2 STE	[redacted]									106	[redacted]
GE 1.6-97 LNTE	116	112	109	104	102	102	100	94	81	108	120
GE 1.6-91 LNTE	117	114	110	105	102	100	97	90	76	105	119

...NONPUBLIC DATA ENDS]

TABLE 6: MODELED TURBINE SOUND POWER LEVELS, NRO, & LOCATIONS

TURBINE	MODELED SOUND POWER LEVEL (dBA)		REPOWER TURBINE MODEL	HUB HEIGHT (m)	COORDINATES (UTM NAD83 Z15N)		GROUND ELEVATION + HUB HEIGHT (m)
	EXISTING	REPOWER			X (m)	Y (m)	
T-01	107	108	V110 2.2 STE	95	509214	4855635	590
T-02	107	108	V110 2.2 STE	95	509487	4855808	594
T-03	107	108	V110 2.2 STE	95	509968	4855698	595
T-04	107	108	V110 2.2 STE	95	510231	4855936	594
T-05	107	108	V110 2.2 STE	95	515588	4858704	604
T-06	107	108	V110 2.2 STE	95	515938	4858704	605
T-07	107	108	V110 2.2 STE	95	516393	4858812	598
T-08	107	108	V110 2.2 STE	95	516748	4858757	601
T-09	107	108	V110 2.2 STE	95	518143	4857698	604
T-10	107	108	V110 2.2 STE	95	518432	4857985	598
T-11	107	108	V110 2.2 STE	95	516480	4855681	595
T-12	107	108	V110 2.2 STE	95	516718	4855946	594
T-13	107	108	V110 2.2 STE	95	510988	4853306	601
T-14	107	108	V110 2.2 STE	95	511241	4853542	600
T-15	107	108	V110 2.2 STE	95	511479	4853797	596
T-16	107	108	V110 2.2 STE	95	511219	4852101	600

TURBINE	MODELED SOUND POWER LEVEL (dBA)		REPOWER TURBINE MODEL	HUB HEIGHT (m)	COORDINATES (UTM NAD83 Z15N)		GROUND ELEVATION + HUB HEIGHT (m)
	EXISTING	REPOWER			X (m)	Y (m)	
T-17	107	108	V110 2.2 STE	95	511466	4852325	599
T-18	107	108	V110 2.2 STE	95	511710	4852547	601
T-19	107	108	V110 2.2 STE	95	511615	4851260	595
T-20	107	108	V110 2.2 STE	95	511872	4851468	601
T-21	107	108	V110 2.2 STE	95	512504	4852563	606
T-22	107	108	V110 2.2 STE	95	512783	4852745	608
T-23	107	108	V110 2.2 STE	95	513047	4852987	606
T-24	107	108	V110 2.2 STE	95	513274	4853264	605
T-25	107	108	V110 2.2 STE	95	513481	4853543	602
T-26	107	108	V110 2.2 STE	95	513963	4853990	600
T-27	107	108	V110 2.2 STE	95	514287	4854168	599
T-28	107	108	V110 2.2 STE	95	514592	4854375	601
T-29	107	108	V110 2.2 STE	95	514907	4854489	604
T-30	107	108	V110 2.2 STE	95	516425	4854442	602
T-31	107	108	V110 2.2 STE	95	514703	4853225	610
T-32	107	108	V110 2.2 STE	95	515099	4853245	610
T-33	107	108	V110 2.2 STE	95	515779	4852415	610
T-34	107	108	V110 2.2 STE	95	516164	4852497	609
T-35	107	108	V110 2.2 STE	95	516485	4852732	608
T-36	107	108	V110 2.2 STE	95	516644	4853103	605
T-37	107	108	V110 2.2 STE	95	514225	4850489	606
T-38	107	108	V110 2.2 STE	95	514615	4850499	609
T-39	107	108	V110 2.2 STE	95	515007	4850504	609
T-40	107	108	V110 2.2 STE	95	516369	4850752	610
T-41	107	108	V110 2.2 STE	95	516648	4850928	608
T-42	107	108	V110 2.2 STE	95	517137	4851211	607
T-43	107	108	V110 2.2 STE	95	517441	4851325	604
T-44	107	108	V110 2.2 STE	95	517781	4851324	603
T-45	107	108	V110 2.2 STE	95	516413	4849622	612
T-46	107	108	V110 2.2 STE	95	516641	4849868	614
T-47	107	108	V110 2.2 STE	95	517373	4849161	615
T-48	107	108	V110 2.2 STE	95	517656	4849332	613
T-49	107	108	V110 2.2 STE	95	517930	4849516	614
T-50	107	108	V110 2.2 STE	95	518940	4851106	603
T-51	107	108	V110 2.2 STE	95	520470	4850783	603

TURBINE	MODELED SOUND POWER LEVEL (dBA)		REPOWER TURBINE MODEL	HUB HEIGHT (m)	COORDINATES (UTM NAD83 Z15N)		GROUND ELEVATION + HUB HEIGHT (m)
	EXISTING	REPOWER			X (m)	Y (m)	
T-52	107	108	V110 2.2 STE	95	520774	4850911	602
T-53	107	108	V110 2.2 STE	95	521034	4851115	602
T-54	107	108	V110 2.2 STE	95	514513	4846105	606
T-55	107	108	V110 2.2 STE	95	514968	4846386	607
T-56	107	108	V110 2.2 STE	95	516053	4845946	612
T-57	107	108	V110 2.2 STE	95	516369	4846134	614
T-58	107	108	V110 2.2 STE	95	517326	4846071	612
T-59	107	108	V110 2.2 STE	95	519917	4847245	602
T-60	107	108	V110 2.2 STE	95	520394	4847399	605
T-61	107	108	V110 2.2 STE	95	520638	4847653	607
T-62	107	108	V110 2.2 STE	95	520846	4847967	603
T-63	107	108	V110 2.2 STE	95	521154	4848143	604
T-64	107	108	V110 2.2 STE	95	521407	4848385	601
T-65	107	108	V110 2.0 STE	95	515129	4843886	600
T-66	107	108	V110 2.2 STE	95	515002	4844885	603
T-67	107	108	V110 2.2 STE	95	517276	4843694	611
T-68	107	108	V110 2.2 STE	95	517588	4843858	610
T-69	107	108	V110 2.2 STE	95	517953	4844001	607
T-70	107	108	V110 2.2 STE	95	518218	4844261	604
T-71	107	108	V110 2.2 STE	95	518964	4843606	611
T-72	107	108	V110 2.2 STE	95	519057	4844480	609
T-73	107	108	V110 2.2 STE	95	519347	4844638	610
T-74	107	108	V110 2.2 STE	95	519621	4844822	608
T-75	107	108	V110 2.2 STE	95	519489	4842368	618
T-76	107	108	V110 2.2 STE	95	519876	4842409	618
T-77	107	108	V110 2.2 STE	95	516214	4840840	604
T-78	107	108	V110 2.2 STE	95	516589	4841054	600
T-79	107	108	V110 2.2 STE	95	516307	4839602	601
T-80	107	108	V110 2.2 STE	95	516596	4839823	603
T-81	107	108	V110 2.2 STE	95	518085	4839793	613
T-82	107	108	V110 2.2 STE	95	518319	4840015	612
T-83	107	108	V110 2.2 STE	95	519086	4839861	613
T-84	107	108	V110 2.2 STE	95	519440	4839911	614
T-85	107	108	V110 2.2 STE	95	519785	4839954	615
T-86	107	108	V110 2.2 STE	95	520652	4839579	607

TURBINE	MODELED SOUND POWER LEVEL (dBA)		REPOWER TURBINE MODEL	HUB HEIGHT (m)	COORDINATES (UTM NAD83 Z15N)		GROUND ELEVATION + HUB HEIGHT (m)
	EXISTING	REPOWER			X (m)	Y (m)	
T-87	107	108	V110 2.2 STE	95	520936	4839750	607
T-88	107	108	V110 2.2 STE	95	521250	4839850	609
T-89	107	108	V110 2.2 STE	95	522167	4839992	615
T-90	107	108	V110 2.2 STE	95	522464	4840086	614
T-91	107	108	V110 2.2 STE	95	522772	4840187	617
T-92	107	108	V110 2.2 STE	95	523080	4840282	620
T-93	107	108	V110 2.2 STE	95	517650	4837865	600
T-94	107	108	V110 2.2 STE	95	517973	4837931	605
T-95	107	108	V110 2.2 STE	95	518287	4838016	604
T-96	107	108	V110 2.2 STE	95	519248	4838247	607
T-97	107	108	V110 2.2 STE	95	519569	4838324	611
T-98	107	108	V110 2.2 STE	95	520625	4837956	599
T-99	107	108	V110 2.2 STE	95	520826	4838251	604
T-100	107	108	V110 2.2 STE	95	521590	4838605	605
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	524811	4835945	592
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	524150	4836087	591
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	523747	4836086	590
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	524116	4836542	589
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	523737	4836541	586
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	526072	4837260	588
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	524626	4838121	587
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	526267	4838894	585
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	525276	4838834	594
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	525516	4839335	594
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	524541	4839331	592
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	526385	4839583	582
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	525946	4840570	584

TURBINE	MODELED SOUND POWER LEVEL (dBA)		REPOWER TURBINE MODEL	HUB HEIGHT (m)	COORDINATES (UTM NAD83 Z15N)		GROUND ELEVATION + HUB HEIGHT (m)
	EXISTING	REPOWER			X (m)	Y (m)	
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	525398	4840623	590
Grand Meadow	106	108.5	GE1.6-97 LNTE	80	526193	4841415	583
Grand Meadow	106	107	GE1.6-91 LNTE	80	524568	4836399	591
Grand Meadow	106	103	GE1.6-91 NRO 101	80	525228	4836546	594
Grand Meadow	106	103	GE1.6-91 NRO 101	80	524824	4836845	591
Grand Meadow	106	106	GE1.6-91 NRO 104	80	524421	4836854	589
Grand Meadow	106	103	GE1.6-91 NRO 101	80	525145	4837368	592
Grand Meadow	106	103	GE1.6-91 NRO 101	80	524580	4837566	589
Grand Meadow	106	103	GE1.6-91 NRO 101	80	526408	4837939	593
Grand Meadow	106	106	GE1.6-91 NRO 104	80	526196	4838383	587
Wapsipinicon Wind	106		GE 1.5 sl	80	522970	4841824	585
Wapsipinicon Wind	106		GE 1.5 sl	80	523007	4842768	574
Wapsipinicon Wind	106		GE 1.5 sl	80	523791	4844381	582
Wapsipinicon Wind	106		GE 1.5 sl	80	523966	4842583	574
Wapsipinicon Wind	106		GE 1.5 sl	80	524029	4842972	579
Wapsipinicon Wind	106		GE 1.5 sl	80	524167	4844938	584
Wapsipinicon Wind	106		GE 1.5 sl	80	524330	4844372	580
Wapsipinicon Wind	106		GE 1.5 sl	80	524368	4842573	578
Wapsipinicon Wind	106		GE 1.5 sl	80	524432	4842973	579
Wapsipinicon Wind	106		GE 1.5 sl	80	524440	4844950	583
Wapsipinicon Wind	106		GE 1.5 sl	80	524566	4845883	580
Wapsipinicon Wind	106		GE 1.5 sl	80	524731	4842574	581

TURBINE	MODELED SOUND POWER LEVEL (dBA)		REPOWER TURBINE MODEL	HUB HEIGHT (m)	COORDINATES (UTM NAD83 Z15N)		GROUND ELEVATION + HUB HEIGHT (m)
	EXISTING	REPOWER			X (m)	Y (m)	
Wapsipinicon Wind	106		GE 1.5 sl	80	524823	4846051	581
Wapsipinicon Wind	106		GE 1.5 sl	80	524826	4842974	581
Wapsipinicon Wind	106		GE 1.5 sl	80	524841	4845518	579
Wapsipinicon Wind	106		GE 1.5 sl	80	524861	4844563	586
Wapsipinicon Wind	106		GE 1.5 sl	80	525182	4842620	584
Wapsipinicon Wind	106		GE 1.5 sl	80	525213	4842998	586
Wapsipinicon Wind	106		GE 1.5 sl	80	525263	4849040	581
Wapsipinicon Wind	106		GE 1.5 sl	80	525410	4848297	582
Wapsipinicon Wind	106		GE 1.5 sl	80	525413	4843221	587
Wapsipinicon Wind	106		GE 1.5 sl	80	525436	4847919	575
Wapsipinicon Wind	106		GE 1.5 sl	80	525592	4849030	582
Wapsipinicon Wind	106		GE 1.5 sl	80	526163	4849048	590

APPENDIX D. RECEIVER INFORMATION

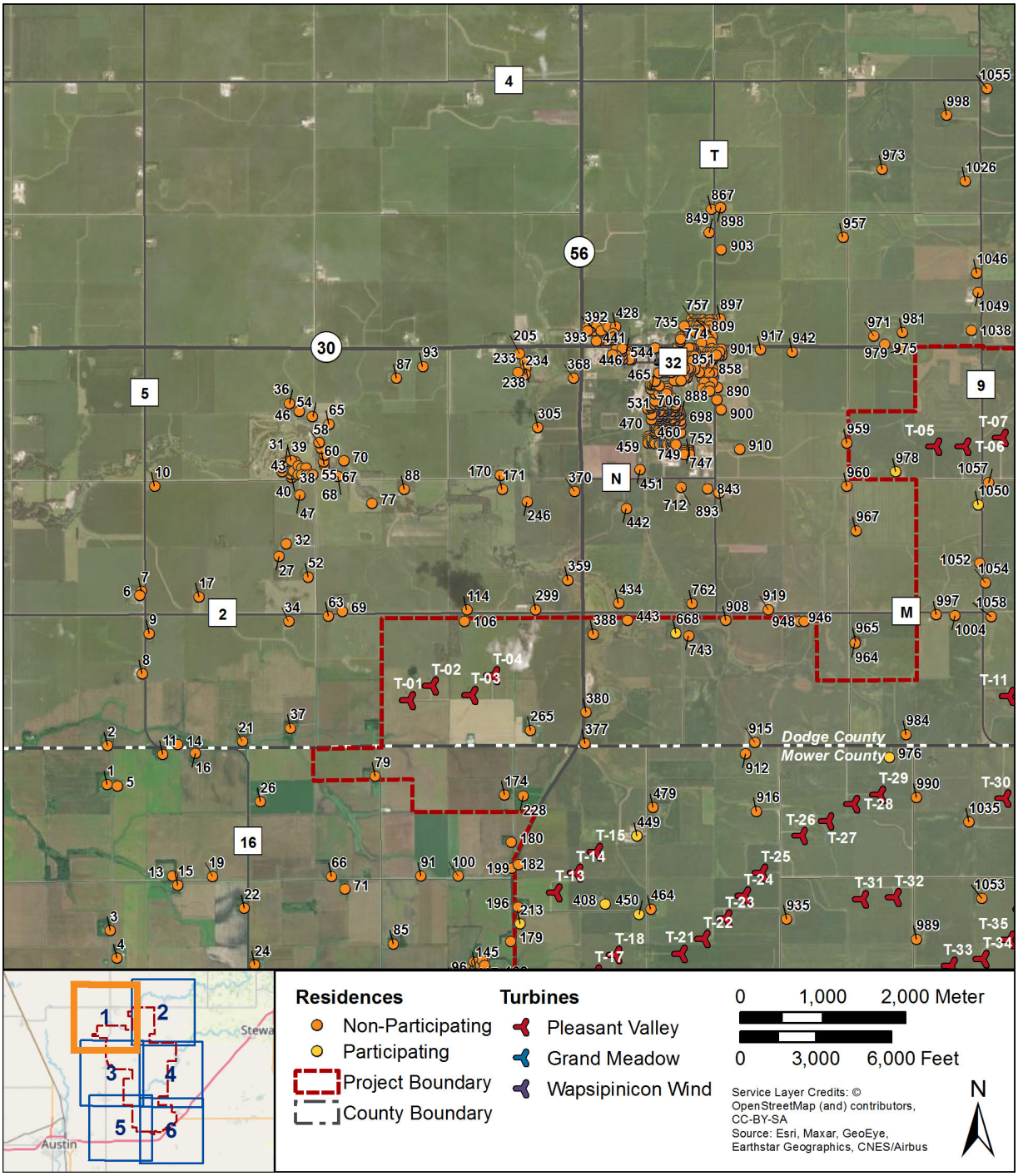

FIGURE 10 RECEIVER ID MAP – AREA 1

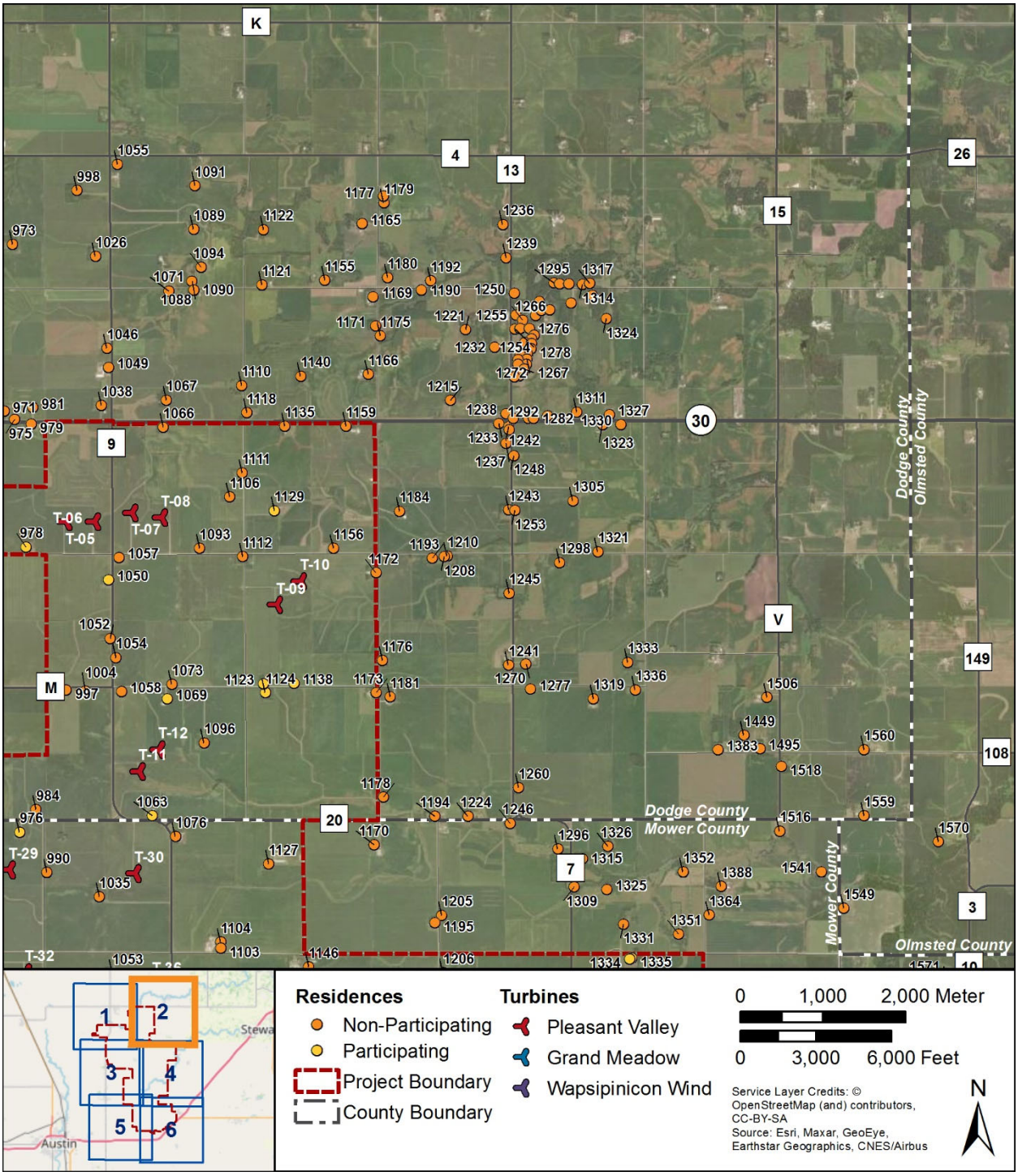

FIGURE 11 RECEIVER ID MAP – AREA 2

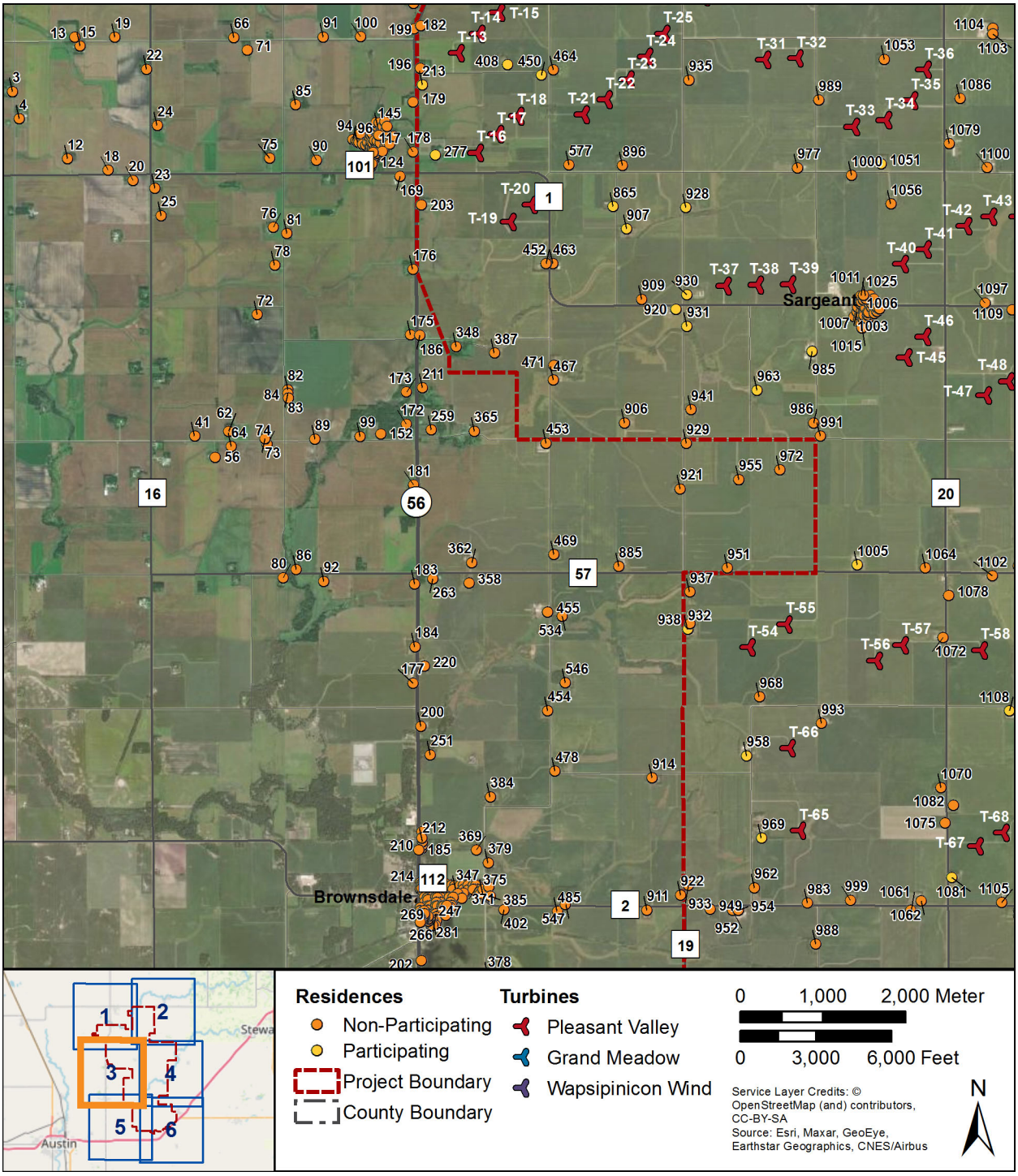

FIGURE 12 RECEIVER ID MAP – AREA 3

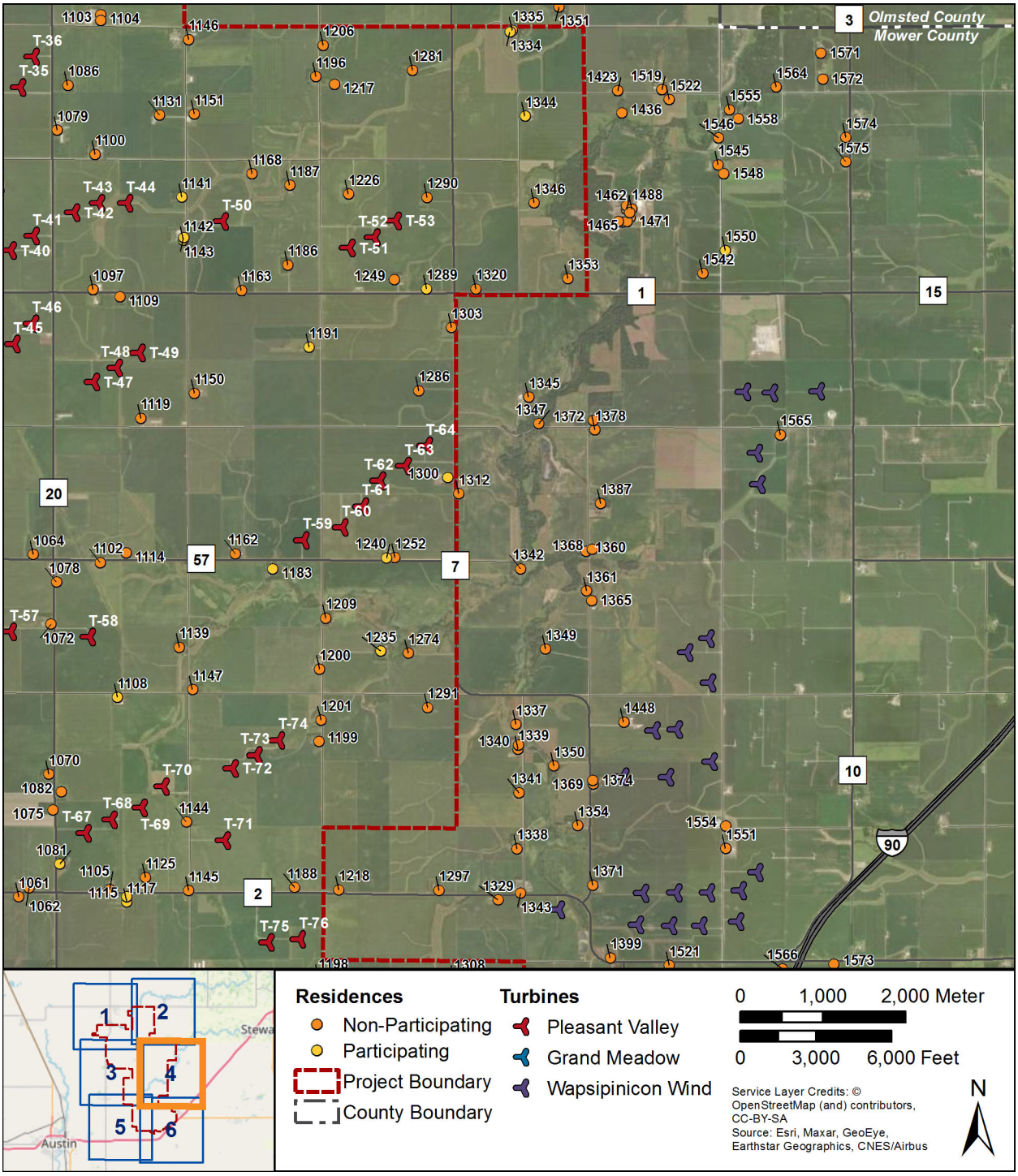

FIGURE 13 RECEIVER ID MAP – AREA 4

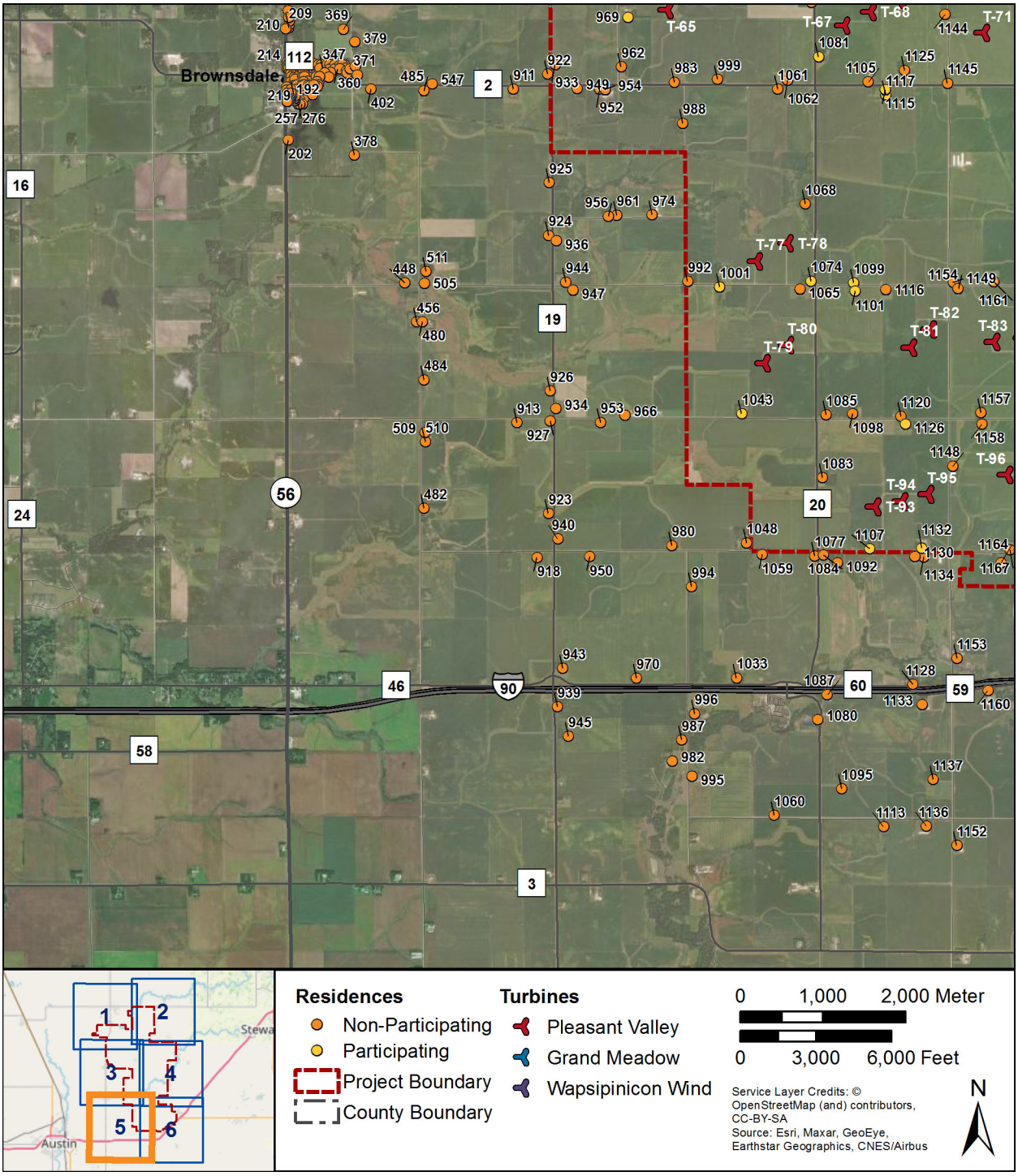

FIGURE 14 RECEIVER ID MAP – AREA 5

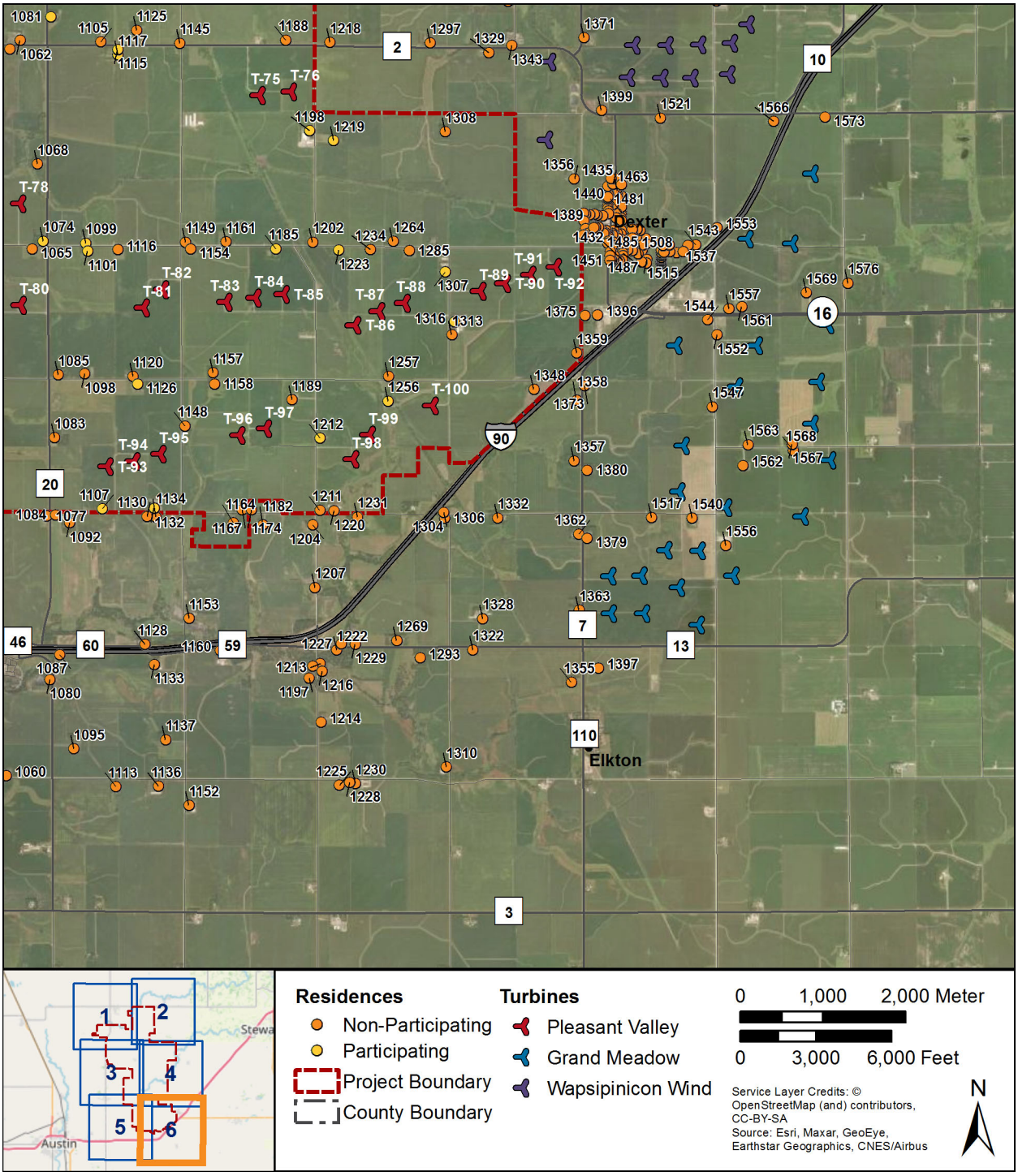

FIGURE 15 RECEIVER ID MAP – AREA 6

TABLE 7: MODEL RESULTS AND COORDINATES FOR EACH MODELED RECEIVER

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1	NP	23	25	3	31	35	40	45	505564	4854613	398
R-2	NP	23	26	3	31	35	40	45	505567	4855084	395
R-3	NP	22	25	3	31	35	40	45	505600	4852844	397
R-4	NP	22	25	3	31	35	40	45	505680	4852514	399
R-5	NP	23	26	3	31	35	40	45	505687	4854597	399
R-6	NP	23	26	3	31	35	40	45	505957	4856908	399
R-7	NP	23	26	3	31	35	40	45	505980	4856952	399
R-8	NP	24	27	3	32	36	40	45	505987	4855952	400
R-9	NP	24	26	3	32	36	40	45	506072	4856439	400
R-10	NP	21	25	4	31	35	40	45	506139	4858227	391
R-11	NP	25	27	3	32	36	40	45	506235	4854981	397
R-12	NP	23	26	3	31	35	40	45	506269	4852029	399
R-13	NP	24	27	3	32	36	40	45	506356	4853504	396
R-14	NP	25	28	3	32	36	40	45	506416	4855096	395
R-15	NP	24	27	3	32	36	40	45	506418	4853394	395
R-16	NP	26	28	3	32	36	40	45	506630	4854991	397
R-17	NP	25	28	3	32	36	40	45	506674	4856887	397

[23] NP: Non-Participating, P: Participating

[24] The sound levels and the difference between the Repower and Existing scenarios are rounded to the nearest whole decibel. In some cases, the sound levels reported sound level for the Repower and Existing scenarios are the same, but a difference of 1 or -1 is reported. This is due to rounding. For example, the modeled Existing sound level may be 34.3 dBA, and the modeled Repower sound level may be 33.6 dBA. Both sound levels would be reported as 34 dBA, but a difference of -1 dB would be reported because the difference of 0.7 dB is rounded to the nearest whole number.

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-18	NP	24	27	3	32	36	40	45	506757	4851889	403
R-19	NP	26	28	3	32	36	40	45	506840	4853500	398
R-20	NP	25	28	3	32	36	40	45	507058	4851766	405
R-21	NP	28	31	3	33	36	41	45	507203	4855136	396
R-22	NP	26	29	3	33	36	40	45	507223	4853115	401
R-23	NP	26	28	3	32	36	40	45	507325	4851669	403
R-24	NP	26	29	3	32	36	40	45	507352	4852431	400
R-25	NP	25	28	3	32	36	40	45	507398	4851339	404
R-26	NP	28	31	3	34	36	41	45	507418	4854405	404
R-27	NP	27	30	3	33	36	40	45	507648	4857376	402
R-28	NP	23	26	3	31	36	40	45	507680	4858450	394
R-29	NP	25	27	3	32	36	40	45	507686	4858404	395
R-30	NP	24	27	3	32	36	40	45	507694	4858487	394
R-31	NP	23	26	3	32	36	40	45	507714	4858510	394
R-32	NP	27	30	3	33	36	40	45	507732	4857531	400
R-33	NP	23	26	3	31	36	40	45	507752	4858527	394
R-34	NP	30	33	3	35	37	41	45	507762	4856588	402
R-35	NP	25	27	3	32	36	40	45	507764	4858426	395
R-36	NP	22	26	4	31	35	40	45	507770	4859229	394
R-37	NP	31	34	3	35	37	41	45	507786	4855294	398
R-38	NP	25	28	3	32	36	40	45	507792	4858374	395
R-39	NP	24	27	3	32	36	40	45	507794	4858532	394
R-40	NP	25	28	3	32	36	40	45	507794	4858333	395
R-41	NP	22	25	4	31	35	40	45	507806	4848671	396
R-42	NP	25	28	3	32	36	40	45	507823	4858412	395
R-43	NP	24	27	3	32	36	40	45	507838	4858521	394

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-44	NP	25	28	3	32	36	40	45	507877	4858367	395
R-45	NP	25	28	3	32	36	40	45	507878	4858472	395
R-46	NP	22	26	3	31	35	40	45	507890	4859131	393
R-47	NP	26	29	3	32	36	40	45	507897	4858119	397
R-48	NP	25	28	3	32	36	40	45	507920	4858364	395
R-49	NP	24	27	3	32	36	40	45	507922	4858446	396
R-50	NP	25	28	3	32	36	40	45	507966	4858361	396
R-51	NP	25	28	3	32	36	40	45	507971	4858445	395
R-52	NP	29	32	3	34	37	41	45	507997	4857127	403
R-53	NP	25	28	3	32	36	40	45	508008	4858363	396
R-54	NP	23	26	3	31	36	40	45	508050	4859072	393
R-55	NP	25	28	3	32	36	40	45	508055	4858363	396
R-56	NP	21	25	4	31	35	40	45	508057	4848412	396
R-57	NP	24	27	3	32	36	40	45	508130	4858757	395
R-58	NP	25	28	3	32	36	40	45	508155	4858684	396
R-59	NP	25	28	3	32	36	40	45	508188	4858521	397
R-60	NP	25	28	3	32	36	40	45	508195	4858482	397
R-61	NP	25	28	3	32	36	40	45	508202	4858604	395
R-62	NP	22	26	4	31	36	40	45	508217	4848727	397
R-63	NP	32	35	3	36	38	41	45	508243	4856652	406
R-64	NP	23	26	3	31	36	40	45	508248	4848541	395
R-65	NP	24	27	3	32	36	40	45	508253	4858978	394
R-66	NP	30	33	3	34	37	41	45	508282	4853499	408
R-67	NP	26	29	3	32	36	40	45	508301	4858381	398
R-68	NP	25	28	3	32	36	40	45	508358	4858344	396
R-69	NP	33	35	3	37	38	41	45	508411	4856712	405

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-70	NP	26	28	3	32	36	40	45	508432	4858532	394
R-71	NP	30	33	3	35	37	41	45	508443	4853347	409
R-72	NP	27	30	3	33	36	40	45	508565	4850142	397
R-73	NP	24	27	3	32	36	40	45	508658	4848638	402
R-74	NP	22	25	3	31	35	40	45	508686	4848567	402
R-75	NP	30	33	3	34	37	41	45	508714	4852035	406
R-76	NP	29	32	3	34	37	41	45	508758	4851198	402
R-77	NP	28	31	3	33	36	40	45	508770	4858022	396
R-78	NP	28	31	3	34	36	41	45	508775	4850739	398
R-79	NP	36	38	2	39	40	42	46	508810	4854714	406
R-80	NP	22	26	4	31	35	40	45	508878	4846954	397
R-81	NP	29	32	3	34	37	41	45	508925	4851122	403
R-82	NP	26	29	3	33	36	40	45	508934	4849230	406
R-83	NP	26	29	3	33	36	40	45	508935	4849185	406
R-84	NP	26	29	3	32	36	40	45	508940	4849126	405
R-85	NP	31	34	3	36	38	41	45	509028	4852683	410
R-86	NP	23	26	4	32	36	40	45	509037	4847054	392
R-87	NP	23	26	3	31	35	40	45	509066	4859534	399
R-88	NP	28	31	3	33	36	40	45	509165	4858186	396
R-89	NP	26	29	3	32	36	40	45	509264	4848631	398
R-90	NP	32	35	3	36	38	41	45	509280	4852012	405
R-91	NP	33	36	3	37	39	41	46	509362	4853503	409
R-92	NP	21	25	3	31	35	40	45	509371	4846909	392
R-93	NP	24	27	3	32	36	40	45	509387	4859675	402
R-94	NP	34	37	3	38	39	42	46	509721	4852262	407
R-95	NP	34	37	3	38	39	42	46	509759	4852243	407

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-96	NP	35	37	3	38	39	42	46	509781	4852231	407
R-97	NP	35	37	3	38	39	42	46	509799	4852222	408
R-98	NP	35	37	3	38	39	42	46	509808	4852334	408
R-99	NP	27	30	3	33	36	40	45	509811	4848665	396
R-100	NP	36	38	3	39	40	42	46	509816	4853506	409
R-101	NP	35	37	3	38	39	42	46	509842	4852207	408
R-102	NP	34	37	3	38	39	42	46	509847	4851948	407
R-103	NP	35	37	3	38	39	42	46	509875	4851879	406
R-104	NP	35	37	3	38	39	42	46	509882	4851895	406
R-105	NP	35	38	3	38	40	42	46	509882	4852191	408
R-106	NP	39	42	2	42	42	44	47	509892	4856589	405
R-107	NP	35	37	3	38	39	42	46	509893	4851928	407
R-108	NP	35	38	3	38	40	42	46	509901	4852098	409
R-109	NP	35	38	3	38	40	42	46	509907	4852228	408
R-110	NP	35	38	3	38	39	42	46	509908	4851970	408
R-111	NP	35	37	3	38	39	42	46	509913	4851877	405
R-112	NP	35	38	3	38	39	42	46	509916	4852003	408
R-113	NP	35	38	3	38	39	42	46	509917	4851985	408
R-114	NP	38	40	2	41	41	43	46	509921	4856727	404
R-115	NP	35	37	3	38	39	42	46	509924	4851903	406
R-116	NP	35	38	3	39	40	42	46	509927	4852177	409
R-117	NP	35	38	3	39	40	42	46	509927	4852279	408
R-118	NP	35	38	3	38	40	42	46	509930	4852020	408
R-119	NP	35	38	3	38	39	42	46	509932	4851920	406
R-120	NP	35	38	3	39	40	42	46	509938	4852120	409
R-121	NP	36	38	3	39	40	42	46	509942	4852312	408

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-122	NP	35	38	3	39	40	42	46	509944	4852165	409
R-123	NP	35	38	3	39	40	42	46	509948	4852073	409
R-124	NP	35	38	3	38	40	42	46	509950	4851944	407
R-125	NP	36	38	3	39	40	42	46	509951	4852225	408
R-126	NP	35	38	3	38	40	42	46	509952	4851965	407
R-127	NP	36	38	3	39	40	42	46	509955	4852339	408
R-128	NP	35	38	3	39	40	42	46	509955	4852115	409
R-129	NP	35	38	3	38	40	42	46	509961	4851987	407
R-130	NP	36	38	3	39	40	42	46	509962	4852161	409
R-131	NP	36	38	3	39	40	42	46	509968	4852107	409
R-132	NP	36	38	3	39	40	42	46	509970	4852220	408
R-133	NP	35	38	3	38	40	42	46	509971	4852008	406
R-134	NP	36	38	3	39	40	42	46	509975	4852390	408
R-135	NP	36	38	3	39	40	42	46	509981	4852154	409
R-136	NP	36	38	3	39	40	42	46	509981	4852301	408
R-137	NP	35	38	3	39	40	42	46	509987	4852037	406
R-138	NP	36	38	3	39	40	42	46	509989	4852251	408
R-139	NP	36	38	3	39	40	42	46	509998	4852065	407
R-140	NP	36	38	3	39	40	42	46	510003	4852205	408
R-141	NP	36	39	3	39	40	42	46	510005	4852470	409
R-142	NP	36	38	3	39	40	42	46	510007	4852094	408
R-143	NP	36	39	3	39	40	42	46	510011	4852374	408
R-144	NP	36	39	3	39	40	42	46	510020	4852242	408
R-145	NP	36	39	3	39	40	42	46	510024	4852414	408
R-146	NP	36	38	3	39	40	42	46	510028	4852141	408
R-147	NP	36	39	3	39	40	42	46	510031	4852154	408

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-148	NP	36	39	3	39	40	42	46	510039	4852311	408
R-149	NP	36	39	3	39	40	42	46	510041	4852464	408
R-150	NP	36	39	3	39	40	42	46	510055	4852220	407
R-151	NP	36	39	3	39	40	42	46	510057	4852187	407
R-152	NP	27	30	3	33	36	40	45	510062	4848697	399
R-153	NP	36	39	3	39	40	42	46	510062	4852123	407
R-154	NP	36	39	3	39	40	42	46	510065	4852355	408
R-155	NP	36	39	3	40	40	43	46	510071	4852375	408
R-156	NP	36	39	3	39	40	42	46	510080	4852116	407
R-157	NP	37	39	3	40	40	43	46	510080	4852392	407
R-158	NP	37	39	3	40	40	43	46	510089	4852295	408
R-159	NP	37	39	3	40	41	43	46	510089	4852423	408
R-160	NP	37	39	3	40	41	43	46	510104	4852334	408
R-161	NP	37	39	3	40	41	43	46	510112	4852478	408
R-162	NP	37	39	3	40	40	43	46	510115	4852168	407
R-163	NP	37	39	3	40	41	43	46	510120	4852248	407
R-164	NP	37	39	3	40	41	43	46	510123	4852373	407
R-165	NP	37	39	3	40	41	43	46	510138	4852423	407
R-166	NP	37	39	3	40	41	43	46	510139	4852210	407
R-167	NP	37	39	3	40	41	43	46	510172	4852209	406
R-168	NP	37	40	3	40	41	43	46	510219	4852298	407
R-169	NP	37	40	3	40	41	43	46	510293	4851815	411
R-170	NP	28	30	3	33	36	40	45	510329	4858360	397
R-171	NP	28	31	3	34	36	41	45	510349	4858191	400
R-172	NP	28	31	3	33	36	40	45	510373	4848814	400
R-173	NP	29	32	3	34	37	41	45	510373	4849204	397

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-174	NP	37	40	3	40	41	43	46	510379	4854490	411
R-175	NP	31	33	3	35	37	41	45	510419	4849895	405
R-176	NP	34	37	3	38	39	42	46	510450	4850688	404
R-177	NP	23	26	3	31	36	40	45	510451	4845676	401
R-178	NP	39	42	3	42	42	44	47	510453	4852114	411
R-179	NP	40	42	2	42	43	44	47	510455	4852713	412
R-180	NP	39	42	2	42	42	44	47	510457	4853915	413
R-181	NP	27	29	3	33	36	40	45	510459	4848074	407
R-182	NP	41	43	2	43	44	45	47	510466	4853603	410
R-183	NP	25	28	3	32	36	40	45	510470	4846877	400
R-184	NP	24	27	3	32	36	40	45	510474	4846114	403
R-185	NP	22	26	4	31	36	40	45	510520	4843655	391
R-186	NP	31	34	3	35	38	41	45	510534	4849889	405
R-187	NP	21	26	4	31	35	40	45	510537	4842917	397
R-188	NP	25	27	3	32	36	40	45	510538	4859605	402
R-189	NP	21	25	4	31	35	40	45	510538	4842955	397
R-190	NP	21	25	4	31	35	40	45	510540	4842776	395
R-191	NP	21	25	4	31	35	40	45	510541	4842794	395
R-192	NP	21	25	4	31	35	40	45	510542	4842877	396
R-193	NP	21	25	4	31	35	40	45	510542	4842820	396
R-194	NP	21	25	4	31	35	40	45	510542	4843180	395
R-195	NP	22	26	4	31	35	40	45	510543	4843253	395
R-196	NP	42	44	2	45	45	46	48	510543	4853126	414
R-197	NP	21	25	4	31	35	40	45	510543	4842837	396
R-198	NP	22	26	4	31	35	40	45	510544	4843217	395
R-199	NP	42	44	2	44	44	45	47	510546	4853642	411

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-200	NP	24	27	4	32	36	40	45	510550	4845152	394
R-201	NP	22	26	4	31	35	40	45	510554	4843234	395
R-202	NP	21	24	4	31	35	40	45	510555	4842312	393
R-203	NP	38	40	3	41	42	43	46	510556	4851467	412
R-204	NP	22	26	4	32	36	40	45	510556	4843875	393
R-205	NP	24	27	3	32	36	40	45	510558	4859830	404
R-206	NP	22	26	4	32	36	40	45	510558	4843795	392
R-207	NP	21	25	4	31	35	40	45	510559	4843185	395
R-208	NP	22	26	4	31	35	40	45	510560	4843220	395
R-209	NP	22	25	3	31	35	40	45	510562	4843672	390
R-210	NP	22	26	4	31	35	40	45	510564	4843707	391
R-211	NP	29	32	3	34	37	41	45	510564	4849256	399
R-212	NP	22	26	4	32	36	40	45	510565	4843750	392
R-213	P	41	44	2	44	44	45	47	510566	4852924	413
R-214	NP	22	25	4	31	35	40	45	510570	4843291	394
R-215	NP	22	26	4	31	35	40	45	510575	4843219	395
R-216	NP	21	25	4	31	35	40	45	510577	4843184	395
R-217	NP	21	26	4	31	35	40	45	510583	4842919	397
R-218	NP	21	25	4	31	35	40	45	510584	4843123	397
R-219	NP	21	25	4	31	35	40	45	510588	4843017	397
R-220	NP	23	27	4	32	36	40	45	510588	4845879	405
R-221	NP	21	25	4	31	35	40	45	510589	4842876	397
R-222	NP	21	25	4	31	35	40	45	510589	4843159	396
R-223	NP	22	26	4	31	35	40	45	510591	4843078	398
R-224	NP	21	25	4	31	35	40	45	510591	4842852	396
R-225	NP	21	25	4	31	35	40	45	510592	4842832	396

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-226	NP	21	25	4	31	35	40	45	510593	4842815	396
R-227	NP	22	26	4	31	35	40	45	510595	4843220	395
R-228	NP	38	40	3	41	41	43	46	510606	4854472	410
R-229	NP	22	26	4	31	35	40	45	510607	4843280	395
R-230	NP	22	26	4	31	35	40	45	510615	4843220	395
R-231	NP	21	25	4	31	35	40	45	510627	4843289	395
R-232	NP	22	26	4	31	35	40	45	510628	4843072	398
R-233	NP	24	27	3	32	36	40	45	510629	4859729	403
R-234	NP	25	28	3	32	36	40	45	510631	4859579	400
R-235	NP	22	26	4	31	35	40	45	510632	4842972	397
R-236	NP	22	26	4	31	35	40	45	510633	4843021	398
R-237	NP	21	25	4	31	35	40	45	510634	4843161	396
R-238	NP	24	27	3	32	36	40	45	510634	4859652	402
R-239	NP	22	26	4	31	35	40	45	510635	4842922	397
R-240	NP	22	26	4	31	35	40	45	510635	4843046	398
R-241	NP	21	26	4	31	35	40	45	510636	4843119	397
R-242	NP	20	25	4	31	35	40	45	510637	4842788	395
R-243	NP	21	25	4	31	35	40	45	510637	4842815	396
R-244	NP	21	25	4	31	35	40	45	510638	4842846	396
R-245	NP	21	25	4	31	35	40	45	510644	4843180	396
R-246	NP	29	32	3	34	37	41	45	510651	4858039	402
R-247	NP	22	26	4	31	35	40	45	510651	4842870	396
R-248	NP	21	26	4	31	35	40	45	510654	4843292	395
R-249	NP	21	26	4	31	35	40	45	510654	4843121	397
R-250	NP	22	26	4	31	35	40	45	510660	4842974	397
R-251	NP	23	27	3	32	36	40	45	510663	4844806	391

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-252	NP	22	26	4	31	36	40	45	510664	4843071	398
R-253	NP	21	26	4	31	35	40	45	510668	4843219	396
R-254	NP	21	26	4	31	35	40	45	510670	4843123	397
R-255	NP	22	26	4	31	35	40	45	510670	4842917	396
R-256	NP	22	26	4	31	36	40	45	510672	4843021	397
R-257	NP	22	25	4	31	35	40	45	510674	4842742	394
R-258	NP	21	25	4	31	35	40	45	510675	4842784	395
R-259	NP	29	31	3	34	37	41	45	510675	4848743	404
R-260	NP	22	26	4	31	35	40	45	510689	4842822	396
R-261	NP	22	26	4	31	35	40	45	510689	4842842	396
R-262	NP	22	26	4	31	35	40	45	510689	4842871	396
R-263	NP	26	29	3	32	36	40	45	510691	4846939	404
R-264	NP	21	25	4	31	35	40	45	510691	4843288	395
R-265	NP	39	41	2	42	42	44	47	510691	4855269	408
R-266	NP	21	25	4	31	35	40	45	510692	4842795	395
R-267	NP	21	25	4	31	35	40	45	510693	4843224	396
R-268	NP	22	26	4	31	35	40	45	510693	4843179	396
R-269	NP	22	26	4	31	36	40	45	510693	4842916	396
R-270	NP	21	25	4	31	35	40	45	510693	4842742	394
R-271	NP	22	26	4	31	35	40	45	510693	4843159	397
R-272	NP	22	26	4	31	36	40	45	510693	4843015	397
R-273	NP	21	25	4	31	35	40	45	510694	4843264	396
R-274	NP	22	26	4	31	35	40	45	510695	4842942	396
R-275	NP	22	26	4	31	36	40	45	510695	4843120	398
R-276	NP	21	25	4	31	35	40	45	510722	4842742	394
R-277	P	42	44	2	45	45	46	48	510723	4852072	413

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-278	NP	22	26	4	31	36	40	45	510730	4843078	398
R-279	NP	22	26	4	31	35	40	45	510732	4842975	396
R-280	NP	22	25	4	31	35	40	45	510732	4843163	397
R-281	NP	22	26	4	31	35	40	45	510732	4842876	396
R-282	NP	22	26	4	31	35	40	45	510733	4842935	396
R-283	NP	22	26	4	31	35	40	45	510734	4843050	398
R-284	NP	22	26	4	31	35	40	45	510734	4843018	397
R-285	NP	21	25	4	31	35	40	45	510734	4843175	397
R-286	NP	22	26	4	31	35	40	45	510735	4843033	397
R-287	NP	22	26	4	31	35	40	45	510735	4842810	395
R-288	NP	22	26	4	31	35	40	45	510735	4842842	395
R-289	NP	22	26	4	31	35	40	45	510736	4842914	396
R-290	NP	22	26	4	31	35	40	45	510736	4842796	395
R-291	NP	21	25	4	31	35	40	45	510737	4843220	396
R-292	NP	22	26	4	31	35	40	45	510738	4842774	394
R-293	NP	22	26	4	31	36	40	45	510739	4843126	398
R-294	NP	21	25	4	31	35	40	45	510740	4843275	396
R-295	NP	20	25	4	31	35	40	45	510747	4843231	396
R-296	NP	22	26	4	31	35	40	45	510747	4842975	396
R-297	NP	21	25	4	31	35	40	45	510747	4843180	397
R-298	NP	22	26	4	31	36	40	45	510749	4843076	398
R-299	NP	36	38	3	39	40	42	46	510756	4856731	403
R-300	NP	22	26	4	31	35	40	45	510768	4843019	397
R-301	NP	22	26	4	31	35	40	45	510768	4843072	398
R-302	NP	21	25	4	31	35	40	45	510768	4843179	397
R-303	NP	22	26	4	31	35	40	45	510770	4842973	396

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-304	NP	22	26	4	31	35	40	45	510778	4842868	394
R-305	NP	26	29	3	33	36	40	45	510780	4858937	399
R-306	NP	21	26	4	31	35	40	45	510781	4843124	398
R-307	NP	22	26	4	31	35	40	45	510789	4843018	397
R-308	NP	20	25	5	31	35	40	45	510789	4843221	397
R-309	NP	21	26	4	31	35	40	45	510790	4843074	398
R-310	NP	21	25	5	31	35	40	45	510794	4843162	398
R-311	NP	22	26	4	31	35	40	45	510807	4842974	396
R-312	NP	22	26	4	31	36	40	45	510811	4843074	398
R-313	NP	22	26	4	31	35	40	45	510816	4843019	397
R-314	NP	22	26	4	31	35	40	45	510819	4842921	395
R-315	NP	22	26	4	31	36	40	45	510821	4843160	398
R-316	NP	22	26	4	31	36	40	45	510823	4843178	398
R-317	NP	22	26	4	31	35	40	45	510825	4842973	396
R-318	NP	22	26	4	31	35	40	45	510825	4843073	398
R-319	NP	22	26	4	31	35	40	45	510825	4843038	397
R-320	NP	22	26	4	32	36	40	45	510826	4843122	398
R-321	NP	22	26	4	32	36	40	45	510847	4843243	398
R-322	NP	22	26	4	31	35	40	45	510851	4842856	393
R-323	NP	22	26	4	31	35	40	45	510862	4842976	396
R-324	NP	22	26	4	32	36	40	45	510864	4843181	399
R-325	NP	22	26	4	32	36	40	45	510864	4843157	399
R-326	NP	22	26	4	31	36	40	45	510865	4843074	398
R-327	NP	22	26	4	31	36	40	45	510865	4843015	397
R-328	NP	22	26	4	32	36	40	45	510866	4843121	399
R-329	NP	22	26	4	31	35	40	45	510867	4842927	395

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-330	NP	22	26	4	32	36	40	45	510870	4843223	398
R-331	NP	22	26	4	31	36	40	45	510870	4843035	397
R-332	NP	22	26	4	31	36	40	45	510880	4842974	396
R-333	NP	22	26	4	31	36	40	45	510892	4843078	398
R-334	NP	22	26	4	31	36	40	45	510899	4842975	395
R-335	NP	22	26	4	31	36	40	45	510903	4843015	396
R-336	NP	22	26	4	31	36	40	45	510906	4842956	395
R-337	NP	22	26	4	32	36	40	45	510909	4843125	398
R-338	NP	22	27	4	32	36	40	45	510911	4843176	399
R-339	NP	22	26	4	31	36	40	45	510916	4843077	397
R-340	NP	22	26	4	31	36	40	45	510919	4842978	395
R-341	NP	22	27	4	32	36	40	45	510919	4843223	398
R-342	NP	22	26	4	32	36	40	45	510924	4843016	396
R-343	NP	22	26	4	31	36	40	45	510935	4843078	397
R-344	NP	22	27	4	32	36	40	45	510937	4843122	398
R-345	NP	22	27	4	32	36	40	45	510939	4843177	398
R-346	NP	23	27	4	32	36	40	45	510958	4843221	398
R-347	NP	23	27	4	32	36	40	45	510972	4843176	398
R-348	NP	32	35	3	36	38	41	45	510976	4849754	399
R-349	NP	23	26	4	32	36	40	45	510994	4843124	397
R-350	NP	23	27	4	32	36	40	45	511026	4843227	397
R-351	NP	23	26	3	31	36	40	45	511045	4843069	395
R-352	NP	23	27	4	32	36	40	45	511061	4843224	397
R-353	NP	22	26	4	31	36	40	45	511064	4843174	397
R-354	NP	23	26	4	31	36	40	45	511065	4843130	396
R-355	NP	23	27	4	32	36	40	45	511092	4843224	397

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-356	NP	22	26	4	32	36	40	45	511120	4843169	397
R-357	NP	23	27	4	32	36	40	45	511121	4843225	397
R-358	NP	26	29	3	33	36	40	45	511131	4846890	406
R-359	NP	32	35	3	36	38	41	45	511146	4857089	400
R-360	NP	23	27	4	32	36	40	45	511151	4843170	398
R-361	NP	23	27	4	32	36	40	45	511153	4843224	397
R-362	NP	25	29	3	32	36	40	45	511165	4847134	408
R-363	NP	23	27	4	32	36	40	45	511181	4843175	397
R-364	NP	23	27	4	32	36	40	45	511182	4843224	397
R-365	NP	29	31	3	34	37	41	45	511196	4848728	399
R-366	NP	22	26	4	31	36	40	45	511210	4843174	397
R-367	NP	23	27	3	32	36	40	45	511211	4843223	398
R-368	NP	25	27	3	32	36	40	45	511212	4859535	401
R-369	NP	24	28	4	32	36	40	45	511219	4843652	394
R-370	NP	28	31	3	34	36	41	45	511225	4858161	406
R-371	NP	23	27	4	32	36	40	45	511235	4843225	398
R-372	NP	23	26	4	32	36	40	45	511240	4843177	397
R-373	NP	23	26	3	32	36	40	45	511258	4843144	397
R-374	NP	23	27	3	32	36	40	45	511269	4843125	397
R-375	NP	23	27	3	32	36	40	45	511300	4843124	397
R-376	NP	24	27	4	32	36	40	45	511305	4843174	398
R-377	NP	36	39	3	39	40	42	46	511355	4855113	403
R-378	NP	23	26	3	31	36	40	45	511357	4842124	396
R-379	NP	24	28	4	32	36	40	45	511362	4843497	396
R-380	NP	36	38	3	39	40	42	46	511365	4855488	404
R-381	NP	24	27	4	32	36	40	45	511369	4843206	399

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-382	NP	24	27	3	32	36	40	45	511385	4860108	407
R-383	NP	24	27	3	32	36	40	45	511385	4860155	408
R-384	NP	24	28	3	32	36	40	45	511388	4844296	399
R-385	NP	24	27	3	32	36	40	45	511389	4843094	397
R-386	NP	24	27	3	32	36	40	45	511423	4860110	407
R-387	NP	32	35	3	36	38	41	45	511438	4849674	404
R-388	NP	34	36	3	37	39	41	46	511456	4856435	400
R-389	NP	24	27	3	32	36	40	45	511459	4860108	407
R-390	NP	24	27	3	32	36	40	45	511463	4860159	409
R-391	NP	24	27	3	32	36	40	45	511488	4860156	408
R-392	NP	24	27	3	32	36	40	45	511491	4860108	407
R-393	NP	24	27	3	32	36	40	45	511493	4860074	406
R-394	NP	24	27	3	32	36	40	45	511494	4859981	405
R-395	NP	24	27	3	32	36	40	45	511496	4860044	406
R-396	NP	24	26	3	32	36	40	45	511497	4860012	405
R-397	NP	25	27	3	32	36	40	45	511518	4859984	406
R-398	NP	24	27	3	32	36	40	45	511540	4860073	407
R-399	NP	24	27	3	32	36	40	45	511540	4860154	408
R-400	NP	24	27	3	32	36	40	45	511542	4860029	407
R-401	NP	23	26	3	31	35	40	45	511545	4860106	407
R-402	NP	24	28	4	32	36	40	45	511557	4842929	398
R-403	NP	24	27	3	32	36	40	45	511566	4860074	408
R-404	NP	24	27	3	32	36	40	45	511570	4860151	408
R-405	NP	23	26	3	32	36	40	45	511572	4860106	408
R-406	NP	25	27	3	32	36	40	45	511575	4860027	408
R-407	NP	24	27	3	32	36	40	45	511581	4859986	407

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-408	P	45	47	2	47	47	48	49	511596	4853166	418
R-409	NP	25	27	3	32	36	40	45	511598	4860074	408
R-410	NP	24	27	3	32	36	40	45	511600	4860155	408
R-411	NP	24	27	3	32	36	40	45	511602	4860111	408
R-412	NP	25	27	3	32	36	40	45	511603	4860027	409
R-413	NP	25	27	3	32	36	40	45	511614	4859986	408
R-414	NP	24	27	3	32	36	40	45	511631	4860077	408
R-415	NP	25	27	3	32	36	40	45	511632	4860110	408
R-416	NP	25	27	3	32	36	40	45	511632	4860021	409
R-417	NP	24	27	3	32	36	40	45	511634	4860155	408
R-418	NP	25	27	3	32	36	40	45	511646	4859987	408
R-419	NP	25	27	3	32	36	40	45	511651	4860051	408
R-420	NP	24	27	3	32	36	40	45	511662	4860151	408
R-421	NP	28	31	3	33	36	40	45	511665	4858348	408
R-422	NP	25	27	3	32	36	40	45	511666	4860110	408
R-423	NP	25	28	3	32	36	40	45	511686	4859820	403
R-424	NP	25	28	3	32	36	40	45	511686	4859794	403
R-425	NP	24	27	3	32	36	40	45	511690	4860077	407
R-426	NP	25	27	3	32	36	40	45	511693	4859998	408
R-427	NP	23	26	3	32	36	40	45	511696	4860034	407
R-428	NP	25	27	3	32	36	40	45	511723	4860157	408
R-429	NP	25	28	3	32	36	40	45	511730	4859753	403
R-430	NP	25	28	3	32	36	40	45	511731	4859805	403
R-431	NP	25	28	3	32	36	40	45	511734	4859893	406
R-432	NP	25	28	3	32	36	40	45	511737	4859849	404
R-433	NP	25	28	3	32	36	40	45	511746	4859753	403

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-434	NP	32	34	3	36	38	41	45	511759	4856808	401
R-435	NP	25	28	3	32	36	40	45	511761	4859848	404
R-436	NP	25	28	3	32	36	40	45	511769	4859754	402
R-437	NP	25	28	3	32	36	40	45	511795	4859848	403
R-438	NP	25	28	3	32	36	40	45	511799	4859806	403
R-439	NP	25	28	3	32	36	40	45	511804	4859760	402
R-440	NP	25	28	3	32	36	40	45	511805	4859896	404
R-441	NP	25	28	3	32	36	40	45	511851	4859857	402
R-442	NP	28	31	3	34	36	41	45	511853	4857958	406
R-443	NP	32	35	3	36	38	41	45	511869	4856603	400
R-444	NP	25	28	3	32	36	40	45	511892	4859763	402
R-445	NP	25	28	3	32	36	40	45	511893	4859808	402
R-446	NP	24	27	3	32	36	40	45	511911	4859756	402
R-447	NP	24	27	3	32	36	40	45	511912	4859854	402
R-448	NP	23	26	3	31	36	40	45	511967	4840578	391
R-449	P	42	44	2	44	45	45	48	511985	4853988	412
R-450	P	44	46	2	46	46	47	49	512008	4853041	418
R-451	NP	28	30	3	33	36	40	45	512020	4858428	408
R-452	NP	40	42	2	43	43	44	47	512064	4850759	409
R-453	NP	30	33	3	35	37	41	45	512064	4848582	412
R-454	NP	28	31	3	33	36	40	45	512083	4845340	411
R-455	NP	27	30	3	33	36	40	45	512084	4846533	399
R-456	NP	24	27	3	32	36	40	45	512110	4840105	394
R-457	NP	27	29	3	33	36	40	45	512113	4859162	408
R-458	NP	26	29	3	32	36	40	45	512122	4858801	409
R-459	NP	27	30	3	33	36	40	45	512122	4858747	411

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-460	NP	25	28	3	32	36	40	45	512122	4858830	408
R-461	NP	26	29	3	33	36	40	45	512123	4858775	410
R-462	NP	25	27	3	32	36	40	45	512144	4859451	405
R-463	NP	39	42	2	42	43	44	47	512148	4850757	410
R-464	NP	44	46	2	46	46	47	48	512150	4853106	419
R-465	NP	25	27	3	32	36	40	45	512152	4859406	405
R-466	NP	27	29	3	33	36	40	45	512153	4859203	408
R-467	NP	32	35	3	36	38	41	45	512154	4849346	403
R-468	NP	27	29	3	33	36	40	45	512154	4859175	408
R-469	NP	29	32	3	34	37	41	45	512157	4847231	412
R-470	NP	27	29	3	33	36	40	45	512158	4859034	408
R-471	NP	32	35	3	36	38	41	45	512159	4849522	403
R-472	NP	27	29	3	33	36	40	45	512161	4859093	408
R-473	NP	27	29	3	33	36	40	45	512164	4859131	408
R-474	NP	27	30	3	33	36	40	45	512165	4858749	411
R-475	NP	26	29	3	32	36	40	45	512166	4858772	410
R-476	NP	25	28	3	32	36	40	45	512168	4858808	409
R-477	NP	25	28	3	32	36	40	45	512170	4859450	405
R-478	NP	26	29	3	33	36	40	45	512174	4844607	402
R-479	NP	39	41	2	41	42	44	46	512176	4854334	411
R-480	NP	24	27	3	32	36	40	45	512178	4840109	393
R-481	NP	26	28	3	32	36	40	45	512196	4859446	405
R-482	NP	21	25	3	31	35	40	45	512197	4837845	392
R-483	NP	27	29	3	33	36	40	45	512197	4859178	408
R-484	NP	24	27	3	32	36	40	45	512197	4839402	402
R-485	NP	26	29	3	32	36	40	45	512199	4842910	401

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-486	NP	25	28	3	32	36	40	45	512200	4859899	407
R-487	NP	27	29	3	33	36	40	45	512200	4859213	408
R-488	NP	25	28	3	32	36	40	45	512201	4859462	405
R-489	NP	26	29	3	33	36	40	45	512201	4859304	407
R-490	NP	25	28	3	32	36	40	45	512202	4859885	407
R-491	NP	27	29	3	33	36	40	45	512202	4859132	408
R-492	NP	26	29	3	33	36	40	45	512202	4859084	408
R-493	NP	27	29	3	33	36	40	45	512203	4859260	408
R-494	NP	26	29	3	32	36	40	45	512203	4858804	410
R-495	NP	27	30	3	33	36	40	45	512203	4858776	411
R-496	NP	25	28	3	32	36	40	45	512203	4858838	409
R-497	NP	27	30	3	33	36	40	45	512203	4858745	411
R-498	NP	24	27	3	32	36	40	45	512203	4859497	404
R-499	NP	27	29	3	33	36	40	45	512204	4858897	409
R-500	NP	27	29	3	33	36	40	45	512204	4858928	409
R-501	NP	27	29	3	33	36	40	45	512204	4858987	408
R-502	NP	27	29	3	33	36	40	45	512204	4858953	409
R-503	NP	27	29	2	33	36	40	45	512204	4859029	408
R-504	NP	25	28	3	32	36	40	45	512204	4859347	406
R-505	NP	25	27	3	32	36	40	45	512204	4840569	393
R-506	NP	26	29	3	32	36	40	45	512204	4858867	409
R-507	NP	26	29	3	32	36	40	45	512204	4859156	408
R-508	NP	25	28	3	32	36	40	45	512205	4859398	405
R-509	NP	23	26	3	32	36	40	45	512210	4838765	398
R-510	NP	23	26	3	31	36	40	45	512214	4838651	397
R-511	NP	25	27	3	32	36	40	45	512226	4840717	394

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-512	NP	26	29	3	32	36	40	45	512246	4859600	404
R-513	NP	26	29	3	33	36	40	45	512249	4858979	409
R-514	NP	27	29	2	33	36	40	45	512251	4859248	406
R-515	NP	27	29	2	33	36	40	45	512251	4859047	408
R-516	NP	27	29	3	33	36	40	45	512251	4858954	409
R-517	NP	27	29	3	33	36	40	45	512252	4859019	409
R-518	NP	26	29	3	32	36	40	45	512252	4859097	408
R-519	NP	27	29	2	33	36	40	45	512252	4859069	408
R-520	NP	27	29	3	33	36	40	45	512252	4859301	406
R-521	NP	26	29	3	32	36	40	45	512252	4859365	406
R-522	NP	27	29	2	33	36	40	45	512252	4859212	407
R-523	NP	25	28	3	32	36	40	45	512252	4859443	404
R-524	NP	26	29	3	32	36	40	45	512252	4858932	409
R-525	NP	26	29	3	33	36	40	45	512253	4858837	410
R-526	NP	26	29	3	32	36	40	45	512253	4859347	406
R-527	NP	27	29	3	33	36	40	45	512253	4859267	406
R-528	NP	27	30	3	33	36	40	45	512253	4858809	411
R-529	NP	25	28	3	32	36	40	45	512253	4859401	405
R-530	NP	27	29	2	33	36	40	45	512254	4859131	407
R-531	NP	27	29	2	33	36	40	45	512254	4859184	407
R-532	NP	27	29	2	33	36	40	45	512254	4859164	407
R-533	NP	27	30	3	33	36	40	45	512255	4858904	410
R-534	NP	28	31	3	33	36	41	45	512257	4846482	400
R-535	NP	27	30	3	33	36	40	45	512257	4858729	412
R-536	NP	27	30	3	33	36	40	45	512258	4858767	411
R-537	NP	27	30	3	33	36	40	45	512258	4858743	412

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-538	NP	27	30	3	33	36	40	45	512258	4858754	411
R-539	NP	27	29	3	33	36	40	45	512258	4858876	410
R-540	NP	27	30	3	33	36	40	45	512259	4858790	411
R-541	NP	26	29	3	32	36	40	45	512264	4859600	404
R-542	NP	26	28	3	32	36	40	45	512268	4859850	408
R-543	NP	26	29	3	32	36	40	45	512286	4859601	405
R-544	NP	26	28	3	32	36	40	45	512288	4859802	407
R-545	NP	26	29	3	33	36	40	45	512292	4858985	409
R-546	NP	28	31	3	33	36	40	45	512295	4845678	408
R-547	NP	26	29	3	33	36	40	45	512299	4842991	400
R-548	NP	27	29	3	33	36	40	45	512300	4859350	406
R-549	NP	25	28	3	32	36	40	45	512300	4859427	404
R-550	NP	25	28	3	32	36	40	45	512301	4859388	405
R-551	NP	25	28	3	32	36	40	45	512301	4859413	404
R-552	NP	26	29	3	32	36	40	45	512302	4859601	405
R-553	NP	27	29	3	33	36	40	45	512302	4859011	408
R-554	NP	27	30	3	33	36	40	45	512303	4858739	412
R-555	NP	27	29	3	33	36	40	45	512303	4859249	406
R-556	NP	26	29	3	33	36	40	45	512304	4858839	411
R-557	NP	27	30	3	33	36	40	45	512304	4858812	411
R-558	NP	27	29	3	33	36	40	45	512304	4858824	411
R-559	NP	26	29	3	32	36	40	45	512304	4859368	406
R-560	NP	27	30	3	33	36	40	45	512304	4858777	412
R-561	NP	27	29	2	33	36	40	45	512304	4859078	408
R-562	NP	27	29	3	33	36	40	45	512304	4859096	408
R-563	NP	26	29	3	32	36	40	45	512304	4859272	406

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-564	NP	27	30	3	33	36	40	45	512305	4858801	412
R-565	NP	27	30	3	33	36	40	45	512305	4858787	412
R-566	NP	27	30	3	33	36	40	45	512305	4858724	412
R-567	NP	27	30	3	33	36	40	45	512305	4858762	412
R-568	NP	27	29	3	33	36	40	45	512305	4859210	406
R-569	NP	26	29	3	32	36	40	45	512305	4859188	406
R-570	NP	27	30	3	33	36	40	45	512305	4858876	411
R-571	NP	27	29	3	33	36	40	45	512305	4859300	406
R-572	NP	27	30	3	33	36	40	45	512306	4858751	412
R-573	NP	26	29	3	32	36	40	45	512307	4858953	409
R-574	NP	26	29	3	32	36	40	45	512307	4859041	408
R-575	NP	26	29	3	32	36	40	45	512307	4859167	406
R-576	NP	26	29	3	32	36	40	45	512308	4859133	407
R-577	NP	43	45	2	45	46	46	48	512339	4851957	418
R-578	NP	26	29	3	32	36	40	45	512340	4859606	406
R-579	NP	27	29	2	32	36	40	45	512342	4859350	405
R-580	NP	27	29	3	33	36	40	45	512346	4859273	406
R-581	NP	26	29	3	32	36	40	45	512346	4859331	405
R-582	NP	26	29	3	32	36	40	45	512347	4859292	406
R-583	NP	27	29	2	32	36	40	45	512347	4859250	406
R-584	NP	25	28	3	32	36	40	45	512347	4859372	405
R-585	NP	25	28	3	32	36	40	45	512347	4859407	404
R-586	NP	26	29	3	32	36	40	45	512348	4859187	406
R-587	NP	26	29	3	32	36	40	45	512348	4859312	405
R-588	NP	26	29	3	32	36	40	45	512348	4859167	406
R-589	NP	26	29	3	32	36	40	45	512349	4859432	404

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-590	NP	26	29	3	32	36	40	45	512349	4859040	408
R-591	NP	26	29	3	32	36	40	45	512350	4859062	408
R-592	NP	26	28	3	32	36	40	45	512350	4859148	406
R-593	NP	26	29	3	32	36	40	45	512350	4858924	410
R-594	NP	26	29	3	32	36	40	45	512350	4859131	407
R-595	NP	26	29	3	32	36	40	45	512350	4859210	406
R-596	NP	26	29	3	32	36	40	45	512350	4859015	408
R-597	NP	26	28	3	32	36	40	45	512350	4858977	409
R-598	NP	26	29	3	32	36	40	45	512351	4859089	407
R-599	NP	27	30	3	33	36	40	45	512351	4858885	410
R-600	NP	27	30	3	33	36	40	45	512352	4858744	412
R-601	NP	27	29	3	33	36	40	45	512352	4858815	412
R-602	NP	27	30	3	33	36	40	45	512353	4858730	412
R-603	NP	27	30	3	33	36	40	45	512354	4858786	412
R-604	NP	27	30	3	33	36	40	45	512354	4858758	412
R-605	NP	27	29	3	33	36	40	45	512357	4858828	411
R-606	NP	27	30	3	33	36	40	45	512357	4858801	412
R-607	NP	27	30	3	33	36	40	45	512358	4858773	412
R-608	NP	27	29	3	33	36	40	45	512362	4858840	411
R-609	NP	26	29	3	32	36	40	45	512363	4859603	406
R-610	NP	26	28	3	32	36	40	45	512365	4859752	408
R-611	NP	26	29	3	32	36	40	45	512378	4859254	405
R-612	NP	26	29	3	32	36	40	45	512380	4859750	408
R-613	NP	26	29	3	32	36	40	45	512381	4859604	407
R-614	NP	26	29	3	32	36	40	45	512395	4859212	405
R-615	NP	28	30	3	33	36	40	45	512395	4858729	412

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-616	NP	27	30	3	33	36	40	45	512395	4858757	412
R-617	NP	26	29	3	32	36	40	45	512395	4859749	408
R-618	NP	26	29	3	33	36	40	45	512395	4858837	411
R-619	NP	27	29	2	32	36	40	45	512396	4859258	405
R-620	NP	27	30	3	33	36	40	45	512396	4858784	412
R-621	NP	27	30	3	33	36	40	45	512396	4858769	412
R-622	NP	26	29	3	32	36	40	45	512396	4859604	407
R-623	NP	27	30	3	33	36	40	45	512397	4858798	412
R-624	NP	28	30	3	33	36	40	45	512398	4858743	412
R-625	NP	25	28	3	32	36	40	45	512399	4858981	408
R-626	NP	26	28	3	32	36	40	45	512399	4859135	406
R-627	NP	25	28	3	32	36	40	45	512400	4859017	408
R-628	NP	26	28	3	32	36	40	45	512401	4859099	407
R-629	NP	25	28	3	32	36	40	45	512401	4858921	409
R-630	NP	25	28	3	32	36	40	45	512402	4859046	407
R-631	NP	25	28	3	32	36	40	45	512403	4858955	409
R-632	NP	25	28	3	32	36	40	45	512404	4859162	406
R-633	NP	26	29	2	32	36	40	45	512406	4859298	405
R-634	NP	26	29	3	32	36	40	45	512420	4859255	405
R-635	NP	26	29	3	32	36	40	45	512432	4859603	407
R-636	NP	26	28	3	32	36	40	45	512432	4859845	409
R-637	NP	26	29	3	32	36	40	45	512432	4859550	406
R-638	NP	26	28	3	32	36	40	45	512434	4859804	409
R-639	NP	26	29	3	32	36	40	45	512434	4859503	405
R-640	NP	25	28	3	32	36	40	45	512436	4859750	408
R-641	NP	26	29	3	32	36	40	45	512437	4859650	408

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-642	NP	26	29	3	32	36	40	45	512437	4859696	408
R-643	NP	25	28	3	32	36	40	45	512439	4859018	407
R-644	NP	26	28	3	32	36	40	45	512442	4859055	407
R-645	NP	26	29	3	32	36	40	45	512444	4859133	407
R-646	NP	26	28	3	32	36	40	45	512444	4859165	406
R-647	NP	27	29	3	33	36	40	45	512445	4858909	410
R-648	NP	25	28	3	32	36	40	45	512446	4859206	405
R-649	NP	27	29	3	33	36	40	45	512446	4859097	407
R-650	NP	25	28	3	32	36	40	45	512446	4859183	406
R-651	NP	25	28	3	32	36	40	45	512447	4858975	408
R-652	NP	25	28	3	32	36	40	45	512447	4858937	410
R-653	NP	26	29	3	32	36	40	45	512449	4859808	409
R-654	NP	28	30	3	33	36	40	45	512449	4858747	413
R-655	NP	28	30	3	33	36	40	45	512450	4858772	412
R-656	NP	27	29	3	33	36	40	45	512450	4858807	412
R-657	NP	25	28	3	32	36	40	45	512450	4859900	409
R-658	NP	26	29	3	32	36	40	45	512450	4859666	408
R-659	NP	28	30	3	33	36	40	45	512451	4858758	413
R-660	NP	26	29	3	32	36	40	45	512451	4859601	407
R-661	NP	26	29	3	32	36	40	45	512451	4859545	405
R-662	NP	27	30	3	33	36	40	45	512451	4858785	412
R-663	NP	26	29	3	32	36	40	45	512451	4859566	407
R-664	NP	28	30	3	33	36	40	45	512451	4858732	413
R-665	NP	26	28	3	32	36	40	45	512452	4859845	409
R-666	NP	26	29	3	32	36	40	45	512453	4858879	411
R-667	NP	26	29	3	33	36	40	45	512454	4858824	412

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-668	P	32	34	3	36	38	41	45	512456	4856448	402
R-669	NP	26	29	3	32	36	40	45	512456	4859751	409
R-670	NP	26	29	3	32	36	40	45	512457	4858842	411
R-671	NP	24	27	3	32	36	40	45	512464	4859900	409
R-672	NP	26	29	3	32	36	40	45	512467	4859546	406
R-673	NP	26	29	3	32	36	40	45	512467	4859654	408
R-674	NP	26	29	3	32	36	40	45	512467	4859695	408
R-675	NP	26	29	3	32	36	40	45	512468	4859503	404
R-676	NP	26	29	3	32	36	40	45	512471	4859798	409
R-677	NP	26	29	3	32	36	40	45	512472	4859606	407
R-678	NP	25	27	3	32	36	40	45	512478	4859901	409
R-679	NP	26	29	3	32	36	40	45	512480	4859753	409
R-680	NP	26	29	3	32	36	40	45	512481	4859544	405
R-681	NP	26	28	3	32	36	40	45	512483	4859846	409
R-682	NP	26	29	3	32	36	40	45	512486	4859802	409
R-683	NP	26	29	3	33	36	40	45	512488	4859497	404
R-684	NP	26	29	3	32	36	40	45	512489	4859696	408
R-685	NP	26	28	3	32	36	40	45	512490	4859091	407
R-686	NP	26	29	3	32	36	40	45	512491	4859649	407
R-687	NP	26	28	3	32	36	40	45	512491	4859138	406
R-688	NP	26	29	3	32	36	40	45	512498	4859544	405
R-689	NP	26	29	3	32	36	40	45	512499	4859603	407
R-690	NP	26	29	3	32	36	40	45	512500	4859801	409
R-691	NP	25	28	3	32	36	40	45	512507	4859901	410
R-692	NP	23	26	3	31	35	40	45	512508	4859974	408
R-693	NP	23	26	3	31	35	40	45	512508	4859974	408

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-694	NP	23	26	3	31	35	40	45	512508	4859974	408
R-695	NP	23	26	3	31	35	40	45	512508	4860034	408
R-696	NP	23	26	3	31	35	40	45	512508	4860034	408
R-697	NP	23	26	3	31	35	40	45	512508	4860034	408
R-698	NP	25	28	3	32	36	40	45	512509	4859021	407
R-699	NP	23	26	3	31	35	40	45	512509	4860005	408
R-700	NP	23	26	3	31	35	40	45	512509	4860005	408
R-701	NP	23	26	3	31	35	40	45	512509	4860005	408
R-702	NP	26	29	3	32	36	40	45	512511	4859695	408
R-703	NP	26	29	3	32	36	40	45	512511	4859753	409
R-704	NP	26	29	3	32	36	40	45	512512	4859648	407
R-705	NP	26	29	3	32	36	40	45	512512	4858876	411
R-706	NP	25	28	3	32	36	40	45	512513	4859091	407
R-707	NP	26	28	3	32	36	40	45	512514	4859847	410
R-708	NP	26	29	3	33	36	40	45	512514	4859503	404
R-709	NP	25	28	3	32	36	40	45	512516	4858981	408
R-710	NP	26	29	3	32	36	40	45	512516	4859603	407
R-711	NP	26	29	3	32	36	40	45	512516	4859804	409
R-712	NP	28	30	3	33	36	40	45	512518	4858217	411
R-713	NP	26	29	3	33	36	40	45	512519	4859543	405
R-714	NP	26	29	3	32	36	40	45	512550	4859848	411
R-715	NP	26	29	3	32	36	40	45	512551	4859881	411
R-716	NP	26	29	3	32	36	40	45	512553	4859603	406
R-717	NP	26	29	3	32	36	40	45	512553	4859646	406
R-718	NP	26	29	3	33	36	40	45	512553	4859547	405
R-719	NP	28	30	3	33	36	40	45	512554	4858655	414

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-720	NP	26	29	3	32	36	40	45	512554	4859697	408
R-721	NP	25	28	3	32	36	40	45	512555	4859899	411
R-722	NP	28	30	3	33	36	40	45	512556	4858609	414
R-723	NP	23	26	3	31	35	40	45	512556	4860165	407
R-724	NP	28	30	3	33	36	40	45	512556	4858637	414
R-725	NP	27	30	3	33	36	40	45	512557	4858673	414
R-726	NP	26	29	3	32	36	40	45	512557	4859749	409
R-727	NP	26	29	3	32	36	40	45	512558	4859799	410
R-728	NP	26	29	3	32	36	40	45	512567	4859847	411
R-729	NP	25	28	3	32	36	40	45	512577	4859898	411
R-730	NP	26	29	3	32	36	40	45	512577	4859649	406
R-731	NP	26	29	3	32	36	40	45	512580	4859798	410
R-732	NP	26	29	3	32	36	40	45	512580	4859694	407
R-733	NP	26	29	3	33	36	40	45	512581	4859603	406
R-734	NP	26	29	3	33	36	40	45	512587	4859543	405
R-735	NP	24	27	3	32	36	40	45	512589	4860163	408
R-736	NP	26	29	3	32	36	40	45	512589	4859749	409
R-737	NP	26	29	3	32	36	40	45	512593	4859852	411
R-738	NP	26	29	3	32	36	40	45	512595	4859895	411
R-739	NP	26	29	3	32	36	40	45	512596	4859797	410
R-740	NP	26	29	3	33	36	40	45	512603	4859603	406
R-741	NP	26	29	3	32	36	40	45	512604	4859694	407
R-742	NP	26	29	3	32	36	40	45	512605	4859646	406
R-743	NP	32	34	3	36	38	41	45	512610	4856414	403
R-744	NP	25	28	3	32	36	40	45	512612	4859901	411
R-745	NP	22	26	3	31	35	40	45	512617	4860167	408

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-746	NP	28	30	3	33	36	40	45	512617	4858608	414
R-747	NP	27	30	3	33	36	40	45	512617	4858676	414
R-748	NP	26	29	3	32	36	40	45	512617	4859798	410
R-749	NP	28	30	3	33	36	40	45	512617	4858654	414
R-750	NP	26	29	3	32	36	40	45	512617	4859848	410
R-751	NP	26	29	3	32	36	40	45	512617	4859749	408
R-752	NP	28	30	3	33	36	40	45	512618	4858636	414
R-753	NP	26	29	3	33	36	40	45	512632	4859645	406
R-754	NP	26	29	3	32	36	40	45	512634	4859693	406
R-755	NP	25	28	3	32	36	40	45	512640	4859901	411
R-756	NP	26	29	3	32	36	40	45	512642	4859753	408
R-757	NP	23	27	3	32	36	40	45	512646	4860250	409
R-758	NP	26	29	3	32	36	40	45	512646	4859798	409
R-759	NP	25	27	3	32	36	40	45	512647	4860200	409
R-760	NP	26	29	3	32	36	40	45	512648	4859846	410
R-761	NP	25	28	3	32	36	40	45	512650	4860168	409
R-762	NP	31	34	3	35	37	41	45	512651	4856802	404
R-763	NP	26	29	3	32	36	40	45	512656	4859695	406
R-764	NP	25	28	3	32	36	40	45	512657	4859900	411
R-765	NP	26	29	3	32	36	40	45	512660	4859751	408
R-766	NP	26	29	3	32	36	40	45	512671	4859897	411
R-767	NP	26	29	3	32	36	40	45	512680	4859751	408
R-768	NP	26	29	3	33	36	40	45	512684	4859645	405
R-769	NP	26	29	3	32	36	40	45	512684	4859799	409
R-770	NP	26	29	3	32	36	40	45	512685	4859847	410
R-771	NP	26	29	3	32	36	40	45	512690	4859691	406

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-772	NP	25	28	3	32	36	40	45	512694	4860117	409
R-773	NP	25	28	3	32	36	40	45	512697	4860083	410
R-774	NP	24	27	3	32	36	40	45	512698	4860247	410
R-775	NP	25	28	3	32	36	40	45	512698	4860201	410
R-776	NP	25	28	3	32	36	40	45	512700	4860164	410
R-777	NP	25	28	3	32	36	40	45	512717	4860202	410
R-778	NP	25	28	3	32	36	40	45	512718	4860121	410
R-779	NP	26	29	3	32	36	40	45	512721	4859897	410
R-780	NP	26	29	3	32	36	40	45	512722	4859801	408
R-781	NP	26	29	3	32	36	40	45	512725	4859848	409
R-782	NP	26	29	3	32	36	40	45	512725	4859765	407
R-783	NP	24	27	3	32	36	40	45	512728	4860244	411
R-784	NP	25	28	3	32	36	40	45	512729	4860163	410
R-785	NP	26	29	3	33	36	40	45	512730	4859695	406
R-786	NP	25	28	3	32	36	40	45	512732	4860083	410
R-787	NP	26	29	3	32	36	40	45	512734	4859783	408
R-788	NP	27	29	3	33	36	40	45	512735	4859602	405
R-789	NP	26	28	3	32	36	40	45	512736	4859954	411
R-790	NP	26	29	3	32	36	40	45	512744	4859897	410
R-791	NP	26	28	3	32	36	40	45	512745	4860043	410
R-792	NP	25	28	3	32	36	40	45	512748	4860121	410
R-793	NP	26	28	3	32	36	40	45	512750	4860202	411
R-794	NP	26	28	3	32	36	40	45	512751	4860162	411
R-795	NP	26	29	3	32	36	40	45	512752	4859799	408
R-796	NP	24	27	3	32	36	40	45	512753	4860244	411
R-797	NP	26	29	3	32	36	40	45	512753	4859857	409

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-798	NP	26	29	3	33	36	40	45	512758	4859752	407
R-799	NP	27	29	3	33	36	40	45	512759	4859646	405
R-800	NP	27	29	3	33	36	40	45	512761	4859599	405
R-801	NP	27	29	3	33	36	40	45	512763	4859696	406
R-802	NP	25	28	3	32	36	40	45	512765	4859957	411
R-803	NP	26	28	3	32	36	40	45	512766	4860082	411
R-804	NP	26	29	3	32	36	40	45	512766	4859898	410
R-805	NP	26	29	3	32	36	40	45	512769	4859542	405
R-806	NP	25	28	3	32	36	40	45	512771	4860121	410
R-807	NP	25	28	3	32	36	40	45	512777	4860201	411
R-808	NP	26	28	3	32	36	40	45	512777	4860038	411
R-809	NP	26	28	3	32	36	40	45	512777	4860164	411
R-810	NP	25	27	3	32	36	40	45	512778	4859413	405
R-811	NP	26	29	3	32	36	40	45	512779	4859800	407
R-812	NP	24	27	3	32	36	40	45	512786	4860245	411
R-813	NP	26	29	3	32	36	40	45	512790	4859599	406
R-814	NP	26	29	3	32	36	40	45	512792	4859751	406
R-815	NP	26	29	3	32	36	40	45	512792	4859847	408
R-816	NP	26	29	3	33	36	40	45	512793	4859549	405
R-817	NP	26	29	3	32	36	40	45	512793	4859645	406
R-818	NP	26	29	3	32	36	40	45	512794	4859898	410
R-819	NP	25	28	3	32	36	40	45	512795	4860083	411
R-820	NP	26	28	3	32	36	40	45	512801	4859488	406
R-821	NP	26	28	3	32	36	40	45	512801	4860163	411
R-822	NP	25	28	3	32	36	40	45	512801	4860202	411
R-823	NP	25	28	3	32	36	40	45	512802	4860118	411

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-824	NP	24	27	3	32	36	40	45	512809	4860245	412
R-825	NP	26	29	3	32	36	40	45	512811	4860037	411
R-826	NP	26	29	3	32	36	40	45	512812	4860006	411
R-827	NP	26	29	3	32	36	40	45	512814	4859960	411
R-828	NP	25	28	3	32	36	40	45	512818	4859374	407
R-829	NP	27	29	3	33	36	40	45	512824	4859644	406
R-830	NP	26	29	3	32	36	40	45	512825	4859898	410
R-831	NP	25	28	3	32	36	40	45	512827	4860084	412
R-832	NP	26	28	3	32	36	40	45	512829	4860164	412
R-833	NP	25	28	3	32	36	40	45	512830	4860117	411
R-834	NP	26	29	3	32	36	40	45	512832	4859480	407
R-835	NP	26	28	3	32	36	40	45	512833	4860202	412
R-836	NP	27	29	3	33	36	40	45	512835	4859597	406
R-837	NP	26	29	3	32	36	40	45	512835	4859848	408
R-838	NP	25	28	3	32	36	40	45	512836	4860243	413
R-839	NP	27	29	3	33	36	40	45	512837	4859546	406
R-840	NP	26	29	3	33	36	40	45	512839	4859799	407
R-841	NP	26	29	3	33	36	40	45	512840	4859694	406
R-842	NP	26	28	3	32	36	40	45	512840	4859747	406
R-843	NP	29	31	3	34	37	41	45	512841	4858192	415
R-844	NP	26	29	3	32	36	40	45	512846	4859898	410
R-845	NP	26	29	3	32	36	40	45	512849	4859962	411
R-846	NP	27	29	3	33	36	40	45	512850	4859648	406
R-847	NP	26	29	3	32	36	40	45	512853	4860007	412
R-848	NP	26	29	3	32	36	40	45	512853	4860036	412
R-849	NP	23	26	3	32	36	40	45	512854	4861300	413

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-850	NP	25	28	3	32	36	40	45	512858	4860117	412
R-851	NP	27	29	3	33	36	40	45	512858	4859598	407
R-852	NP	27	29	3	33	36	40	45	512861	4859486	407
R-853	NP	26	28	3	32	36	40	45	512861	4860164	412
R-854	NP	26	29	3	32	36	40	45	512861	4860086	412
R-855	NP	26	29	3	32	36	40	45	512863	4859426	407
R-856	NP	26	28	3	32	36	40	45	512863	4860201	413
R-857	NP	25	28	3	32	36	40	45	512865	4860244	413
R-858	NP	26	29	3	32	36	40	45	512866	4859693	406
R-859	NP	26	28	3	32	36	40	45	512866	4859376	407
R-860	NP	26	29	3	32	36	40	45	512867	4859897	410
R-861	NP	26	29	3	33	36	40	45	512867	4859852	408
R-862	NP	26	29	3	33	36	40	45	512868	4859799	407
R-863	NP	26	28	3	32	36	40	45	512870	4859746	406
R-864	NP	27	29	3	33	36	40	45	512872	4859541	406
R-865	P	39	41	3	42	42	44	47	512874	4851451	417
R-866	NP	27	29	3	33	36	40	45	512876	4859645	407
R-867	NP	23	26	3	31	35	40	45	512880	4861583	416
R-868	NP	26	29	3	32	36	40	45	512884	4859969	412
R-869	NP	26	29	3	32	36	40	45	512887	4859896	410
R-870	NP	26	28	3	32	36	40	45	512891	4860164	413
R-871	NP	26	28	3	32	36	40	45	512891	4860202	413
R-872	NP	25	28	3	32	36	40	45	512892	4860244	413
R-873	NP	26	29	3	32	36	40	45	512893	4859486	407
R-874	NP	26	29	3	32	36	40	45	512895	4860116	413
R-875	NP	26	29	3	32	36	40	45	512895	4860086	413

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-876	NP	25	28	3	32	36	40	45	512895	4859749	406
R-877	NP	26	29	3	32	36	40	45	512896	4860036	412
R-878	NP	26	29	3	32	36	40	45	512896	4860007	412
R-879	NP	26	29	3	32	36	40	45	512896	4859799	407
R-880	NP	27	29	3	33	36	40	45	512900	4859644	407
R-881	NP	26	29	3	33	36	40	45	512903	4859853	407
R-882	NP	27	29	3	33	36	40	45	512904	4859598	407
R-883	NP	26	29	3	33	36	40	45	512907	4859896	410
R-884	NP	26	29	3	33	36	40	45	512907	4859554	407
R-885	NP	31	33	3	35	37	41	45	512943	4847086	411
R-886	NP	26	29	3	32	36	40	45	512943	4859809	407
R-887	NP	27	29	3	33	36	40	45	512945	4859852	407
R-888	NP	27	29	3	33	36	40	45	512952	4859270	411
R-889	NP	27	29	3	33	36	40	45	512959	4859851	407
R-890	NP	26	29	3	32	36	40	45	512959	4859423	408
R-891	NP	26	29	3	33	36	40	45	512963	4859890	408
R-892	NP	26	28	3	32	36	40	45	512967	4859806	407
R-893	NP	29	32	3	34	37	41	45	512975	4858144	416
R-894	NP	26	28	3	32	36	40	45	512980	4859803	407
R-895	NP	27	29	3	33	36	40	45	512986	4859852	407
R-896	NP	41	43	2	43	44	45	47	512989	4851945	419
R-897	NP	26	29	3	32	36	40	45	512990	4860254	414
R-898	NP	22	25	3	31	35	40	45	512995	4861601	417
R-899	NP	26	28	3	32	36	40	45	512995	4859805	407
R-900	NP	28	30	3	33	36	40	45	513000	4859149	412
R-901	NP	27	29	3	33	36	40	45	513000	4859889	408

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-902	NP	27	29	2	33	36	40	45	513001	4859852	407
R-903	NP	24	27	3	32	36	40	45	513004	4861090	411
R-904	NP	26	28	3	32	36	40	45	513010	4859806	407
R-905	NP	27	29	3	33	36	40	45	513012	4859850	407
R-906	NP	32	35	3	36	38	41	45	513014	4848827	412
R-907	P	38	40	3	41	41	43	46	513041	4851178	413
R-908	NP	32	34	3	36	38	41	45	513058	4856601	403
R-909	NP	37	39	3	40	40	43	46	513222	4850326	411
R-910	NP	28	31	3	34	36	41	45	513225	4858675	413
R-911	NP	29	32	3	34	37	41	45	513283	4842925	405
R-912	NP	37	40	3	40	41	43	46	513300	4854985	412
R-913	NP	26	29	3	32	36	40	45	513325	4838886	398
R-914	NP	32	34	3	36	38	41	45	513347	4844524	414
R-915	NP	37	40	3	40	41	43	46	513411	4855123	412
R-916	NP	42	45	2	45	45	46	48	513432	4854287	410
R-917	NP	26	29	3	33	36	40	45	513478	4859879	411
R-918	NP	25	28	3	32	36	40	45	513566	4837250	401
R-919	NP	32	34	3	36	38	41	45	513576	4856730	407
R-920	P	39	41	2	42	42	44	47	513639	4850202	413
R-921	NP	32	35	3	36	38	41	45	513689	4848028	418
R-922	NP	30	33	3	35	37	41	45	513696	4843107	407
R-923	NP	26	29	3	32	36	40	45	513706	4837783	401
R-924	NP	29	31	3	34	37	41	45	513711	4841152	406
R-925	NP	29	32	3	34	37	41	45	513714	4841793	406
R-926	NP	28	30	3	33	36	40	45	513727	4839269	398
R-927	NP	27	30	3	33	36	40	45	513728	4838904	400

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-928	P	38	41	3	41	42	43	46	513757	4851436	412
R-929	NP	33	35	3	36	38	41	45	513764	4848580	417
R-930	P	42	44	2	44	44	45	47	513768	4850380	418
R-931	P	39	41	2	42	42	44	47	513772	4849999	412
R-932	P	37	39	2	40	41	43	46	513779	4846328	414
R-933	NP	31	34	3	35	38	41	45	513787	4843225	408
R-934	NP	27	30	3	33	36	40	45	513795	4839053	400
R-935	NP	43	46	2	46	46	47	48	513797	4852982	422
R-936	NP	29	32	3	34	37	41	45	513800	4841089	407
R-937	NP	35	38	2	38	40	42	46	513804	4846778	410
R-938	NP	37	39	2	40	41	43	46	513805	4846397	415
R-939	NP	22	25	3	31	35	40	45	513815	4835442	396
R-940	NP	26	29	3	32	36	40	45	513819	4837473	404
R-941	NP	34	36	3	37	39	42	46	513821	4848989	417
R-942	NP	29	31	3	34	36	41	45	513864	4859853	414
R-943	NP	22	26	3	31	35	40	45	513879	4835906	397
R-944	NP	29	31	3	34	37	41	45	513914	4840586	404
R-945	NP	22	25	3	31	35	40	45	513948	4835083	397
R-946	NP	32	35	3	36	38	41	45	513951	4856592	407
R-947	NP	29	32	3	34	37	41	45	514006	4840489	404
R-948	NP	32	35	3	36	38	41	45	514007	4856589	406
R-949	NP	31	34	3	35	37	41	45	514053	4842932	408
R-950	NP	26	29	3	33	36	40	45	514204	4837260	403
R-951	NP	36	39	2	39	40	42	46	514262	4847068	414
R-952	NP	33	35	3	36	38	41	45	514324	4842925	410
R-953	NP	29	32	3	34	37	41	45	514336	4838887	403

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-954	NP	33	36	3	37	38	41	45	514392	4842923	411
R-955	NP	33	36	3	37	38	41	45	514401	4848141	424
R-956	NP	31	34	3	35	37	41	45	514431	4841382	410
R-957	NP	26	29	3	32	36	40	45	514478	4861241	419
R-958	P	40	43	2	43	43	45	47	514496	4844794	416
R-959	NP	34	37	3	38	39	42	46	514523	4858751	420
R-960	NP	34	36	3	37	39	42	46	514524	4858223	416
R-961	NP	31	34	3	35	38	41	45	514531	4841400	410
R-962	NP	35	38	3	38	40	42	46	514586	4843195	411
R-963	P	36	39	3	39	40	42	46	514618	4849224	412
R-964	NP	34	36	3	37	39	42	46	514623	4856322	408
R-965	NP	34	36	3	37	39	42	46	514631	4856343	408
R-966	NP	31	33	3	35	37	41	45	514631	4838976	406
R-967	NP	33	36	3	37	38	41	45	514636	4857687	417
R-968	NP	41	43	2	43	44	45	47	514647	4845509	415
R-969	P	41	43	2	43	44	45	47	514674	4843796	415
R-970	NP	25	28	3	32	36	40	45	514773	4835789	402
R-971	NP	32	34	3	35	38	41	45	514851	4860044	414
R-972	NP	34	37	3	37	39	42	46	514893	4848259	423
R-973	NP	23	27	3	32	36	40	45	514955	4862067	419
R-974	NP	33	36	3	37	38	41	45	514959	4841403	413
R-975	NP	32	35	3	36	38	41	45	514983	4859946	411
R-976	P	42	45	2	45	45	46	48	515040	4854944	416
R-977	NP	40	42	3	43	43	44	47	515108	4851918	425
R-978	P	40	42	2	42	43	44	47	515117	4858400	422
R-979	NP	34	36	3	37	39	41	46	515181	4859890	412

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-980	NP	29	32	3	34	37	41	45	515198	4837397	409
R-981	NP	32	35	3	36	38	41	45	515199	4860088	416
R-982	NP	24	27	3	32	36	40	45	515204	4834781	400
R-983	NP	36	38	3	39	40	42	46	515230	4843010	414
R-984	NP	39	41	2	42	42	44	47	515241	4855219	413
R-985	P	39	42	2	42	42	44	47	515286	4849698	421
R-986	NP	36	38	3	39	40	42	46	515305	4848828	423
R-987	NP	24	27	3	32	36	40	45	515322	4835040	398
R-988	NP	34	36	3	37	39	42	46	515331	4842513	412
R-989	NP	44	46	2	46	46	47	49	515370	4852741	427
R-990	NP	43	45	2	45	46	46	48	515371	4854455	420
R-991	NP	35	38	3	39	40	42	46	515385	4848666	423
R-992	NP	37	39	2	40	41	43	46	515392	4840595	411
R-993	NP	41	44	2	44	44	45	47	515401	4845186	423
R-994	NP	28	31	3	34	37	41	45	515440	4836896	409
R-995	NP	22	25	4	31	35	40	45	515447	4834601	395
R-996	NP	25	28	3	32	36	40	45	515477	4835356	397
R-997	NP	35	38	3	38	40	42	46	515606	4856669	411
R-998	NP	22	25	3	31	35	40	45	515736	4862721	411
R-999	NP	35	38	3	39	40	42	46	515753	4843044	415
R-1000	NP	42	44	2	44	45	46	48	515766	4851829	424
R-1001	P	41	43	2	43	44	45	47	515777	4840526	411
R-1002	NP	41	44	2	44	44	45	47	515795	4850116	426
R-1003	NP	42	44	2	44	44	45	47	515831	4850172	426
R-1004	NP	36	38	3	39	40	42	46	515835	4856657	413
R-1005	P	37	40	3	40	41	43	46	515836	4847105	429

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1006	NP	42	44	2	44	45	45	48	515838	4850230	427
R-1007	NP	42	44	2	44	44	45	47	515854	4850088	427
R-1008	NP	42	44	2	44	45	45	48	515866	4850129	427
R-1009	NP	42	44	2	44	45	46	48	515875	4850270	427
R-1010	NP	42	44	2	44	45	45	48	515876	4850022	427
R-1011	NP	42	44	2	45	45	46	48	515878	4850367	427
R-1012	NP	42	44	2	45	45	46	48	515881	4850328	427
R-1013	NP	42	44	2	44	45	46	48	515881	4850170	427
R-1014	NP	42	44	2	44	45	46	48	515882	4850291	427
R-1015	NP	42	44	2	44	45	46	48	515892	4849981	427
R-1016	NP	42	44	2	44	45	46	48	515892	4850130	427
R-1017	NP	42	45	2	45	45	46	48	515906	4850372	428
R-1018	NP	42	45	2	45	45	46	48	515907	4850315	427
R-1019	NP	42	44	2	44	45	46	48	515911	4850085	427
R-1020	NP	42	44	2	44	45	46	48	515912	4850174	427
R-1021	NP	42	44	2	44	45	46	48	515917	4850130	427
R-1022	NP	42	44	2	44	45	46	48	515923	4850195	427
R-1023	NP	42	44	2	45	45	46	48	515937	4850220	428
R-1024	NP	42	45	2	45	45	46	48	515938	4850327	428
R-1025	NP	43	45	2	45	45	46	48	515938	4850371	428
R-1026	NP	23	27	3	32	36	40	45	515959	4861919	408
R-1027	NP	42	45	2	45	45	46	48	515960	4850168	428
R-1028	NP	42	45	2	45	45	46	48	515962	4850088	427
R-1029	NP	42	45	2	45	45	46	48	515963	4850133	427
R-1030	NP	42	45	2	45	45	46	48	515973	4850168	428
R-1031	NP	43	45	2	45	45	46	48	515976	4850326	429

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1032	NP	42	45	2	45	45	46	48	515976	4850274	429
R-1033	NP	27	30	3	33	36	40	45	515984	4835790	399
R-1034	NP	43	45	2	45	46	46	48	515989	4850373	429
R-1035	NP	42	44	2	44	45	45	48	516005	4854160	418
R-1036	NP	43	45	2	45	45	46	48	516007	4850275	429
R-1037	NP	43	45	2	45	45	46	48	516008	4850223	429
R-1038	NP	34	36	3	37	39	42	46	516033	4860114	404
R-1039	NP	43	45	2	45	46	46	48	516034	4850327	429
R-1040	NP	43	45	2	45	46	46	48	516039	4850273	429
R-1041	NP	43	45	2	45	45	46	48	516043	4850182	429
R-1042	NP	43	45	2	45	45	46	48	516043	4850156	428
R-1043	P	39	41	2	41	42	43	46	516047	4838990	412
R-1044	NP	43	45	2	45	46	46	48	516075	4850177	429
R-1045	NP	43	45	2	45	46	46	48	516078	4850226	430
R-1046	NP	29	32	3	34	37	41	45	516098	4860809	406
R-1047	NP	43	46	2	46	46	47	48	516107	4850208	429
R-1048	NP	32	35	3	36	38	41	45	516107	4837427	415
R-1049	NP	31	34	3	35	37	41	45	516117	4860575	408
R-1050	P	40	42	2	43	43	44	47	516117	4858001	421
R-1051	P	44	46	2	46	46	47	48	516126	4851967	428
R-1052	NP	36	38	3	39	40	42	46	516136	4857292	418
R-1053	NP	44	46	2	46	46	47	49	516162	4853233	424
R-1054	NP	36	38	3	39	40	42	46	516206	4857058	417
R-1055	NP	17	21	3	30	35	40	45	516227	4863039	403
R-1056	NP	42	45	2	45	45	46	48	516241	4851480	428
R-1057	NP	43	45	2	46	46	47	48	516245	4858273	423

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1058	NP	38	40	2	40	41	43	46	516277	4856649	413
R-1059	NP	32	35	3	36	38	41	45	516298	4837284	415
R-1060	NP	24	27	3	32	36	40	45	516440	4834124	404
R-1061	NP	36	39	3	39	40	42	46	516484	4842924	421
R-1062	NP	37	40	3	40	41	43	46	516606	4843034	423
R-1063	P	41	44	2	44	44	45	47	516647	4855144	413
R-1064	NP	37	40	3	40	41	43	46	516661	4847070	431
R-1065	NP	42	45	2	45	45	46	48	516753	4840502	420
R-1066	NP	36	38	3	39	40	42	46	516781	4859851	408
R-1067	NP	33	35	3	36	38	41	45	516818	4860182	401
R-1068	NP	40	43	2	43	43	45	47	516819	4841534	411
R-1069	P	39	42	2	42	42	44	47	516833	4856558	413
R-1070	NP	39	42	2	42	43	44	47	516848	4844408	424
R-1071	NP	26	29	3	33	36	40	45	516850	4861503	394
R-1072	NP	43	45	2	46	46	47	48	516874	4846227	430
R-1073	NP	37	40	2	40	41	43	46	516885	4856735	413
R-1074	P	42	44	2	44	45	46	48	516888	4840599	422
R-1075	NP	42	45	2	45	45	46	48	516895	4843978	427
R-1076	NP	40	42	2	42	43	44	47	516929	4854891	417
R-1077	NP	36	38	3	39	40	42	46	516930	4837269	417
R-1078	NP	39	42	3	42	42	44	47	516939	4846739	431
R-1079	NP	42	44	2	44	45	46	48	516948	4852212	426
R-1080	NP	27	30	3	33	36	40	45	516970	4835288	398
R-1081	P	42	44	2	44	45	45	48	516978	4843319	422
R-1082	NP	42	44	2	44	45	45	48	516997	4844193	424
R-1083	NP	39	41	2	42	42	44	47	517026	4838218	415

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1084	NP	37	39	3	40	41	43	46	517036	4837283	418
R-1085	NP	39	41	2	41	42	44	46	517070	4838979	418
R-1086	NP	43	45	2	45	45	46	48	517077	4852759	424
R-1087	NP	29	32	3	34	37	41	45	517084	4835589	400
R-1088	NP	25	28	3	32	36	40	45	517129	4861622	391
R-1089	NP	23	26	3	31	36	40	45	517149	4862249	392
R-1090	NP	26	29	3	32	36	40	45	517152	4861515	392
R-1091	NP	20	23	4	31	35	40	45	517164	4862777	398
R-1092	NP	37	40	2	40	41	43	46	517206	4837185	417
R-1093	NP	40	42	2	43	43	44	47	517220	4858384	419
R-1094	NP	24	27	3	32	36	40	45	517241	4861789	390
R-1095	NP	26	29	3	32	36	40	45	517259	4834447	411
R-1096	NP	40	42	2	43	43	44	47	517275	4856027	410
R-1097	NP	42	44	2	44	45	46	48	517384	4850282	425
R-1098	NP	39	41	2	42	42	44	47	517389	4838991	420
R-1099	P	39	42	2	42	43	44	47	517402	4840576	421
R-1100	NP	42	45	2	45	45	46	48	517407	4851921	423
R-1101	P	40	42	2	42	43	44	47	517424	4840478	422
R-1102	NP	37	39	3	40	41	43	46	517470	4846974	425
R-1103	NP	38	40	3	40	41	43	46	517476	4853540	420
R-1104	NP	37	40	3	40	41	43	46	517476	4853612	420
R-1105	NP	40	42	2	42	43	44	47	517581	4843014	426
R-1106	NP	37	39	3	40	41	43	46	517584	4859008	417
R-1107	P	42	44	2	44	44	45	47	517600	4837356	415
R-1108	P	39	41	2	42	42	44	47	517680	4845339	424
R-1109	NP	42	44	2	44	44	45	47	517708	4850197	425

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1110	NP	30	33	3	35	37	41	45	517733	4860357	412
R-1111	NP	35	37	3	38	39	42	46	517736	4859297	418
R-1112	NP	40	42	2	42	43	44	47	517744	4858283	420
R-1113	NP	26	28	2	32	36	40	45	517765	4833988	415
R-1114	NP	36	38	3	39	40	42	46	517783	4847092	423
R-1115	P	39	42	2	42	42	44	47	517789	4842923	427
R-1116	NP	40	43	2	43	43	45	47	517790	4840495	424
R-1117	P	39	41	3	41	42	44	46	517791	4842859	427
R-1118	NP	31	34	3	35	37	41	45	517793	4860027	412
R-1119	NP	41	43	2	43	44	45	47	517960	4848722	428
R-1120	NP	40	43	2	43	43	45	47	517975	4838960	424
R-1121	NP	22	25	3	31	35	40	45	517978	4861575	401
R-1122	NP	18	22	3	31	35	40	45	517994	4862246	392
R-1123	P	36	38	2	39	40	42	46	517996	4856744	416
R-1124	P	35	38	3	38	40	42	46	518018	4856637	415
R-1125	NP	41	43	2	43	44	45	47	518019	4843156	425
R-1126	P	41	43	2	43	44	45	47	518033	4838866	424
R-1127	NP	34	36	3	37	39	42	46	518060	4854559	417
R-1128	NP	31	33	3	35	37	41	45	518120	4835711	403
R-1129	P	36	39	3	39	40	42	46	518127	4858840	414
R-1130	NP	41	43	2	43	43	45	47	518144	4837263	414
R-1131	NP	37	40	3	40	41	43	46	518191	4852396	427
R-1132	P	42	44	2	44	44	45	47	518230	4837362	416
R-1133	NP	30	32	2	34	37	41	45	518231	4835470	411
R-1134	NP	40	43	2	43	43	44	47	518251	4837258	416
R-1135	NP	30	33	3	35	37	41	45	518251	4859862	406

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1136	NP	26	28	2	32	36	40	45	518282	4833994	415
R-1137	NP	27	29	2	32	36	40	45	518368	4834559	415
R-1138	P	35	38	3	39	40	42	46	518368	4856747	416
R-1139	NP	37	39	2	40	41	43	46	518429	4845947	416
R-1140	NP	27	30	3	33	36	40	45	518445	4860471	396
R-1141	P	42	44	2	44	44	45	47	518458	4851401	417
R-1142	P	42	44	2	44	45	45	48	518478	4850878	420
R-1143	P	42	44	2	44	45	46	48	518481	4850912	419
R-1144	NP	45	47	2	47	47	48	49	518513	4843832	422
R-1145	NP	40	42	2	43	43	44	47	518539	4842998	424
R-1146	NP	33	36	3	37	38	41	45	518542	4853311	416
R-1147	NP	39	41	2	41	42	44	46	518588	4845434	418
R-1148	NP	44	46	2	46	46	47	48	518604	4838360	414
R-1149	NP	41	43	2	44	44	45	47	518608	4840586	422
R-1150	NP	39	41	3	41	42	44	46	518610	4849026	424
R-1151	NP	36	38	3	39	40	42	46	518610	4852410	424
R-1152	NP	26	28	2	32	36	40	45	518652	4833763	420
R-1153	NP	31	33	3	35	37	41	45	518656	4836027	401
R-1154	NP	42	44	2	44	45	45	48	518670	4840507	423
R-1155	NP	23	26	3	32	36	40	45	518740	4861633	389
R-1156	NP	39	41	2	42	42	44	47	518843	4858382	415
R-1157	NP	42	44	2	44	44	45	47	518945	4839005	422
R-1158	NP	42	44	2	44	45	46	48	518960	4838868	421
R-1159	NP	29	31	3	34	37	41	45	518998	4859864	411
R-1160	NP	31	33	2	35	37	41	45	519030	4835641	403
R-1161	NP	41	44	2	44	44	45	47	519103	4840591	427

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1162	NP	38	40	2	41	41	43	46	519109	4847080	421
R-1163	NP	38	40	2	41	41	43	46	519179	4850271	426
R-1164	NP	38	40	2	40	41	43	46	519188	4837186	417
R-1165	NP	21	24	3	31	35	40	45	519190	4862316	388
R-1166	NP	24	27	3	32	36	40	45	519264	4860492	395
R-1167	NP	39	41	2	41	42	43	46	519295	4837343	418
R-1168	NP	39	41	2	41	42	43	46	519308	4851685	416
R-1169	NP	23	26	3	31	36	40	45	519326	4861430	387
R-1170	NP	30	33	3	35	37	41	45	519337	4854791	411
R-1171	NP	24	26	3	32	36	40	45	519352	4861082	390
R-1172	NP	35	37	3	38	39	42	46	519358	4858089	410
R-1173	NP	31	34	3	35	38	41	45	519358	4856634	417
R-1174	NP	39	41	2	41	42	43	46	519408	4837342	419
R-1175	NP	24	27	3	32	36	40	45	519410	4860957	391
R-1176	NP	32	35	3	36	38	41	45	519436	4857025	414
R-1177	NP	20	23	3	31	35	40	45	519446	4862651	389
R-1178	NP	30	32	3	34	37	41	45	519449	4855370	404
R-1179	NP	20	23	3	31	35	40	45	519453	4862570	388
R-1180	NP	22	25	3	31	35	40	45	519498	4861662	387
R-1181	NP	31	33	3	35	37	41	45	519532	4856582	417
R-1182	NP	37	40	2	40	41	43	46	519548	4837160	417
R-1183	P	41	43	2	44	44	45	47	519563	4846897	414
R-1184	NP	30	33	3	35	37	41	45	519645	4858833	402
R-1185	P	43	45	2	45	45	46	48	519706	4840505	430
R-1186	NP	39	42	2	42	42	44	47	519741	4850581	421
R-1187	NP	38	40	3	41	41	43	46	519765	4851548	413

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1188	NP	41	43	2	43	44	45	47	519826	4843035	430
R-1189	NP	43	45	2	45	46	46	48	519903	4838677	425
R-1190	NP	21	24	3	31	35	40	45	519911	4861512	384
R-1191	P	36	39	3	39	40	42	46	520001	4849581	417
R-1192	NP	20	23	3	31	35	40	45	520024	4861624	382
R-1193	NP	29	32	3	34	37	41	45	520041	4858266	395
R-1194	NP	29	31	3	34	37	41	45	520072	4855135	403
R-1195	NP	30	33	3	35	37	41	45	520074	4853845	411
R-1196	NP	32	35	3	36	38	41	45	520082	4852861	416
R-1197	NP	31	32	2	34	37	41	45	520109	4835306	404
R-1198	P	41	43	2	44	44	45	47	520115	4841938	430
R-1199	NP	42	44	2	44	44	45	47	520118	4844810	420
R-1200	NP	37	40	2	40	41	43	46	520126	4845681	421
R-1201	NP	40	43	2	43	43	45	47	520143	4845066	417
R-1202	NP	41	43	2	43	44	45	47	520149	4840587	432
R-1203	NP	31	33	2	35	37	41	45	520151	4835451	405
R-1204	NP	38	40	2	40	41	43	46	520151	4837162	420
R-1205	NP	29	32	3	34	37	41	45	520156	4853936	410
R-1206	NP	31	34	3	35	37	41	45	520170	4853243	410
R-1207	NP	34	36	2	37	38	41	46	520176	4836401	415
R-1208	NP	28	31	3	34	36	41	45	520185	4858282	393
R-1209	NP	38	40	2	40	41	43	46	520204	4846301	413
R-1210	NP	28	31	3	33	36	41	45	520220	4858288	392
R-1211	NP	39	41	2	42	42	44	47	520237	4837341	419
R-1212	P	44	46	2	46	47	47	49	520242	4838214	419
R-1213	NP	31	33	2	35	37	41	45	520242	4835480	405

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1214	NP	30	31	1	34	36	41	45	520250	4834773	415
R-1215	NP	24	27	3	32	36	40	45	520259	4860177	401
R-1216	NP	31	33	2	35	37	41	45	520264	4835389	406
R-1217	NP	32	35	3	36	38	41	45	520306	4852770	415
R-1218	NP	39	41	2	41	42	43	46	520359	4843008	432
R-1219	P	39	41	2	41	42	43	46	520403	4841820	431
R-1220	NP	40	42	2	42	43	44	47	520408	4837331	419
R-1221	NP	22	25	3	31	35	40	45	520440	4861034	390
R-1222	NP	32	33	1	35	37	41	45	520443	4835643	404
R-1223	P	41	43	2	43	44	45	47	520468	4840492	431
R-1224	NP	28	30	3	33	36	40	45	520472	4855135	401
R-1225	NP	28	29	1	33	36	40	45	520476	4834006	418
R-1226	NP	42	44	2	44	45	46	48	520476	4851440	414
R-1227	NP	32	33	1	35	37	41	45	520499	4835720	404
R-1228	NP	29	30	1	33	36	40	45	520597	4834039	417
R-1229	NP	32	33	1	35	37	41	45	520666	4835716	405
R-1230	NP	28	29	1	32	36	40	45	520667	4834025	418
R-1231	NP	39	41	2	42	42	44	47	520694	4837258	411
R-1232	NP	22	24	3	31	35	40	45	520796	4860818	390
R-1233	NP	23	26	3	31	35	40	45	520847	4859896	400
R-1234	NP	41	43	2	44	44	45	47	520854	4840498	427
R-1235	P	36	38	2	39	40	42	46	520870	4845901	412
R-1236	NP	17	20	3	30	35	40	45	520894	4862308	387
R-1237	NP	23	27	3	32	36	40	45	520932	4859655	405
R-1238	NP	22	25	3	31	35	40	45	520934	4860016	398
R-1239	NP	20	22	3	31	35	40	45	520936	4861905	378

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1240	P	42	44	2	44	44	45	47	520938	4847030	417
R-1241	NP	26	29	3	33	36	40	45	520963	4856968	412
R-1242	NP	22	25	3	31	35	40	45	520967	4859861	400
R-1243	NP	25	28	3	32	36	40	45	520969	4858851	395
R-1244	NP	21	24	3	31	35	40	45	520971	4859822	400
R-1245	NP	25	28	3	32	36	40	45	520975	4857840	397
R-1246	NP	27	30	3	33	36	40	45	520985	4855050	404
R-1247	NP	19	23	3	31	35	40	45	521020	4859960	396
R-1248	NP	23	27	3	32	36	40	45	521027	4859508	399
R-1249	NP	42	44	2	44	44	45	47	521033	4850401	409
R-1250	NP	20	22	3	31	35	40	45	521037	4861478	376
R-1251	NP	22	24	3	31	35	40	45	521038	4860463	390
R-1252	NP	41	43	2	43	44	45	47	521040	4847034	416
R-1253	NP	24	28	3	32	36	40	45	521040	4858842	395
R-1254	NP	20	23	3	31	35	40	45	521043	4861044	382
R-1255	NP	20	23	3	31	35	40	45	521056	4861210	380
R-1256	P	44	46	2	46	47	47	49	521065	4838660	416
R-1257	NP	43	45	2	45	46	46	48	521068	4838963	419
R-1258	NP	21	24	3	31	35	40	45	521081	4860612	390
R-1259	NP	21	24	3	31	35	40	45	521082	4860672	389
R-1260	NP	27	29	3	33	36	40	45	521087	4855482	404
R-1261	NP	22	24	3	31	35	40	45	521092	4860473	390
R-1262	NP	21	23	3	31	35	40	45	521101	4860731	387
R-1263	NP	20	23	3	31	35	40	45	521107	4861047	382
R-1264	NP	41	43	2	43	43	45	47	521125	4840596	430
R-1265	NP	20	24	3	31	35	40	45	521129	4860503	389

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1266	NP	20	23	3	31	35	40	45	521136	4861148	384
R-1267	NP	21	24	3	31	35	40	45	521156	4860558	389
R-1268	NP	21	23	3	31	35	40	45	521161	4860876	387
R-1269	NP	33	33	1	35	37	41	45	521169	4835760	417
R-1270	NP	26	29	3	32	36	40	45	521176	4856979	414
R-1271	NP	18	22	4	31	35	40	45	521182	4860614	388
R-1272	NP	20	23	3	31	35	40	45	521184	4860679	388
R-1273	NP	21	24	3	31	35	40	45	521195	4860737	388
R-1274	NP	36	37	2	38	39	42	46	521201	4845876	413
R-1275	NP	20	23	3	31	35	40	45	521202	4859961	393
R-1276	NP	20	23	3	31	35	40	45	521216	4861045	386
R-1277	NP	26	29	3	32	36	40	45	521233	4856677	412
R-1278	NP	18	21	3	31	35	40	45	521237	4860804	386
R-1279	NP	18	21	3	31	35	40	45	521243	4860919	385
R-1280	NP	19	22	3	31	35	40	45	521244	4860863	387
R-1281	NP	31	33	3	35	37	41	45	521252	4852940	405
R-1282	NP	21	24	3	31	35	40	45	521265	4859959	393
R-1283	NP	16	20	3	30	35	40	45	521273	4860963	383
R-1284	NP	20	22	3	31	35	40	45	521295	4861206	384
R-1285	NP	42	44	2	44	44	45	47	521322	4840485	430
R-1286	NP	40	42	2	42	43	44	47	521331	4849056	416
R-1287	NP	18	21	3	31	35	40	45	521339	4861375	379
R-1288	NP	20	23	3	31	35	40	45	521360	4861266	384
R-1289	P	38	40	2	41	42	43	46	521422	4850289	412
R-1290	NP	41	43	2	44	44	45	47	521428	4851397	413
R-1291	NP	35	37	2	38	39	42	46	521434	4845217	418

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1292	NP	21	24	3	31	35	40	45	521437	4859988	392
R-1293	NP	33	33	1	35	37	41	45	521455	4835547	417
R-1294	NP	18	21	3	31	35	40	45	521465	4861272	382
R-1295	NP	17	20	3	30	35	40	45	521512	4861599	374
R-1296	NP	27	29	2	33	36	40	45	521562	4854741	400
R-1297	NP	37	38	1	39	40	42	46	521576	4843003	423
R-1298	NP	23	26	3	31	36	40	45	521582	4858210	390
R-1299	NP	17	20	3	30	35	40	45	521585	4861587	375
R-1300	P	43	46	2	46	46	47	48	521679	4848004	414
R-1301	NP	18	21	2	30	35	40	45	521693	4861591	374
R-1302	NP	19	22	3	31	35	40	45	521723	4861355	379
R-1303	NP	35	38	2	38	40	42	46	521726	4849822	410
R-1304	NP	37	38	2	39	40	42	46	521736	4837311	411
R-1305	NP	22	26	4	31	35	40	45	521744	4858959	389
R-1306	NP	37	38	1	39	40	42	46	521753	4837244	413
R-1307	P	44	46	2	46	46	47	49	521756	4840228	431
R-1308	NP	38	39	1	40	41	43	46	521759	4841925	423
R-1309	NP	27	29	2	33	36	40	45	521760	4854281	399
R-1310	NP	29	30	1	33	36	40	45	521769	4834227	410
R-1311	NP	21	24	3	31	35	40	45	521792	4860037	394
R-1312	NP	40	43	2	43	43	45	47	521815	4847806	410
R-1313	NP	43	45	2	45	45	46	48	521837	4839464	423
R-1314	NP	18	20	2	30	35	40	45	521860	4861584	374
R-1315	NP	27	29	2	32	36	40	45	521862	4854624	399
R-1316	P	44	46	2	46	46	47	49	521873	4839620	424
R-1317	NP	16	19	3	30	35	40	45	521948	4861592	374

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1318	NP	13	16	3	30	35	40	45	521981	4861453	376
R-1319	NP	24	27	4	32	36	40	45	521992	4856561	411
R-1320	NP	35	37	2	38	39	42	46	522023	4850291	411
R-1321	NP	22	25	3	31	35	40	45	522046	4858344	389
R-1322	NP	35	34	0	36	38	41	45	522093	4835647	423
R-1323	NP	20	24	4	31	35	40	45	522103	4859884	401
R-1324	NP	15	19	3	30	35	40	45	522148	4861166	383
R-1325	NP	26	29	3	32	36	40	45	522153	4854248	399
R-1326	NP	26	28	2	32	36	40	45	522171	4854770	404
R-1327	NP	20	23	4	31	35	40	45	522188	4860003	404
R-1328	NP	36	36	0	37	38	41	46	522209	4836024	428
R-1329	NP	40	40	0	41	42	43	46	522289	4842886	420
R-1330	NP	19	23	4	31	35	40	45	522325	4859881	398
R-1331	NP	27	30	3	33	36	40	45	522358	4853829	401
R-1332	NP	37	38	0	38	40	42	46	522395	4837246	422
R-1333	NP	18	23	4	31	35	40	45	522407	4857002	398
R-1334	P	28	30	3	33	36	40	45	522434	4853405	402
R-1335	P	28	30	3	33	36	40	45	522460	4853420	402
R-1336	NP	18	22	4	31	35	40	45	522499	4856669	401
R-1337	NP	37	38	1	38	40	42	46	522507	4845014	411
R-1338	NP	39	40	0	40	41	43	46	522520	4843505	414
R-1339	NP	37	38	1	38	40	42	46	522531	4844709	413
R-1340	NP	37	38	1	38	40	42	46	522537	4844761	411
R-1341	NP	38	39	1	39	40	42	46	522541	4844186	422
R-1342	NP	35	37	1	37	39	42	46	522561	4846899	407
R-1343	NP	42	43	0	43	43	45	47	522564	4842969	420

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1344	P	30	32	3	34	37	41	45	522616	4852384	408
R-1345	NP	35	37	2	37	39	42	46	522660	4848979	411
R-1346	NP	32	34	2	35	37	41	45	522724	4851333	405
R-1347	NP	35	37	2	37	39	42	46	522782	4848656	404
R-1348	NP	39	40	1	41	41	43	46	522831	4838804	427
R-1349	NP	36	37	1	38	39	42	46	522866	4845925	413
R-1350	NP	40	40	0	40	41	43	46	522966	4844508	412
R-1351	NP	26	29	3	32	36	40	45	523026	4853708	400
R-1352	NP	24	27	3	32	36	40	45	523078	4854464	396
R-1353	NP	32	34	2	35	37	41	45	523134	4850415	406
R-1354	NP	42	42	0	42	43	44	47	523257	4843787	419
R-1355	NP	39	38	0	39	40	42	46	523284	4835253	421
R-1356	NP	42	43	1	43	43	44	47	523320	4841355	428
R-1357	NP	40	39	-1	40	40	43	46	523321	4837937	423
R-1358	NP	39	39	0	40	41	43	46	523347	4838675	427
R-1359	NP	40	41	1	41	42	44	46	523349	4839242	432
R-1360	NP	36	36	1	37	39	42	46	523355	4847108	408
R-1361	NP	37	37	1	38	39	42	46	523364	4846629	414
R-1362	NP	43	43	0	43	43	45	47	523371	4837051	430
R-1363	NP	46	47	1	47	47	48	49	523378	4836128	431
R-1364	NP	25	28	3	32	36	40	45	523393	4853939	402
R-1365	NP	37	38	1	39	40	42	46	523422	4846514	417
R-1366	NP	41	42	1	43	43	44	47	523428	4840940	433
R-1367	NP	42	44	2	44	44	45	47	523431	4840675	434
R-1368	NP	36	37	1	37	39	42	46	523433	4847135	408
R-1369	NP	45	45	0	45	46	46	48	523434	4844331	423

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1370	NP	42	43	1	43	43	45	47	523437	4840841	435
R-1371	NP	45	45	0	45	45	46	48	523439	4843066	421
R-1372	NP	35	36	1	37	38	41	45	523442	4848699	407
R-1373	NP	39	40	0	40	41	43	46	523443	4838848	428
R-1374	NP	45	45	0	45	46	46	48	523445	4844289	422
R-1375	NP	41	43	2	43	44	45	47	523448	4839696	435
R-1376	NP	42	43	1	43	44	45	47	523454	4840750	434
R-1377	NP	41	42	1	42	43	44	47	523459	4840928	433
R-1378	NP	35	36	1	37	38	41	45	523461	4848582	406
R-1379	NP	44	44	0	44	44	45	47	523477	4836999	430
R-1380	NP	40	40	-1	40	41	43	46	523478	4837823	426
R-1381	NP	42	43	2	44	44	45	47	523490	4840690	434
R-1382	NP	42	43	1	43	44	45	47	523491	4840748	435
R-1383	NP	21	25	4	31	35	40	45	523503	4855943	404
R-1384	NP	41	42	1	42	43	44	47	523508	4840920	434
R-1385	NP	42	43	1	43	44	45	47	523523	4840679	435
R-1386	NP	42	43	1	43	44	45	47	523524	4840742	435
R-1387	NP	35	36	1	37	38	41	45	523532	4847691	413
R-1388	NP	24	27	3	32	36	40	45	523537	4854286	399
R-1389	NP	41	42	1	42	43	44	47	523541	4840917	434
R-1390	NP	42	43	1	43	44	45	47	523549	4840693	435
R-1391	NP	41	43	1	43	43	45	47	523555	4840761	436
R-1392	NP	41	42	1	42	43	44	47	523565	4840923	434
R-1393	NP	41	42	1	43	43	44	47	523577	4840770	436
R-1394	NP	41	43	1	43	43	45	47	523593	4840690	435
R-1395	NP	41	42	1	42	43	44	47	523597	4840916	434

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1396	NP	41	42	1	42	43	44	47	523604	4839705	435
R-1397	NP	42	42	0	42	42	44	47	523612	4835424	425
R-1398	NP	41	42	1	42	43	44	47	523614	4840770	436
R-1399	NP	45	45	0	45	45	46	48	523649	4842184	426
R-1400	NP	41	42	1	42	43	44	47	523651	4840739	436
R-1401	NP	41	42	1	42	42	44	47	523664	4840904	435
R-1402	NP	41	42	1	42	43	44	47	523678	4840692	436
R-1403	NP	41	42	1	42	43	44	47	523695	4840696	436
R-1404	NP	41	42	1	42	43	44	47	523702	4840731	436
R-1405	NP	41	41	1	42	42	44	47	523725	4841221	434
R-1406	NP	41	41	1	42	42	44	47	523725	4841264	434
R-1407	NP	41	42	1	42	43	44	47	523726	4840575	435
R-1408	NP	40	41	1	42	42	44	47	523726	4841024	434
R-1409	NP	40	41	1	41	42	44	46	523726	4841048	434
R-1410	NP	41	41	1	41	42	44	46	523726	4841117	434
R-1411	NP	41	41	1	41	42	44	46	523727	4841135	434
R-1412	NP	40	41	1	42	42	44	47	523728	4840994	434
R-1413	NP	40	41	1	41	42	44	46	523729	4841079	434
R-1414	NP	41	42	1	42	43	44	47	523730	4840598	435
R-1415	NP	41	42	1	42	43	44	47	523730	4840652	436
R-1416	NP	40	41	1	41	42	44	46	523730	4840964	434
R-1417	NP	41	42	1	42	43	44	47	523731	4840629	435
R-1418	NP	40	41	1	42	42	44	47	523732	4840934	435
R-1419	NP	41	41	1	41	42	44	46	523733	4841178	434
R-1420	NP	41	42	1	42	43	44	47	523735	4840667	436
R-1421	NP	41	42	1	42	43	44	47	523735	4840686	436

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1422	NP	41	41	1	41	42	44	46	523735	4841156	434
R-1423	NP	27	29	2	33	36	40	45	523740	4852690	407
R-1424	NP	30	32	2	34	37	41	45	523745	4851104	410
R-1425	NP	41	42	1	42	43	44	47	523750	4840422	435
R-1426	NP	41	42	1	43	43	44	47	523753	4840364	436
R-1427	NP	41	42	1	42	43	44	47	523757	4840471	436
R-1428	NP	41	41	0	42	42	44	47	523766	4841358	433
R-1429	NP	41	42	1	42	43	44	47	523772	4840371	435
R-1430	NP	41	42	1	42	43	44	47	523782	4840546	436
R-1431	NP	41	42	1	42	43	44	47	523783	4840589	436
R-1432	NP	41	42	1	42	42	44	47	523783	4840695	437
R-1433	NP	41	42	1	42	43	44	47	523784	4840568	436
R-1434	NP	41	42	1	42	42	44	47	523786	4840676	437
R-1435	NP	41	41	1	41	42	44	46	523787	4841291	433
R-1436	NP	28	30	2	33	36	40	45	523789	4852419	406
R-1437	NP	40	41	1	41	42	43	46	523790	4841048	434
R-1438	NP	40	41	1	41	42	43	46	523791	4841071	433
R-1439	NP	40	41	1	41	42	44	46	523792	4841011	435
R-1440	NP	40	41	1	41	42	44	46	523792	4841173	433
R-1441	NP	40	41	1	41	42	43	46	523793	4841096	433
R-1442	NP	40	41	1	41	42	43	46	523793	4841143	433
R-1443	NP	40	41	1	42	42	44	47	523794	4840730	436
R-1444	NP	41	41	1	41	42	44	46	523794	4841215	433
R-1445	NP	30	32	2	34	37	41	45	523796	4851101	410
R-1446	NP	41	42	1	42	43	44	47	523797	4840372	435
R-1447	NP	41	42	1	42	43	44	47	523804	4840419	435

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1448	NP	46	46	0	46	46	47	49	523812	4845041	428
R-1449	NP	18	21	3	31	35	40	45	523814	4856119	397
R-1450	NP	40	41	1	41	42	44	46	523828	4840879	435
R-1451	NP	41	42	1	42	43	44	47	523833	4840360	436
R-1452	NP	41	42	1	42	42	44	47	523834	4840605	436
R-1453	NP	40	41	1	41	42	43	46	523835	4840934	435
R-1454	NP	41	42	1	42	42	44	47	523836	4840572	436
R-1455	NP	40	41	1	42	42	44	47	523837	4840636	436
R-1456	NP	40	41	1	42	42	44	47	523838	4840665	436
R-1457	NP	40	41	1	42	42	44	47	523840	4840694	436
R-1458	NP	40	41	1	41	42	43	46	523840	4841126	432
R-1459	NP	41	41	0	42	42	44	47	523841	4841352	433
R-1460	NP	40	41	1	41	42	43	46	523842	4841167	433
R-1461	NP	41	41	1	41	42	44	46	523842	4841240	432
R-1462	NP	29	31	2	33	36	40	45	523843	4851254	409
R-1463	NP	40	41	1	41	42	43	46	523843	4841212	432
R-1464	NP	28	30	2	33	36	40	45	523849	4851295	406
R-1465	NP	30	32	2	34	37	41	45	523851	4851108	411
R-1466	NP	41	42	1	42	42	44	47	523868	4840358	436
R-1467	NP	30	31	2	34	37	41	45	523884	4851213	411
R-1468	NP	40	41	1	41	42	44	46	523884	4840689	436
R-1469	NP	40	41	1	42	42	44	47	523886	4840600	437
R-1470	NP	40	41	1	42	42	44	47	523886	4840621	437
R-1471	NP	30	32	2	34	37	41	45	523887	4851156	411
R-1472	NP	40	41	1	41	42	44	46	523887	4840663	436
R-1473	NP	40	41	1	41	42	43	46	523888	4840848	434

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1474	NP	40	41	1	41	42	43	46	523888	4840910	434
R-1475	NP	40	41	1	41	42	43	46	523889	4840877	434
R-1476	NP	40	41	1	42	42	44	47	523890	4840579	436
R-1477	NP	40	41	1	41	42	43	46	523890	4841012	434
R-1478	NP	41	41	0	41	42	44	46	523891	4841285	432
R-1479	NP	40	41	1	42	42	44	47	523891	4840550	437
R-1480	NP	40	41	1	41	42	43	46	523891	4840730	435
R-1481	NP	40	41	1	41	42	43	46	523891	4840943	434
R-1482	NP	40	41	1	41	42	43	46	523891	4841078	432
R-1483	NP	40	41	1	41	42	43	46	523892	4841047	433
R-1484	NP	40	41	1	41	42	43	46	523896	4841142	431
R-1485	NP	41	41	1	42	42	44	47	523902	4840369	436
R-1486	NP	40	41	1	42	42	44	47	523908	4840420	436
R-1487	NP	40	41	1	42	42	44	47	523908	4840452	436
R-1488	NP	29	31	2	34	36	41	45	523911	4851260	409
R-1489	NP	40	41	1	42	42	44	47	523912	4840493	436
R-1490	NP	40	41	1	41	42	43	46	523949	4840551	437
R-1491	NP	40	41	1	41	42	43	46	523966	4840492	437
R-1492	NP	40	41	1	41	42	43	46	523972	4840549	437
R-1493	NP	40	41	1	41	42	43	46	523995	4840740	434
R-1494	NP	40	41	1	41	42	43	46	524006	4840550	437
R-1495	NP	21	24	4	31	35	40	45	524011	4855958	400
R-1496	NP	40	41	1	41	42	43	46	524020	4840486	436
R-1497	NP	40	41	1	41	42	43	46	524020	4840684	435
R-1498	NP	40	41	1	41	42	43	46	524023	4840744	434
R-1499	NP	40	41	1	41	42	43	46	524025	4840638	436

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1500	NP	40	41	1	41	42	43	46	524031	4840551	436
R-1501	NP	40	41	1	41	42	43	46	524075	4840648	435
R-1502	NP	40	41	1	41	42	43	46	524076	4840551	435
R-1503	NP	40	40	1	41	42	43	46	524083	4840743	434
R-1504	NP	40	41	1	41	42	43	46	524090	4840445	435
R-1505	NP	40	41	1	41	42	43	46	524094	4840486	435
R-1506	NP	19	24	4	31	35	40	45	524096	4856578	393
R-1507	NP	40	40	1	41	42	43	46	524117	4840734	433
R-1508	NP	40	41	1	41	42	43	46	524136	4840411	434
R-1509	NP	40	41	1	41	42	43	46	524139	4840347	435
R-1510	NP	40	41	1	41	42	43	46	524142	4840494	434
R-1511	NP	40	41	1	41	42	43	46	524147	4840553	434
R-1512	NP	40	40	0	41	42	43	46	524184	4840564	434
R-1513	NP	40	40	0	41	41	43	46	524189	4840630	434
R-1514	NP	40	41	0	41	42	43	46	524192	4840336	436
R-1515	NP	40	41	1	41	42	43	46	524198	4840379	435
R-1516	NP	22	25	3	31	35	40	45	524249	4854958	396
R-1517	NP	47	46	-1	46	46	47	48	524256	4837251	429
R-1518	NP	16	19	4	30	35	40	45	524269	4855739	395
R-1519	NP	27	29	2	32	36	40	45	524273	4852703	408
R-1520	NP	40	40	0	41	42	43	46	524345	4840564	433
R-1521	NP	46	46	0	46	46	47	48	524364	4842091	424
R-1522	NP	27	29	2	32	36	40	45	524365	4852586	405
R-1523	NP	40	41	0	41	42	43	46	524371	4840345	436
R-1524	NP	40	41	0	41	42	43	46	524373	4840360	435
R-1525	NP	40	41	0	41	42	43	46	524374	4840389	435

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1526	NP	40	41	0	41	42	43	46	524374	4840431	435
R-1527	NP	40	41	0	41	42	43	46	524374	4840462	435
R-1528	NP	40	41	0	41	42	43	46	524374	4840375	435
R-1529	NP	40	41	0	41	42	43	46	524374	4840447	435
R-1530	NP	41	41	0	41	42	43	46	524374	4840329	436
R-1531	NP	40	41	0	41	42	43	46	524375	4840404	435
R-1532	NP	40	41	0	41	42	43	46	524375	4840493	434
R-1533	NP	40	41	0	41	42	43	46	524393	4840548	434
R-1534	NP	40	41	0	41	42	43	46	524405	4840467	435
R-1535	NP	40	41	0	41	42	43	46	524472	4840555	435
R-1536	NP	41	41	0	41	42	43	46	524473	4840469	436
R-1537	NP	41	41	0	41	42	43	46	524559	4840460	436
R-1538	NP	41	41	0	42	42	44	47	524638	4840470	436
R-1539	NP	41	42	0	42	42	44	47	524693	4840546	435
R-1540	NP	49	47	-2	47	47	47	49	524746	4837244	434
R-1541	NP	22	25	3	31	35	40	45	524754	4854462	394
R-1542	NP	34	34	1	36	38	41	45	524769	4850476	410
R-1543	NP	42	42	0	42	43	44	47	524792	4840557	435
R-1544	NP	44	45	1	45	45	46	48	524933	4839648	438
R-1545	NP	28	29	1	33	36	40	45	524952	4851795	408
R-1546	NP	25	27	2	32	36	40	45	524958	4852121	397
R-1547	NP	46	47	1	47	47	47	49	524991	4838593	436
R-1548	NP	29	30	1	33	36	40	45	525025	4851688	409
R-1549	NP	22	25	3	31	35	40	45	525028	4854022	395
R-1550	P	33	33	1	35	37	41	45	525044	4850756	414
R-1551	NP	47	47	0	47	47	47	49	525045	4843510	432

REC. ID	STATUS[23]	MODELED TURBINE ONLY SOUND LEVEL (L_{50}, dBA)		DIFFERENCE (REPOWER-EXISTING)[24]	TOTAL SOUND LEVEL, REPOWER COMBINED WITH BACKGROUND				COORDINATES (UTM NAD 83 Z15N)		
		EXISTING	REPOWER		30 dBA BACKGROUND	35 dBA BACKGROUND	40 dBA BACKGROUND	45 dBA BACKGROUND	X(m)	Y(m)	Z (m)
R-1552	NP	45	46	1	46	46	47	48	525051	4839463	440
R-1553	NP	45	46	1	46	46	47	48	525051	4840762	436
R-1554	NP	44	45	0	45	45	46	48	525051	4843779	429
R-1555	NP	26	28	2	32	36	40	45	525093	4852463	396
R-1556	NP	49	46	-2	46	47	47	49	525156	4836911	442
R-1557	NP	44	44	0	44	45	46	48	525194	4839783	438
R-1558	NP	26	28	2	32	36	40	45	525201	4852351	398
R-1559	NP	20	24	4	31	35	40	45	525271	4855141	405
R-1560	NP	17	22	5	31	35	40	45	525273	4855944	403
R-1561	NP	44	45	0	45	45	46	48	525348	4839808	439
R-1562	NP	45	43	-2	43	44	45	47	525362	4837880	441
R-1563	NP	44	43	-1	44	44	45	47	525424	4838132	442
R-1564	NP	25	27	2	32	36	40	45	525658	4852735	398
R-1565	NP	46	46	0	46	47	47	49	525712	4848521	430
R-1566	NP	42	43	0	43	43	44	47	525735	4842051	436
R-1567	NP	47	46	-1	46	46	47	48	525959	4838139	436
R-1568	NP	47	45	-1	45	46	46	48	525974	4838063	438
R-1569	NP	45	45	1	45	46	46	48	526133	4839975	428
R-1570	NP	19	21	2	31	35	40	45	526170	4854828	396
R-1571	NP	23	25	2	31	35	40	45	526198	4853149	403
R-1572	NP	24	26	1	31	35	40	45	526226	4852834	407
R-1573	NP	41	41	0	41	42	43	46	526361	4842104	437
R-1574	NP	26	27	1	32	36	40	45	526504	4852125	422
R-1575	NP	27	28	1	32	36	40	45	526504	4851831	427
R-1576	NP	42	43	0	43	43	44	47	526637	4840091	425

Pleasant Valley Repower Noise Assessment

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