

SOUND LEVEL ASSESSMENT REPORT

Dakota Range III Wind Project Roberts & Grant Counties, South Dakota

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1.0 EXECUTIVE SUMMARY

The Dakota Range III Wind Project (the Project) is a proposed wind power electric generation facility expected to consist of up to 36 wind turbines in Roberts and Grant Counties, South Dakota. Epsilon Associates, Inc. (Epsilon) has been retained by Dakota Range III, LLC (DRIII) to conduct a sound level modeling study for the Project. This report presents results of the study.

A sound level modeling analysis was conducted for 36 proposed wind turbines and a collector substation. All wind turbines for this Project are proposed to be Goldwind GW136-4.2 units. The purpose of this assessment is to predict worst-case sound levels generated by the facility in Roberts and Grant Counties when the wind turbines are operational and to compare the modeling results to applicable limits. Sound levels from wind energy systems (WES) are limited by ordinance to 50 dBA at the closest principal and accessory structures in Roberts County. In Grant County, WES are limited by ordinance to 45 dBA at non-participating, and 50 dBA at participating, residences, businesses, and buildings owned and/or maintained by a governmental entity.

Using the Project specific data provided by DRIII, the L_{eq} sound levels modeled at principal and accessory structures in Roberts County did not exceed 44 dBA. These sound levels are well below the limit of 50 dBA in Roberts County. The L_{eq} sound levels modeled at non-participating structures in Grant County did not exceed 44 dBA and the L_{eq} sound levels modeled at participating structures in Grant County did not exceed 46 dBA. These sound levels are below the respective limits of 45 dBA and 50 dBA in Grant County. Therefore, the Project meets the counties' requirements with respect to sound in the regulations.

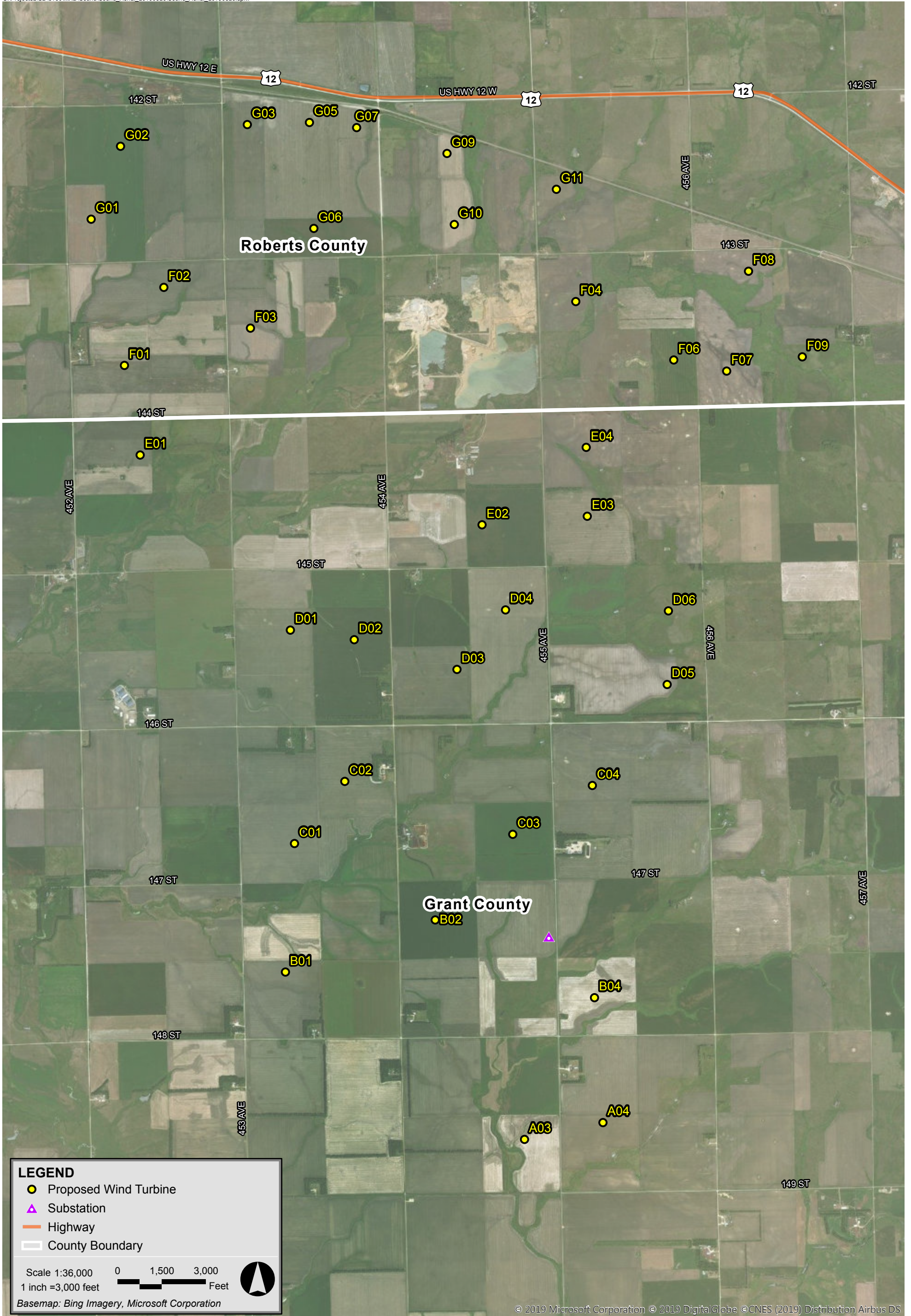
2.0 INTRODUCTION

The Dakota Range III Wind Project to be located in Roberts and Grant Counties, South Dakota will consist of 36 wind turbines and a collector substation. The wind turbines will be Goldwind GW136-4.2 units. The GW136-4.2 wind turbines have a hub height of 110 meters and a rotor diameter of 136 meters. Figure 2-1 shows the locations of the 36 proposed wind turbines over aerial imagery in Roberts and Grant Counties and the substation in Grant County.

A detailed discussion of sound from wind turbines is presented in a white paper prepared by the Renewable Energy Research Laboratory.¹ A few points are repeated herein. Wind turbine noise can originate from two different sources; mechanical sound from the interaction of turbine components and aerodynamic sound produced by the flow of air over the rotor blades. Prior to the 1990's, both sources were significant contributors to wind turbine noise. However, recent advances in wind turbine design have greatly reduced the contribution of mechanical noise. Aerodynamic noise has also been reduced in modern wind turbines due to slower rotational speeds and changes in materials of construction. Aerodynamic noise, in general, is broadband (has contributions from a wide range of frequencies). It originates from encounters of the wind turbine blades with localized airflow inhomogeneities and wakes from other turbine blades and from airflow across the surface of the blades, particularly the front and trailing edges. Aerodynamic sound generally increases with increasing wind speed up to a certain point, then typically remains constant, even with higher wind speeds. However, sound levels in general also increase with increasing wind speed with or without the presence of wind turbines.

This report presents the results of a sound level modeling analysis for the Project. The wind turbines were modeled with the Cadna/A software package using sound data from a Goldwind technical document.

¹ Renewable Energy Research Laboratory, Department of Mechanical and Industrial Engineering, University of Massachusetts at Amherst, Wind Turbine Acoustic Noise, June 2002, amended January 2006.



Dakota Range III Roberts County/Grant County, South Dakota

3.0 SOUND TERMINOLOGY

There are several ways in which sound (noise) levels are measured and quantified. All of them use the logarithmic decibel (dB) scale. The following information defines the sound level measurement terminology used in this analysis.

The decibel scale is logarithmic to accommodate the wide range of sound intensities found in the environment. A property of the decibel scale is that the sound pressure levels of two or more separate sounds are not directly additive. For example, if a sound of 50 dB is added to another sound of 50 dB, the total is only a 3-decibel increase (53 dB), which is equal to doubling in sound energy but not equal to a doubling in decibel quantity (100 dB). Thus, every 3-dB change in sound level represents a doubling or halving of sound energy. Relative to this characteristic, a change in sound levels of less than 3 dB is imperceptible to the human ear.

Another mathematical property of decibels is that if one source of noise is at least 10 dB louder than another source, then the total sound level is simply the sound level of the higher-level source. For example, a sound source at 60 dB plus another sound source at 47 dB is equal to 60 dB.

A sound level meter (SLM) that is used to measure sound is a standardized instrument.² It contains “weighting networks” (e.g., A-, C-, Z-weightings) to adjust the frequency response of the instrument. Frequencies, reported in Hertz (Hz), are detailed characterizations of sounds, often addressed in musical terms as “pitch” or “tone”. The most commonly used weighting network is the A-weighting because it most closely approximates how the human ear responds to sound at various frequencies. The A-weighting network is the accepted scale used for community sound level measurements; therefore, sounds are frequently reported as detected with a sound level meter using this weighting. A-weighted sound levels emphasize middle frequency sounds (i.e., middle pitched – around 1,000 Hz), and de-emphasize low and high frequency sounds. These sound levels are reported in decibels designated as “dBA”. Sound pressure levels for some common indoor and outdoor environments are shown in Figure 3-1.

Because the sounds in the environment vary with time, many different sound metrics may be used to quantify them. There are two typical methods used for describing variable sounds. These are exceedance levels and equivalent levels, both of which are derived from a large number of moment-to-moment A-weighted sound pressure level measurements. Exceedance levels are values from the cumulative amplitude distribution of all of the sound levels observed during a measurement period. Exceedance levels are designated L_n , where “n” is a value (typically an integer between 1 and 99) in terms of percentage. Equivalent

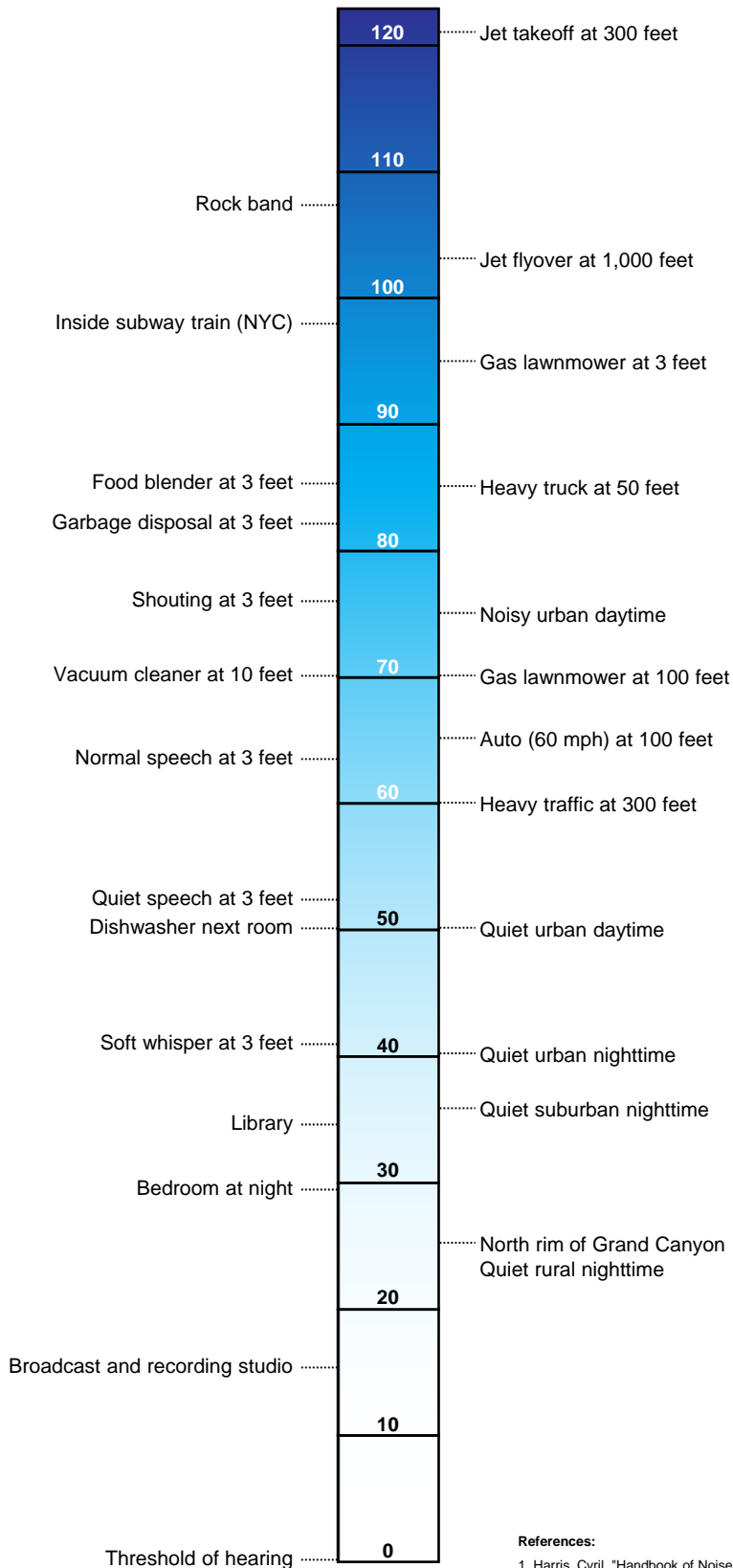
² *American National Standard Specification for Sound Level Meters*, ANSI S1.4-1983 (R2006), published by the Standards Secretariat of the Acoustical Society of America, Melville, NY.

levels are designated L_{eq} and quantify a hypothetical steady sound that would have the same energy as the actual fluctuating sound observed. The two sound level metrics that are commonly reported in community noise monitoring and/or utilized in this report are described below.

- ◆ L_{10} is the sound level exceeded only 10 percent of the time. It is close to the maximum level observed during the measurement period. The L_{10} is sometimes called the intrusive sound level because it is caused by occasional louder sounds like those from passing motor vehicles.
- ◆ L_{90} is the sound level in dBA exceeded 90 percent of the time during a measurement period. The L_{90} is close to the lowest sound level observed. It is essentially the same as the residual sound level, which is the sound level observed when there are no obvious nearby intermittent noise sources.
- ◆ L_{eq} , the equivalent level, is the level of a hypothetical steady sound that would have the same energy (*i.e.*, the same time-averaged mean square sound pressure) as the actual fluctuating sound observed. The equivalent level is designated L_{eq} and is commonly A-weighted. The equivalent level represents the time average of the fluctuating sound pressure, but because sound is represented on a logarithmic scale and the averaging is done with time-averaged mean square sound pressure values, the L_{eq} is mostly determined by occasional loud noises.

Sound Pressure Level, dBA

COMMON INDOOR SOUNDS **COMMON OUTDOOR SOUNDS**



References:

- Harris, Cyril, "Handbook of Noise Acoustical Measurements and Noise Control", p 1-10., 1998
- "Controlling Noise", USAF, AFMC, AFDT, Elgin AFB, Fact Sheet, August 1996
- California Dept. of Trans., "Technical Noise Supplement", Oct, 1998

4.0 NOISE REGULATIONS

4.1 Federal Regulations

There are no federal noise regulations applicable to this Project.

4.2 South Dakota State Regulations

There are no state noise regulations applicable to this Project.

4.3 Local Regulations

4.3.1 *Roberts County*

The section of the proposed Dakota Range III Wind Project within Roberts County, SD is subject to the following sound level requirements in Section 1603.03(5) of Ordinance #20 of Roberts County, Noise subsection of General Provisions for Wind Energy System (WES) Requirements:

Noise level shall not exceed 50 dB (A), average A-weighted Sound pressure³ including constructive interference effects as measured at the exterior wall⁴ of the closest principal and accessory structures.

All receptors were evaluated in this analysis against the 50 dBA limit.

4.3.2 *Grant County*

The section of the proposed Dakota Range III Wind Project within Grant County, SD is subject to the following sound level requirements in Section 1211.04(14) of the Grant County Compiled Zoning Ordinances, Noise subsection of General Provisions for Wind Energy Systems (WES):

Noise level shall not exceed 45 dBA, average A-weighted Sound pressure⁵ including constructive interference effects measured at twenty-five (25) feet

³ Epsilon assumes the ordinance intends to read “sound pressure level” reported in dBA, whereas “sound pressure” is reported in units of Pascals.

⁴ If sound levels were measured directly on or in front of an exterior wall, the sound level would be artificially higher due to reflections. It is assumed that this is not the intent of the ordinance; therefore, it is assumed compliance would be determined approximately 50 feet from the wall in the direction of the source.

⁵ Epsilon assumes the ordinance intends to read “sound pressure level” reported in dBA, whereas “sound pressure” is reported in units of Pascals.

from the perimeter of the existing non-participating residences, businesses, and buildings owned and/or maintained by a governmental entity.

Noise level shall not exceed 50 dBA, average A-weighted Sound pressure⁶ including constructive interference effects measured at twenty-five (25) feet from the perimeter of participating residences, businesses, and buildings owned and/or maintained by a governmental entity.

Noise level measurements shall be made with a sound level meter using the A-weighting scale, in accordance with standards promulgated by the American National Standards Institute. A L90 measurement shall be used and have a measurement period no less than ten (10) minutes unless otherwise specified by the Board of Adjustment.

All non-participating and participating receptors were evaluated in this analysis against the 45 dBA and 50 dBA limits, respectively.

⁶ Epsilon assumes the ordinance intends to read “sound pressure level” reported in dBA, whereas “sound pressure” is reported in units of Pascals.

5.0 FUTURE CONDITIONS

5.1 Equipment and Operating Conditions

The sound level analysis includes 36 wind turbines. Global coordinates for the 36 wind turbines are provided in Appendix A. All wind turbines are Goldwind GW136-4.2 units. The GW136-4.2 wind turbines have a hub height of 110 meters and a rotor diameter of 136 meters. A technical report from Goldwind⁷ was provided by DRIII which documented the expected sound power levels associated with the Goldwind GW136-4.2 wind turbine. Octave band sound levels were calculated from the one-third octave band levels representing the maximum sound power level for the sound modeling.

In addition to the wind turbines, there will be a collector substation associated with the Project. The substation is proposed to be located northwest of wind turbine #B04 as shown in Figure 5-1. One 167 megavolt-ampere (MVA) transformer is proposed for the substation. Epsilon has estimated octave-band sound power levels using the MVA rating provided by DRIII and techniques in the Electric Power Plant Environmental Noise Guide (Edison Electric Institute), Table 4.5 Sound Power Levels of Transformers. Table 5-1 below summarizes the sound power level data used in the modeling.

Table 5-1 Modeled Substation Transformer Sound Power Levels

Maximum Rating	Broadband dBA	Sound Power Levels per Octave-Band Center Frequency [Hz]								
		31.5 dB	63 dB	125 dB	250 dB	500 dB	1k dB	2k dB	4k dB	8k dB
167 MVA	102	98	104	106	101	101	95	90	85	78

5.2 Modeling Methodology

The noise impacts associated with the proposed wind turbines were predicted using the Cadna/A noise calculation software developed by DataKustik GmbH. This software uses the ISO 9613-2 international standard for sound propagation (Acoustics - Attenuation of sound during propagation outdoors - Part 2: General method of calculation). The benefits of this software are a more refined set of computations due to the inclusion of topography, ground attenuation, multiple building reflections, drop-off with distance, and atmospheric absorption. The Cadna/A software allows for octave band calculation of sound from multiple sources as well as computation of diffraction.

Inputs and significant parameters employed in the model are described below:

⁷ Goldwind International Holdings (HK) Limited, Description of GW136-4.2MW Acoustic Performance, January 24, 2019.

- ◆ *Project Layout:* A project layout dated August 12, 2019 was provided by DRIII. The 36 proposed wind turbines were input into the model. The substation transformer location was provided by DRIII on April 27, 2018. The proposed wind turbines and substation are shown in Figure 5-1.
- ◆ *Modeling Locations:* A modeling receptor dataset was provided by DRIII on March 21, 2019. This dataset included 204 occupied and 369 unoccupied structures. The total 573 receptors from this dataset (210 in Roberts County, 363 in Grant County) were input into the Cadna/A model. These were all conservatively evaluated as sensitive receptors and modeled as discrete points at a height of 1.5 meters above ground level to mimic the ears of a typical standing person. These locations are shown in Figure 5-1. Participation status for each of the 573 modeling receptors was assigned based on information provided in the dataset. The receptors are indicated as either participating or non-participating on Figure 5-1.
- ◆ *Terrain Elevation:* Elevation contours for the modeling domain were directly imported into Cadna/A which allowed for consideration of terrain shielding where appropriate. The terrain height contour elevations for the modeling domain were generated from elevation information derived from the National Elevation Dataset (NED) developed by the U.S. Geological Survey.
- ◆ *Source Sound Levels:* Octave band sound power levels for the Goldwind GW136-4.2 wind turbines, calculated from the provided one-third octave band levels in the technical report, were input to the model. These sound levels represent “worst-case” operational sound level emissions. The substation transformer sound power levels as presented in Table 5-1 were input to the model.
- ◆ *Uncertainty factor:* The Goldwind acoustical documentation presented an uncertainty factor of ± 1.0 dB for all one-third octave band data; therefore, this uncertainty was added to the sound power levels for each wind turbine included in the modeling.
- ◆ *Ground Attenuation:* Spectral ground absorption was calculated using a G-factor of 0.5 which corresponds to “mixed ground” consisting of both hard and porous ground cover.

The highest wind turbine sound power level including uncertainty was input into Cadna/A to model wind turbine generated sound pressure levels during conditions when worst-case sound power levels are expected. Sound pressure levels due to operation of all 36 wind turbines and the substation transformer were conservatively modeled at 573 receptors in Roberts and Grant Counties. In addition to modeling at discrete points, sound levels were also modeled throughout a large grid of receptor points, each spaced 20 meters apart to allow for the generation of sound level isolines.

Several modeling assumptions inherent in the ISO 9613-2 calculation methodology, or selected as conditional inputs by Epsilon, were implemented in the Cadna/A model to ensure conservative results (i.e., higher sound levels), and are described below:

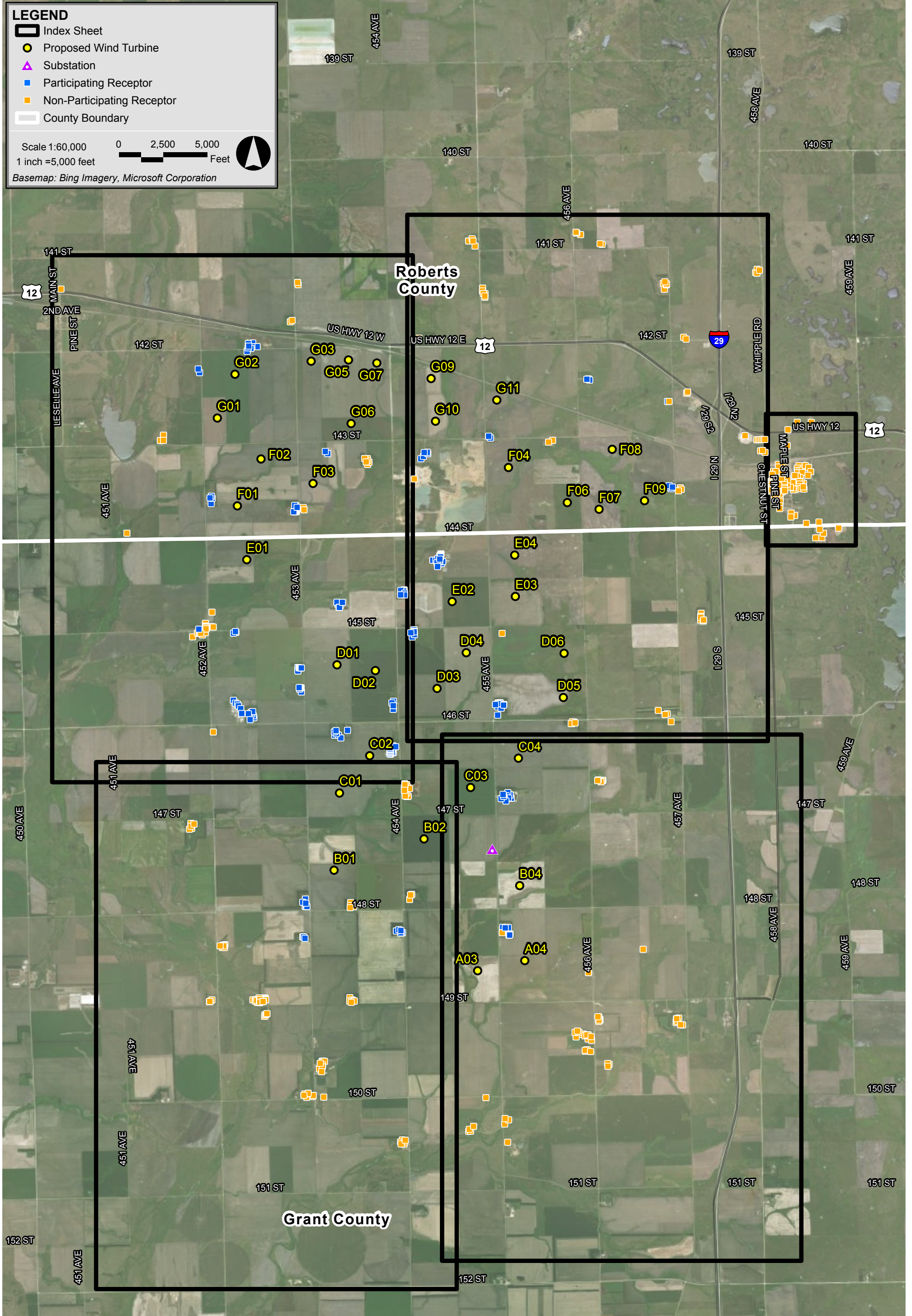
- ◆ All modeled sources were assumed to be operating simultaneously and at the design wind speed corresponding to the greatest sound level impacts.
- ◆ As per ISO 9613-2, the model assumed favorable conditions for sound propagation, corresponding to a moderate, well-developed ground-based temperature inversion, as might occur on a calm, clear night or equivalently downwind propagation.
- ◆ Meteorological conditions assumed in the model (temperature = 10°C & relative humidity = 70%) were selected to minimize atmospheric attenuation in the 500 Hz and 1 kHz octave bands where the human ear is most sensitive.
- ◆ No additional attenuation due to tree shielding, air turbulence, or wind shadow effects was considered in the model.

5.3 Sound Level Results

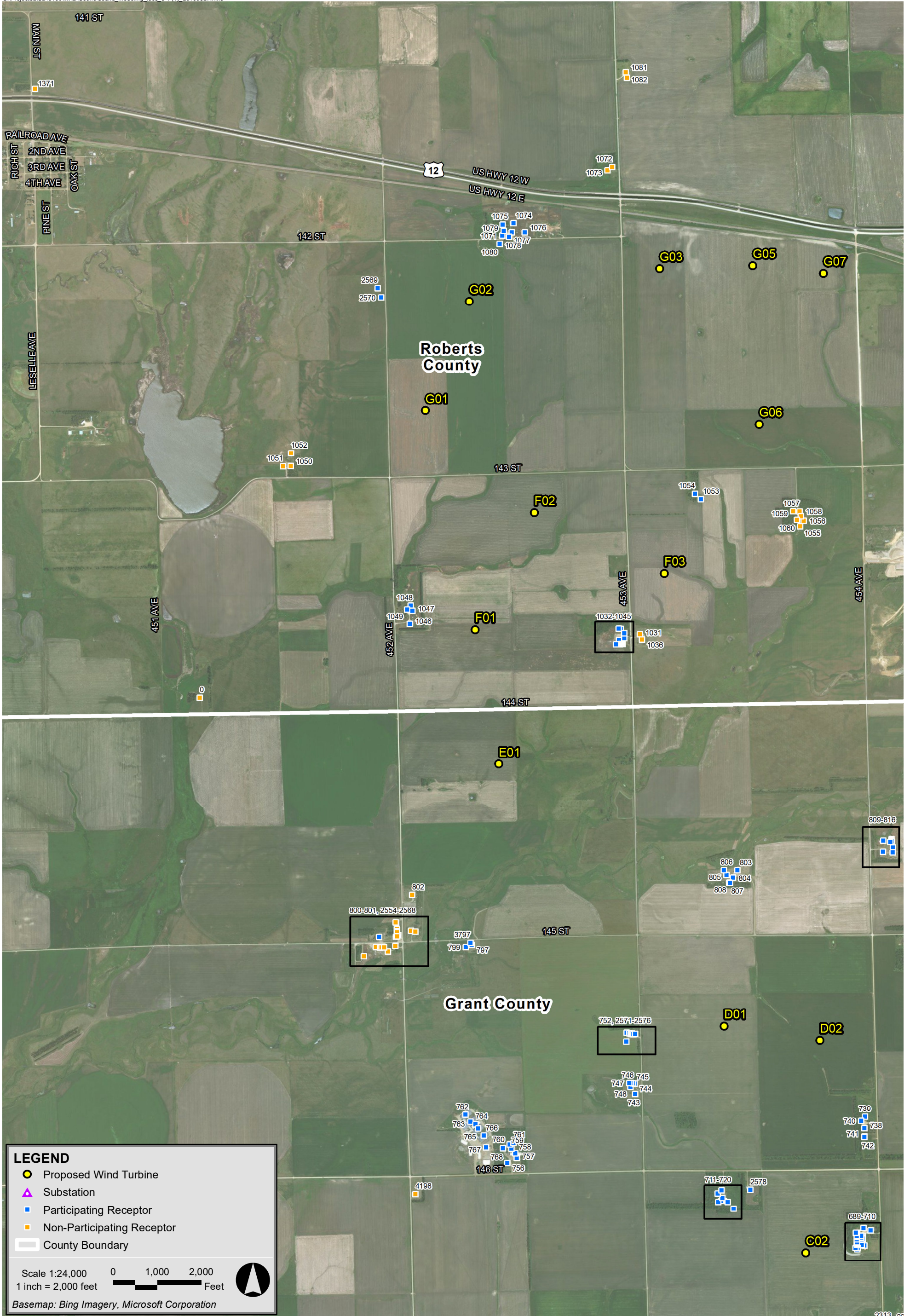
Table B-1 in Appendix B shows the predicted “Project-Only” broadband (dBA) L_{eq} sound levels under conditions specified in the previous section for the 210 receptors in Roberts County. These sound levels range from 28 to 44 dBA.

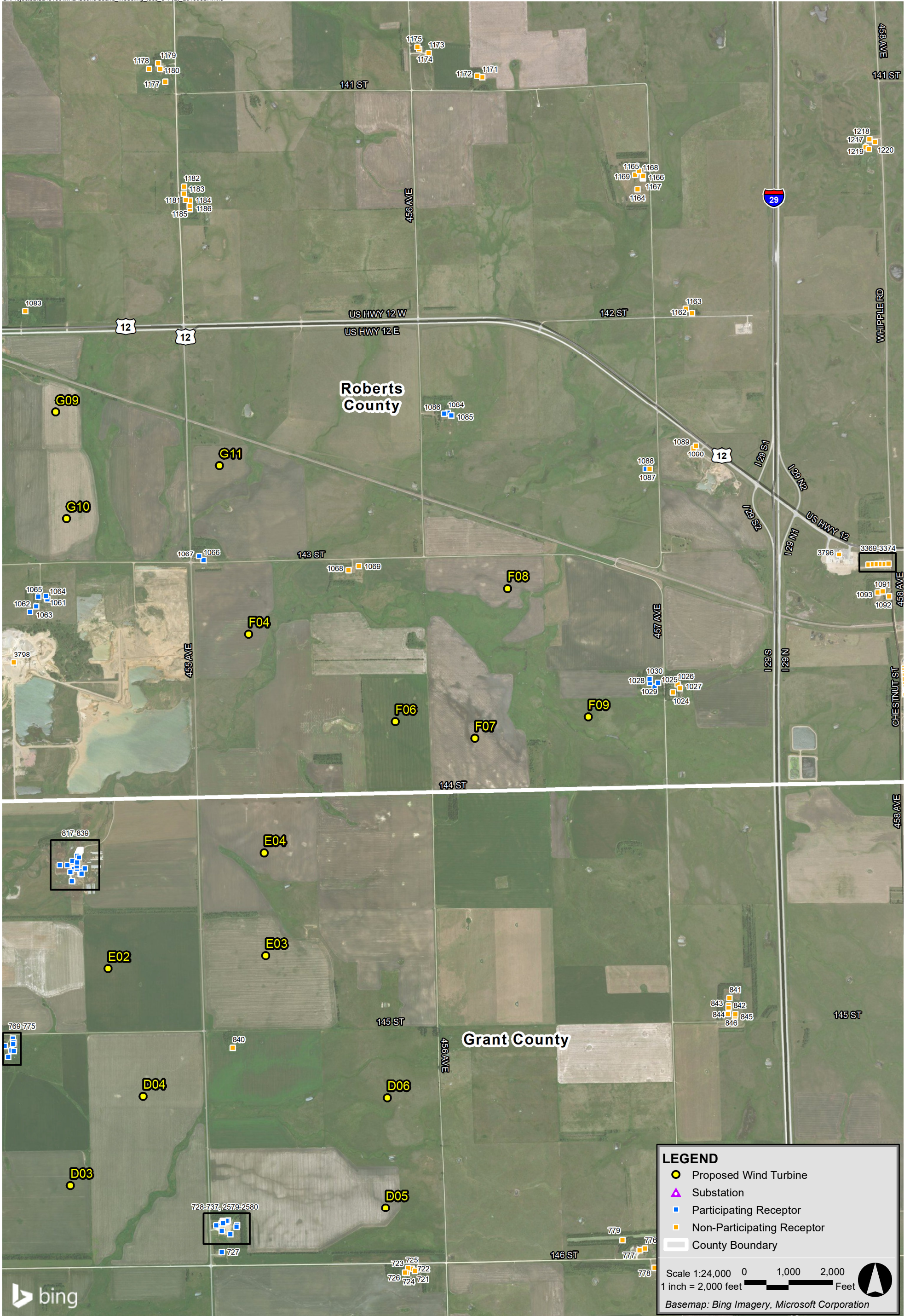
Table B-2 in Appendix B shows the predicted “Project-Only” broadband (dBA) L_{eq} sound levels for the 363 receptors in Grant County. These sound levels range from 26 to 46 dBA.

In addition to the 573 receptor points, L_{eq} sound level isolines generated from the modeling grid are presented in Figure 5-2.



Dakota Range III Roberts County/Grant County, South Dakota





Dakota Range III Roberts County/Grant County, South Dakota







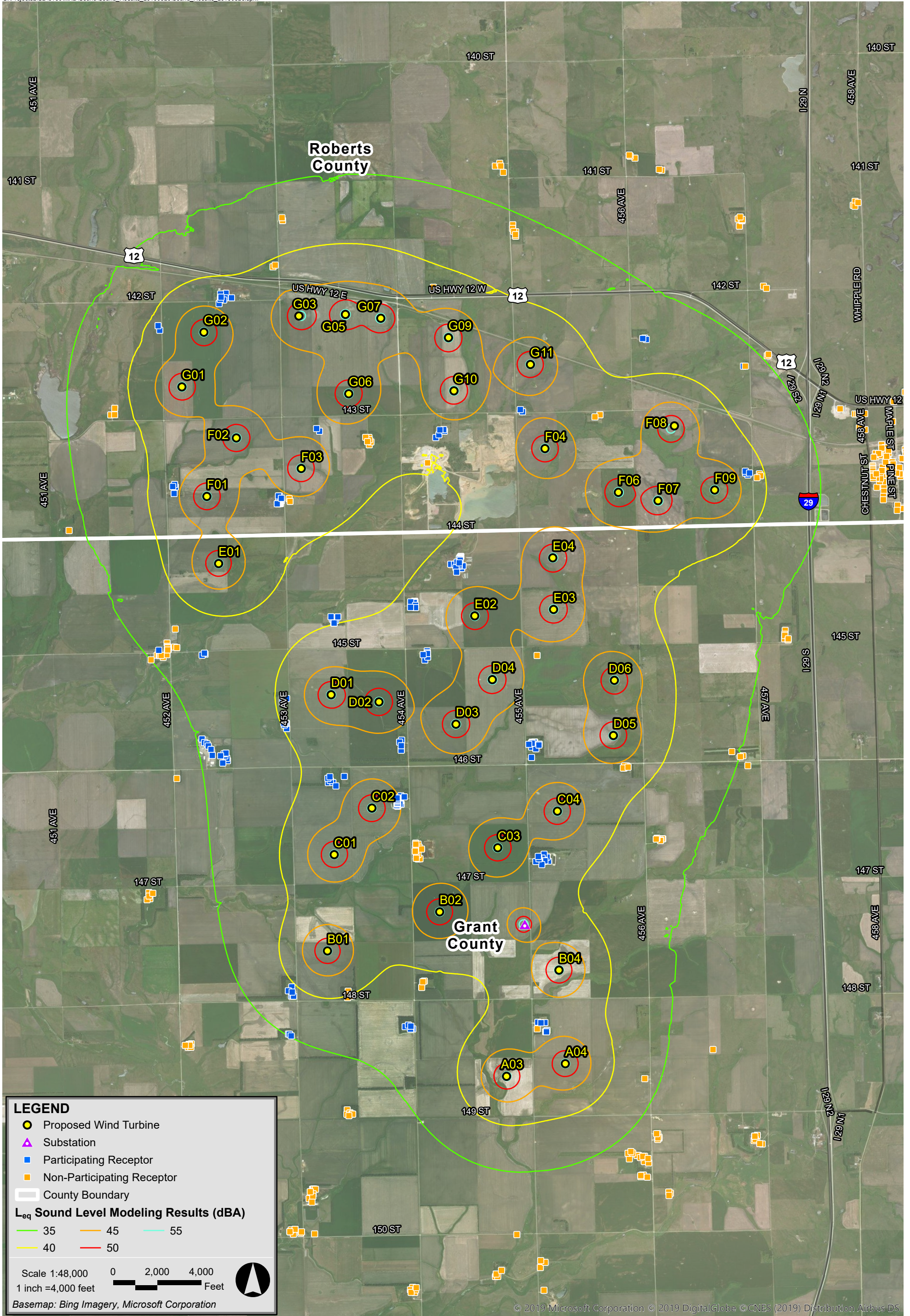
LEGEND

- Proposed Wind Turbine
- ▲ Substation
- Participating Receptor
- Non-Participating Receptor
- County Boundary

Scale 1:6,000
1 inch = 500 feet

0 250 500 Feet

Basemap: Bing Imagery, Microsoft Corporation



Dakota Range III Roberts County/Grant County, South Dakota

6.0 CONSTRUCTION NOISE

The majority of the construction activity related to the Dakota Range III Wind Project will occur around each of the wind turbine sites. By its very nature, construction activity moves around the site. Full construction activity will generally occur at one wind turbine site at a time, although there will be some overlap at adjacent sites for maximum efficiency. There are generally three phases of construction at a wind energy project – excavation, foundations, and turbine erection. Table 6-1 presents the equipment sound levels for the louder pieces of construction equipment expected to be used at this site along with their phase of construction. Reference sound source information in Table 6-1 was obtained from either Epsilon field measurements or the FHWA's Roadway Construction Noise Model database.

Construction of the Project is expected to take multiple months. Construction of a single wind turbine from excavation to foundation pouring to turbine erection is roughly a three week process. However, work will not proceed in that order for each wind turbine to be erected. For example, all foundations will typically be poured before any turbine erection work begins. Excavation work is expected to occur from early morning to the evening. Concrete foundation work and turbine erection work could extend into the overnight hours depending on the weather and timing of a concrete pour which must be continuous. Excavation work will typically be daytime only.

Table 6-1 Sound Levels for Construction Noise Sources

Phase	Equipment	Sound Level at 50 feet (dBA)
Excavation	Grader	85
Excavation	Bulldozer	82
Excavation	Front-end loader	79
Excavation	Backhoe	78
Excavation	Dump truck	76
Excavation	Roller	80
Excavation	Excavator	81
Excavation	Rock drill	89
Foundation	Concrete mixer truck	79
Foundation	Concrete pump truck	81
Foundation	Concrete batch plant	83
Turbine erection	Large crane #1	81
Turbine erection	Large crane #2	81
Turbine erection	Component delivery truck	84
Turbine erection	Air compressor	78

7.0 EVALUATION OF SOUND LEVELS

7.1 Modeled Sound Levels

All modeled sound levels, as output from Cadna/A and presented in Appendix B, are A-weighted equivalent sound levels (L_{eq} , dBA).

7.2 Roberts County Evaluation

The Project is subject to the requirements contained in the zoning ordinance of Roberts County, South Dakota for WES. The sound level limit in this regulation for a WES is 50 dBA at the closest principal and accessory structures. The predicted worst-case L_{eq} sound levels from the Dakota Range III Wind Project are below the 50 dBA limit at all modeled structures in Roberts County. A review of Table B-1 in Appendix B shows the highest L_{eq} sound level for an occupied structure to be 44 dBA. Therefore, the Project meets the requirements with respect to sound in the county regulation.

7.3 Grant County Evaluation

The Project is subject to the requirements contained in the zoning ordinance for Grant County, South Dakota for WES. The sound level limits in this regulation for a WES are 45 dBA at 25 feet from the perimeter of non-participating residences, businesses, and buildings owned and/or maintained by a governmental entity and 50 dBA at 25 feet from the perimeter of participating residences, businesses, and buildings owned and/or maintained by a governmental entity. The predicted L_{eq} sound levels modeled at non-participating structures in Grant County did not exceed 44 dBA and the L_{eq} sound levels modeled at participating structures in Grant County did not exceed 46 dBA. These sound levels are below the respective limits of 45 dBA and 50 dBA in Grant County. A review of Table B-2 in Appendix B shows the highest L_{eq} sound level for an occupied structure to be 44 dBA. Therefore, the Project meets the requirements with respect to sound in the county regulation.

8.0 CONCLUSIONS

A comprehensive sound level analysis was conducted for the proposed Dakota Range III Project within Roberts and Grant Counties. A total of 36 wind turbines are proposed for this Project. Sound levels resulting from the operation of all 36 wind turbines were calculated at 573 receptor points (i.e., existing off-site residences, businesses, churches, and buildings owned and/or maintained by a governmental entity), and isolines were generated from a grid encompassing the area surrounding the wind turbines using the proposed layout. The L_{eq} sound levels modeled at receptors in Roberts County were at or below 44 dBA. Sound levels modeled at non-participating receptors in Grant County were at or below 44 dBA and sound levels modeled at participating receptors in Grant County were at or below 46 dBA. All L_{eq} sound levels are below the respective county limits. Therefore, the Project meets the requirements with respect to sound in the regulations.

Appendix A

Wind Turbine Coordinates

Table A-1: Wind Turbine Coordinates (Layout Date: August 12, 2019)

Wind Turbine ID	Coordinates NAD83 UTM Zone 14N (meters)	
	X (Easting)	Y (Northing)
A03	648550.55	5010167.89
A04	649361.55	5010341.75
B01	646078.29	5011898.34
B02	647627.16	5012437.01
B04	649274.15	5011633.29
C01	646172.00	5013227.00
C02	646692.12	5013869.38
C03	648428.99	5013322.19
C04	649252.00	5013827.00
D01	646129.26	5015433.54
D02	646789.72	5015334.55
D03	647852.00	5015027.00
D04	648354.10	5015642.49
D05	650025.44	5014871.27
D06	650038.45	5015632.43
E01	644576.16	5017243.74
E02	648111.37	5016522.39
E03	649199.33	5016610.85
E04	649188.49	5017323.04
F01	644413.60	5018170.33
F02	644820.83	5018977.35
F03	645716.57	5018555.79
F04	649080.58	5018830.64
F06	650093.66	5018226.66
F07	650640.88	5018111.76
F08	650820.16	5019104.17
F09	651423.03	5018259.05
G01	644069.37	5019682.13
G02	644372.97	5020436.04
G03	645711.50	5020663.11
G05	646326.44	5020682.18
G06	646372.00	5019587.00
G07	646814.64	5020629.19
G09	647748.85	5020361.86
G10	647824.65	5019627.47
G11	648880.05	5019991.34

Appendix B

Predicted Wind Energy System Sound Levels at Receptors

Table B-1: Sensitive Receptor Results by Receptor - Roberts County

Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
0	642512.13	5017700.01	Non-Participating	Yes	34
669	654426.49	5017892.36	Non-Participating	Yes	30
670	654209.18	5017869.34	Non-Participating	Yes	30
956	654009.01	5018003.84	Non-Participating	Yes	31
957	653947.62	5018047.23	Non-Participating	Yes	31
958	653727.49	5018884.37	Non-Participating	Yes	32
959	653644.94	5018764.78	Non-Participating	Yes	32
960	653647.06	5018716.10	Non-Participating	Yes	32
961	653686.22	5018751.02	Non-Participating	Yes	32
962	653727.49	5018733.03	Non-Participating	Yes	32
963	653732.78	5018803.94	Non-Participating	Yes	32
964	653775.12	5018820.87	Non-Participating	Yes	32
965	653779.35	5018775.37	Non-Participating	Yes	32
966	653796.28	5018756.32	Non-Participating	Yes	31
967	653812.16	5018729.86	Non-Participating	Yes	31
968	653789.93	5018684.35	Non-Participating	Yes	32
969	653801.57	5018650.48	Non-Participating	Yes	32
970	653830.15	5018654.72	Non-Participating	Yes	31
971	653872.48	5018648.37	Non-Participating	Yes	31
972	653824.86	5018766.90	Non-Participating	Yes	31
973	653821.68	5018837.81	Non-Participating	Yes	31
974	653773.00	5018844.16	Non-Participating	Yes	31
975	653729.61	5018837.81	Non-Participating	Yes	32
976	654082.03	5018861.09	Non-Participating	Yes	31
977	654097.91	5018818.76	Non-Participating	Yes	31
978	654051.34	5018819.82	Non-Participating	Yes	31
979	654060.87	5018781.72	Non-Participating	Yes	31
980	654100.02	5018783.83	Non-Participating	Yes	31
981	654098.97	5018738.32	Non-Participating	Yes	31
982	654058.75	5018740.44	Non-Participating	Yes	31
983	654134.95	5018784.89	Non-Participating	Yes	30
984	654136.01	5018744.67	Non-Participating	Yes	31
985	654104.26	5018656.83	Non-Participating	Yes	31
986	654054.52	5018682.23	Non-Participating	Yes	31
987	654011.12	5018692.82	Non-Participating	Yes	31
988	654193.16	5018864.27	Non-Participating	Yes	30
989	654247.13	5018830.40	Non-Participating	Yes	30
990	654284.17	5018758.43	Non-Participating	Yes	30
991	654237.61	5018695.99	Non-Participating	Yes	30
992	654160.35	5018557.35	Non-Participating	Yes	31
993	654118.02	5018592.27	Non-Participating	Yes	31
994	654088.38	5018585.92	Non-Participating	Yes	31
995	654096.85	5018546.77	Non-Participating	Yes	31
996	654075.68	5018498.08	Non-Participating	Yes	31
997	654075.68	5018466.33	Non-Participating	Yes	31
998	654167.76	5018458.92	Non-Participating	Yes	31
999	654156.12	5018498.08	Non-Participating	Yes	31

Table B-1: Sensitive Receptor Results by Receptor - Roberts County

Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
1000	654013.24	5018454.69	Non-Participating	Yes	31
1001	653986.78	5018446.22	Non-Participating	Yes	31
1002	653980.43	5018480.09	Non-Participating	Yes	31
1003	653975.14	5018568.99	Non-Participating	Yes	31
1004	653933.87	5018491.73	Non-Participating	Yes	31
1005	653876.72	5018492.79	Non-Participating	Yes	31
1006	653880.95	5018543.59	Non-Participating	Yes	31
1007	653833.32	5018607.09	Non-Participating	Yes	31
1008	653789.93	5018604.97	Non-Participating	Yes	32
1009	653789.93	5018572.17	Non-Participating	Yes	32
1010	653785.70	5018529.83	Non-Participating	Yes	32
1011	653792.05	5018446.22	Non-Participating	Yes	32
1012	653793.11	5018411.30	Non-Participating	Yes	32
1013	653755.01	5018415.53	Non-Participating	Yes	32
1014	653746.54	5018463.16	Non-Participating	Yes	32
1015	653702.09	5018464.22	Non-Participating	Yes	32
1016	653707.38	5018314.99	Non-Participating	Yes	32
1017	653758.18	5018316.05	Non-Participating	Yes	32
1018	653751.83	5018374.26	Non-Participating	Yes	32
1019	653660.82	5018297.00	Non-Participating	Yes	32
1020	653758.18	5018239.85	Non-Participating	Yes	32
1021	653751.83	5018171.06	Non-Participating	Yes	32
1022	653750.77	5018124.49	Non-Participating	Yes	32
1023	653942.33	5017978.44	Non-Participating	Yes	31
1024	652007.10	5018428.62	Non-Participating	Yes	41
1025	651904.31	5018493.71	Participating	Yes	42
1026	652040.04	5018481.80	Non-Participating	No	41
1027	652055.92	5018455.21	Non-Participating	No	41
1028	651881.29	5018466.72	Participating	No	43
1029	651848.75	5018492.91	Participating	No	43
1030	651846.37	5018518.31	Participating	No	43
1031	645549.34	5018139.28	Non-Participating	No	44
1032	645441.78	5018112.69	Participating	No	44
1033	645405.27	5018099.60	Participating	No	43
1034	645417.57	5018175.80	Participating	No	44
1035	645401.70	5018177.38	Participating	No	44
1036	645562.04	5018101.98	Non-Participating	Yes	44
1037	645441.78	5018144.84	Participating	Yes	44
1038	645429.08	5018071.42	Participating	No	43
1039	645424.32	5018071.42	Participating	No	43
1040	645417.57	5018071.42	Participating	No	43
1041	645412.41	5018071.02	Participating	No	43
1042	645405.27	5018070.62	Participating	No	43
1043	645398.13	5018069.83	Participating	No	43
1044	645391.78	5018069.83	Participating	No	43
1045	645384.63	5018069.43	Participating	No	43
1046	643962.03	5018210.66	Participating	No	44

Table B-1: Sensitive Receptor Results by Receptor - Roberts County

Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
1047	643979.49	5018300.61	Participating	No	44
1048	643968.38	5018335.54	Participating	No	44
1049	643942.45	5018308.02	Participating	Yes	43
1050	643141.20	5019297.31	Non-Participating	Yes	38
1051	643087.63	5019295.33	Non-Participating	No	38
1052	643142.39	5019386.61	Non-Participating	No	38
1053	645969.02	5019070.40	Participating	No	44
1054	645928.01	5019106.78	Participating	No	44
1055	646654.96	5018883.21	Non-Participating	No	42
1056	646678.77	5018921.57	Non-Participating	No	42
1057	646650.99	5018984.41	Non-Participating	No	43
1058	646657.60	5018952.66	Non-Participating	No	42
1059	646606.01	5018985.74	Non-Participating	No	43
1060	646631.14	5018927.53	Non-Participating	Yes	42
1061	647630.61	5019088.92	Participating	Yes	43
1062	647573.72	5018982.43	Participating	No	42
1063	647616.72	5019021.46	Participating	No	42
1064	647692.13	5019070.40	Participating	No	43
1065	647682.86	5019092.23	Participating	No	43
1066	648770.30	5019338.96	Participating	No	44
1067	648739.88	5019368.72	Participating	Yes	44
1068	649770.43	5019268.18	Non-Participating	Yes	42
1069	649840.55	5019297.28	Non-Participating	No	42
1071	644598.95	5020889.63	Participating	Yes	43
1072	645356.99	5021362.71	Non-Participating	Yes	41
1073	645326.03	5021338.90	Non-Participating	No	41
1074	644677.53	5020973.77	Participating	No	42
1075	644602.13	5020963.45	Participating	No	42
1076	644754.53	5020911.06	Participating	No	42
1077	644664.04	5020911.86	Participating	No	43
1078	644646.58	5020880.90	Participating	No	43
1079	644610.06	5020920.59	Participating	Yes	43
1080	644582.28	5020830.89	Participating	No	44
1081	645450.73	5022016.36	Non-Participating	Yes	37
1082	645459.86	5021977.07	Non-Participating	No	37
1083	647540.28	5021057.51	Non-Participating	No	42
1084	650455.16	5020356.05	Participating	No	38
1085	650478.98	5020337.00	Participating	No	38
1086	650430.29	5020350.23	Participating	Yes	38
1087	651845.75	5019968.54	Non-Participating	Yes	36
1088	651820.09	5019967.22	Participating	No	36
1089	652148.21	5020111.75	Non-Participating	No	35
1090	652165.41	5020130.93	Non-Participating	No	35
1091	653419.21	5019117.51	Non-Participating	No	32
1092	653498.58	5019091.05	Non-Participating	No	32
1093	653454.27	5019124.78	Non-Participating	Yes	32
1095	653878.92	5019204.82	Non-Participating	Yes	31

Table B-1: Sensitive Receptor Results by Receptor - Roberts County

Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
1096	653892.81	5019481.31	Non-Participating	Yes	31
1097	654050.90	5019609.63	Non-Participating	Yes	30
1098	654293.66	5019607.65	Non-Participating	Yes	30
1162	652138.05	5021042.12	Non-Participating	Yes	32
1163	652096.38	5021072.55	Non-Participating	No	32
1164	651763.66	5021900.70	Non-Participating	No	31
1165	651747.13	5021999.92	Non-Participating	No	31
1166	651799.38	5021975.44	Non-Participating	No	31
1167	651800.70	5021983.38	Non-Participating	No	31
1168	651802.69	5021991.98	Non-Participating	No	31
1169	651774.25	5022027.04	Non-Participating	Yes	31
1171	650692.76	5022671.96	Non-Participating	No	31
1172	650657.04	5022683.21	Non-Participating	No	31
1173	650323.00	5022839.31	Non-Participating	No	30
1174	650256.86	5022865.77	Non-Participating	No	30
1175	650244.29	5022880.98	Non-Participating	Yes	30
1177	648505.80	5022642.72	Non-Participating	No	33
1178	648394.67	5022729.51	Non-Participating	No	33
1179	648456.06	5022768.67	Non-Participating	No	33
1180	648470.34	5022730.04	Non-Participating	Yes	33
1181	648648.67	5021826.75	Non-Participating	Yes	36
1182	648635.97	5021919.35	Non-Participating	No	36
1183	648632.80	5021869.08	Non-Participating	No	36
1184	648676.72	5021823.04	Non-Participating	No	36
1185	648673.54	5021782.83	Non-Participating	Yes	36
1186	648675.66	5021761.13	Non-Participating	No	36
1217	653334.91	5022188.01	Non-Participating	No	28
1218	653362.03	5022242.91	Non-Participating	No	28
1219	653358.73	5022176.11	Non-Participating	No	28
1220	653401.72	5022226.38	Non-Participating	Yes	28
1371	641377.12	5021901.76	Non-Participating	No	29
2464	653885.69	5018617.60	Non-Participating	Yes	31
2569	643740.41	5020526.47	Participating	Yes	41
2570	643763.90	5020463.66	Participating	No	42
3369	653357.06	5019308.47	Non-Participating	Yes	32
3370	653386.66	5019309.46	Non-Participating	Yes	32
3371	653412.09	5019310.84	Non-Participating	Yes	32
3372	653442.11	5019311.42	Non-Participating	Yes	32
3373	653467.54	5019311.97	Non-Participating	Yes	32
3374	653494.22	5019312.94	Non-Participating	Yes	32
3769	653603.40	5018596.29	Non-Participating	Yes	32
3770	653604.82	5018578.43	Non-Participating	Yes	32
3771	653605.25	5018559.25	Non-Participating	Yes	32
3772	653606.32	5018544.38	Non-Participating	Yes	32
3773	653606.78	5018519.91	Non-Participating	Yes	32
3774	653738.12	5018572.85	Non-Participating	Yes	32
3775	653833.37	5018573.34	Non-Participating	Yes	31

Table B-1: Sensitive Receptor Results by Receptor - Roberts County

Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
3776	653746.30	5018527.91	Non-Participating	Yes	32
3777	653783.39	5018643.52	Non-Participating	Yes	32
3778	653830.24	5018539.59	Non-Participating	Yes	31
3779	653824.23	5018486.98	Non-Participating	Yes	32
3780	653711.74	5018495.32	Non-Participating	Yes	32
3781	653836.59	5018462.57	Non-Participating	Yes	31
3782	653835.10	5018431.80	Non-Participating	Yes	31
3783	653698.14	5018375.86	Non-Participating	Yes	32
3784	653712.83	5018413.97	Non-Participating	Yes	32
3785	653654.57	5018423.59	Non-Participating	Yes	32
3786	653610.61	5018419.39	Non-Participating	Yes	32
3787	653608.95	5018483.21	Non-Participating	Yes	32
3788	653609.72	5018462.71	Non-Participating	Yes	32
3789	653612.12	5018445.52	Non-Participating	Yes	32
3790	653731.26	5018526.38	Non-Participating	Yes	32
3791	653653.83	5018482.45	Non-Participating	Yes	32
3792	653684.55	5018762.40	Non-Participating	Yes	32
3793	653822.23	5018807.10	Non-Participating	Yes	31
3794	653619.64	5018711.28	Non-Participating	Yes	32
3795	653796.87	5018723.96	Non-Participating	Yes	31
3796	653153.96	5019379.44	Non-Participating	Yes	33
3798	647460.57	5018633.20	Non-Participating	Yes	40

Table B-2: Sensitive Receptor Results by Receptor - Grant County

Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
569	650655.61	5009314.95	Non-Participating	No	33
570	650655.44	5009322.09	Non-Participating	No	33
571	650655.88	5009328.95	Non-Participating	No	33
572	650812.37	5008555.08	Non-Participating	No	30
573	650357.33	5009074.91	Non-Participating	No	33
574	650361.64	5009076.05	Non-Participating	No	33
575	650367.78	5009075.16	Non-Participating	No	33
576	650373.62	5009074.85	Non-Participating	No	33
577	650353.13	5009075.55	Non-Participating	No	33
578	650418.63	5008803.51	Non-Participating	No	32
579	650424.60	5008803.66	Non-Participating	No	32
580	650430.12	5008803.94	Non-Participating	No	32
581	650435.65	5008803.92	Non-Participating	No	32
582	650440.88	5008804.04	Non-Participating	No	32
584	645856.45	5008543.80	Non-Participating	No	30
585	645863.36	5008543.59	Non-Participating	No	30
586	645872.28	5008610.60	Non-Participating	No	30
587	645881.05	5008610.62	Non-Participating	No	30
588	645893.33	5008612.76	Non-Participating	No	30
589	645913.20	5008609.50	Non-Participating	No	30
590	645825.23	5008480.74	Non-Participating	No	29
591	646381.49	5009661.58	Non-Participating	No	33
592	647256.80	5010821.58	Participating	No	37
593	647235.37	5010818.40	Participating	No	37
594	647223.68	5010820.21	Participating	No	37
595	649109.27	5010799.30	Participating	No	43
596	649089.51	5010782.32	Participating	No	44
597	649095.33	5010782.45	Participating	No	44
598	649102.06	5010781.94	Participating	No	44
638	646364.45	5011342.22	Non-Participating	No	41
639	645581.19	5011275.19	Participating	No	38
640	645600.32	5011274.27	Participating	No	39
641	645611.23	5011274.52	Participating	No	39
667	654477.01	5017621.71	Non-Participating	No	29
668	654369.31	5017619.71	Non-Participating	No	29
671	654440.66	5017764.63	Non-Participating	Yes	29
672	654505.30	5017699.22	Non-Participating	No	26
673	654765.63	5017786.32	Non-Participating	No	29
674	650706.84	5013445.00	Non-Participating	No	37
675	649055.08	5013130.33	Participating	No	43
676	649111.77	5013137.89	Participating	No	43
677	649127.84	5013136.95	Participating	No	43
678	649096.66	5013193.64	Participating	No	43
679	649108.94	5013193.64	Participating	No	43
680	649108.94	5013193.64	Participating	No	43
681	649000.27	5013158.68	Participating	No	43
682	648992.71	5013143.56	Participating	No	43

Table B-2: Sensitive Receptor Results by Receptor - Grant County

Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
683	647329.54	5013167.93	Non-Participating	No	42
684	647338.47	5013168.60	Non-Participating	No	42
685	647346.08	5013169.92	Non-Participating	No	42
686	647355.67	5013170.25	Non-Participating	No	42
687	647323.59	5013228.79	Non-Participating	No	42
688	647329.54	5013228.79	Non-Participating	No	42
689	647139.01	5014024.33	Participating	Yes	44
690	647091.06	5014040.04	Participating	No	45
691	647096.85	5013921.81	Participating	No	45
692	647085.68	5013986.57	Participating	No	45
693	647086.24	5013976.65	Participating	No	45
694	647086.79	5013967.83	Participating	No	45
695	647076.86	5013967.83	Participating	No	45
696	647075.21	5013976.65	Participating	No	45
697	647075.21	5013987.12	Participating	No	45
698	647076.86	5013934.76	Participating	No	45
699	647078.52	5013924.84	Participating	No	45
700	647048.75	5013895.07	Participating	No	46
701	647049.30	5013905.54	Participating	No	46
702	647036.63	5013905.54	Participating	No	46
703	647046.55	5013925.94	Participating	No	46
704	647043.79	5013934.76	Participating	No	46
705	647045.45	5013943.03	Participating	No	46
706	647044.89	5013963.97	Participating	No	46
707	647044.34	5013978.86	Participating	No	46
708	647043.79	5013986.57	Participating	No	45
709	647045.45	5014008.62	Participating	No	45
710	647038.28	5014008.62	Participating	No	45
711	646127.95	5014229.11	Participating	No	42
712	646121.88	5014229.11	Participating	No	42
713	646115.27	5014229.11	Participating	No	42
714	646108.65	5014229.66	Participating	No	42
715	646089.91	5014221.39	Participating	No	42
716	646153.85	5014222.49	Participating	No	42
717	646195.19	5014175.09	Participating	No	43
718	646118.02	5014249.50	Participating	No	42
719	646084.40	5014279.82	Participating	No	42
720	646111.96	5014301.87	Participating	Yes	42
721	650227.89	5014434.71	Non-Participating	Yes	43
722	650207.50	5014449.60	Non-Participating	No	44
723	650200.88	5014449.60	Non-Participating	No	44
724	650171.67	5014421.48	Non-Participating	No	44
725	650180.49	5014452.90	Non-Participating	No	44
726	650160.64	5014422.59	Non-Participating	No	44
727	648895.05	5014567.56	Participating	Yes	42
728	648857.57	5014749.46	Participating	Yes	42
729	648896.15	5014710.32	Participating	No	42

Table B-2: Sensitive Receptor Results by Receptor - Grant County

Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
730	648954.58	5014688.27	Participating	No	42
731	648938.60	5014782.53	Participating	No	42
732	648893.40	5014764.34	Participating	No	42
733	648927.57	5014772.06	Participating	No	42
734	648928.12	5014779.77	Participating	No	42
735	648901.67	5014779.22	Participating	No	42
736	648903.32	5014772.61	Participating	No	42
737	648903.32	5014764.34	Participating	No	42
738	647097.54	5014730.16	Participating	Yes	43
739	647101.94	5014808.44	Participating	No	44
740	647073.83	5014779.77	Participating	No	44
741	647096.43	5014673.39	Participating	No	43
742	647096.43	5014667.88	Participating	No	43
743	645515.54	5014966.64	Participating	No	40
744	645511.35	5015039.18	Participating	Yes	41
745	645500.11	5015039.51	Participating	Yes	41
746	645488.20	5015041.82	Participating	Yes	40
747	645475.97	5015042.48	Participating	Yes	40
748	645483.57	5015016.03	Participating	No	40
752	645456.19	5015387.96	Participating	No	41
756	644633.40	5014490.63	Participating	Yes	36
757	644699.02	5014523.97	Participating	No	36
758	644688.97	5014556.78	Participating	No	36
759	644662.51	5014589.06	Participating	No	36
760	644650.87	5014618.69	Participating	No	36
761	644676.80	5014628.74	Participating	No	36
762	644346.60	5014822.95	Participating	No	35
763	644380.46	5014773.74	Participating	No	35
764	644415.39	5014756.80	Participating	No	35
765	644433.91	5014726.64	Participating	No	35
766	644471.48	5014679.01	Participating	No	36
767	644488.94	5014596.46	Participating	Yes	36
768	644603.24	5014591.17	Participating	No	36
769	647399.27	5015986.51	Participating	Yes	43
770	647454.83	5016038.43	Participating	No	43
771	647445.90	5015956.74	Participating	No	43
772	647422.42	5015911.76	Participating	No	43
773	647459.13	5016012.97	Participating	No	43
774	647461.45	5015953.10	Participating	No	43
775	647457.48	5016001.72	Participating	No	43
776	651813.15	5014591.35	Non-Participating	Yes	35
777	651778.23	5014579.18	Non-Participating	Yes	35
778	651881.15	5014455.09	Non-Participating	Yes	35
779	651659.69	5014649.03	Non-Participating	No	36
797	644388.43	5015993.78	Participating	No	37
799	644347.42	5015979.23	Participating	No	37
800	643969.72	5016091.68	Non-Participating	No	36

Table B-2: Sensitive Receptor Results by Receptor - Grant County

Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
801	643999.49	5016084.40	Non-Participating	Yes	36
802	643977.66	5016340.39	Non-Participating	Yes	37
803	646221.99	5016509.06	Participating	Yes	40
804	646190.90	5016458.79	Participating	No	40
805	646145.92	5016476.65	Participating	No	40
806	646127.40	5016510.38	Participating	No	40
807	646163.78	5016423.73	Participating	No	40
808	646171.06	5016423.07	Participating	No	40
809	647283.77	5016724.17	Participating	No	41
810	647284.96	5016717.42	Participating	No	41
811	647286.15	5016710.28	Participating	No	41
812	647276.62	5016705.91	Participating	No	41
813	647227.01	5016714.64	Participating	No	41
814	647294.09	5016667.81	Participating	No	41
815	647292.90	5016636.46	Participating	No	41
816	647225.43	5016639.23	Participating	Yes	41
817	647920.06	5017342.93	Participating	No	41
818	647914.50	5017334.59	Participating	No	41
819	647910.93	5017326.66	Participating	No	41
820	647907.36	5017321.10	Participating	No	41
821	647904.58	5017314.75	Participating	No	41
822	647901.41	5017308.80	Participating	No	41
823	647897.83	5017302.45	Participating	No	41
824	647929.58	5017194.50	Participating	No	42
825	647921.25	5017194.50	Participating	No	42
826	647922.84	5017174.65	Participating	No	42
827	647929.58	5017175.84	Participating	No	42
828	647874.81	5017215.13	Participating	No	42
829	647876.80	5017207.59	Participating	No	42
830	647779.17	5017234.58	Participating	No	41
831	647831.16	5017234.18	Participating	No	41
832	647866.48	5017264.35	Participating	No	41
833	647950.22	5017211.56	Participating	No	42
834	647910.93	5017290.14	Participating	No	41
835	647897.44	5017210.37	Participating	No	42
836	647897.04	5017225.85	Participating	No	42
837	647851.40	5017188.15	Participating	No	42
838	647860.92	5017125.44	Participating	No	42
839	647898.23	5017253.63	Participating	Yes	42
840	648971.54	5015975.43	Non-Participating	No	44
841	652396.31	5016321.44	Non-Participating	No	34
842	652387.85	5016207.14	Non-Participating	No	34
843	652390.49	5016269.05	Non-Participating	No	34
844	652391.55	5016251.06	Non-Participating	No	34
845	652435.47	5016190.20	Non-Participating	No	33
846	652438.65	5016205.55	Non-Participating	Yes	33
1381	644892.87	5009700.02	Non-Participating	No	31

Table B-2: Sensitive Receptor Results by Receptor - Grant County

Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
1382	644892.46	5009690.93	Non-Participating	No	31
1383	644892.94	5009681.23	Non-Participating	No	31
1384	644801.52	5009641.13	Non-Participating	No	30
1385	644802.36	5009635.06	Non-Participating	No	30
1976	647303.97	5007251.04	Non-Participating	Yes	28
1977	647254.71	5007256.45	Non-Participating	No	28
1978	647224.09	5007221.18	Non-Participating	No	28
1979	647282.08	5007185.04	Non-Participating	No	28
1980	647295.49	5007219.92	Non-Participating	No	28
1981	647232.96	5007186.75	Non-Participating	No	28
1982	648397.12	5007404.49	Non-Participating	No	29
1983	648429.08	5007405.89	Non-Participating	No	29
1984	648407.50	5007439.13	Non-Participating	No	29
1985	648480.56	5007489.68	Non-Participating	Yes	29
1986	649016.69	5007529.25	Non-Participating	No	30
1987	649083.23	5007600.36	Non-Participating	No	30
1988	649022.20	5007623.82	Non-Participating	No	30
1989	649067.37	5007215.51	Non-Participating	No	29
2186	652004.55	5009315.55	Non-Participating	No	28
2187	652011.48	5009353.67	Non-Participating	No	28
2188	651968.05	5009280.43	Non-Participating	No	29
2189	651984.41	5009299.06	Non-Participating	No	29
2190	652079.70	5009234.35	Non-Participating	No	28
2191	651974.01	5009343.47	Non-Participating	No	28
2192	651978.16	5009341.71	Non-Participating	No	28
2193	652045.23	5009239.11	Non-Participating	Yes	28
2194	650636.03	5009296.62	Non-Participating	No	33
2195	650621.29	5009376.36	Non-Participating	Yes	33
2196	650637.75	5009375.27	Non-Participating	No	33
2197	650640.57	5009319.36	Non-Participating	No	33
2198	650789.37	5008570.83	Non-Participating	No	30
2199	650792.95	5008524.02	Non-Participating	No	30
2200	650451.20	5008993.05	Non-Participating	No	33
2201	650511.28	5008972.89	Non-Participating	No	33
2202	650454.57	5009065.19	Non-Participating	No	33
2203	650397.34	5009047.01	Non-Participating	No	33
2204	650431.62	5009062.71	Non-Participating	No	33
2205	650503.26	5009033.74	Non-Participating	Yes	33
2206	650245.22	5009028.03	Non-Participating	No	33
2207	650227.43	5009105.24	Non-Participating	No	34
2208	650291.19	5009109.20	Non-Participating	No	34
2209	650266.51	5009129.39	Non-Participating	No	34
2210	650404.49	5008782.78	Non-Participating	No	32
2211	650402.75	5008799.12	Non-Participating	No	32
2212	650493.66	5008776.86	Non-Participating	Yes	32
2213	645881.03	5008546.97	Non-Participating	No	30
2214	645840.98	5008574.90	Non-Participating	Yes	30

Table B-2: Sensitive Receptor Results by Receptor - Grant County

Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
2215	645876.21	5008512.81	Non-Participating	No	29
2216	645901.09	5007993.08	Non-Participating	No	28
2217	645708.61	5008004.25	Non-Participating	Yes	28
2218	645720.53	5008021.46	Non-Participating	Yes	28
2219	645631.03	5008056.63	Non-Participating	Yes	28
2220	645560.46	5008023.00	Non-Participating	Yes	28
2221	645560.46	5008023.00	Non-Participating	No	28
2222	645561.02	5008023.38	Non-Participating	No	28
2223	645631.03	5008056.63	Non-Participating	No	28
2224	645631.03	5008056.63	Non-Participating	No	28
2225	645608.28	5007990.03	Non-Participating	No	28
2226	645578.93	5008048.55	Non-Participating	No	28
2227	644883.47	5009382.64	Non-Participating	No	30
2228	644887.00	5009408.03	Non-Participating	No	30
2229	644906.27	5009414.05	Non-Participating	No	30
2230	644920.93	5009426.30	Non-Participating	Yes	30
2231	646350.92	5009704.64	Non-Participating	No	33
2232	646346.49	5009644.25	Non-Participating	No	33
2233	646389.71	5009664.22	Non-Participating	No	33
2234	646415.62	5009648.30	Non-Participating	No	33
2235	646427.10	5009646.11	Non-Participating	No	33
2236	646374.72	5009624.58	Non-Participating	Yes	33
2237	647150.23	5010852.56	Participating	No	37
2238	647194.50	5010875.61	Participating	No	37
2239	647229.03	5010859.63	Participating	Yes	37
2240	648982.24	5010914.63	Participating	Yes	43
2241	649080.25	5010909.13	Participating	No	43
2242	648974.09	5010822.91	Non-Participating	Yes	43
2243	650458.09	5010135.55	Non-Participating	Yes	36
2244	651399.84	5010537.19	Non-Participating	Yes	33
2270	645591.52	5011330.52	Participating	Yes	39
2271	646356.26	5011253.61	Non-Participating	Yes	40
2272	645585.78	5011401.80	Participating	No	39
2273	645538.58	5011347.66	Participating	No	39
2274	646389.47	5011293.14	Non-Participating	No	40
2275	646415.18	5011273.33	Non-Participating	No	40
2276	646361.55	5011290.46	Non-Participating	No	40
2277	647415.35	5011482.18	Non-Participating	Yes	39
2278	647379.17	5011394.43	Non-Participating	No	39
2293	650616.12	5013442.16	Non-Participating	Yes	37
2294	650696.44	5013445.94	Non-Participating	No	37
2295	650676.60	5013430.83	Non-Participating	No	37
2296	650673.76	5013421.38	Non-Participating	No	37
2297	650627.46	5013453.50	Non-Participating	No	37
2298	649069.25	5013233.33	Participating	No	43
2299	649041.85	5013179.47	Participating	No	43
2300	649080.59	5013142.62	Participating	No	43

Table B-2: Sensitive Receptor Results by Receptor - Grant County

Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
2301	649008.78	5013133.17	Participating	No	43
2302	649037.12	5013089.70	Participating	No	43
2303	648954.91	5013131.28	Participating	No	44
2304	648997.44	5013169.08	Participating	No	43
2305	648987.99	5013202.15	Participating	Yes	44
2306	647290.87	5013273.96	Non-Participating	Yes	42
2307	647329.61	5013373.18	Non-Participating	No	42
2308	647343.79	5013329.72	Non-Participating	No	42
2309	647376.86	5013304.20	Non-Participating	No	42
2310	647304.10	5013205.93	Non-Participating	No	42
2311	647304.10	5013176.64	Non-Participating	No	42
2312	647295.15	5013319.08	Non-Participating	No	42
2313	647295.81	5013385.89	Non-Participating	No	42
2314	647298.12	5013371.00	Non-Participating	No	42
2423	643933.96	5009635.42	Non-Participating	Yes	29
2424	643946.39	5009641.33	Non-Participating	Yes	29
2425	643975.79	5009665.94	Non-Participating	No	29
2426	644853.33	5009638.98	Non-Participating	Yes	30
2427	644862.14	5009641.30	Non-Participating	Yes	30
2428	644848.89	5009672.37	Non-Participating	No	30
2429	644901.25	5009666.58	Non-Participating	No	31
2430	644788.31	5009700.09	Non-Participating	No	30
2431	644753.13	5009673.55	Non-Participating	No	30
2432	644681.23	5009668.07	Non-Participating	No	30
2433	644718.39	5009658.52	Non-Participating	No	30
2434	644728.55	5009671.12	Non-Participating	No	30
2435	644759.74	5009620.13	Non-Participating	No	30
2436	644726.99	5009642.96	Non-Participating	No	30
2437	644749.25	5009654.50	Non-Participating	No	30
2438	644793.42	5009647.29	Non-Participating	No	30
2439	644803.12	5009672.33	Non-Participating	No	30
2440	644801.56	5009619.01	Non-Participating	No	30
2441	644801.96	5009626.88	Non-Participating	No	30
2469	645864.11	5008430.88	Non-Participating	No	29
2495	648692.68	5007983.40	Non-Participating	No	31
2496	643667.62	5012693.36	Non-Participating	Yes	32
2497	643627.55	5012618.92	Non-Participating	No	32
2498	643612.69	5012703.95	Non-Participating	No	32
2499	643588.71	5012604.37	Non-Participating	No	32
2500	643616.37	5012655.62	Non-Participating	No	32
2521	644116.25	5010595.94	Non-Participating	Yes	31
2522	644199.80	5010616.97	Non-Participating	No	30
2523	644157.37	5010568.03	Non-Participating	No	31
2524	644193.15	5010568.01	Non-Participating	No	30
2525	644166.97	5010609.29	Non-Participating	No	31
2526	644177.53	5010608.42	Non-Participating	No	31
2527	644178.38	5010595.40	Non-Participating	No	30

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Receptor ID	Coordinates UTM NAD83 Zone 14N		Participation Status	Occupied?	Project-Only Leq Broadband Sound Level (dBA)
	X (m)	Y (m)			
2528	645577.99	5010725.78	Participating	Yes	35
2529	645540.65	5010751.32	Participating	No	35
2530	645554.61	5010749.35	Participating	No	35
2554	643750.44	5016047.80	Participating	Yes	36
2555	643882.17	5016060.13	Non-Participating	No	36
2556	643811.08	5015949.57	Non-Participating	No	36
2557	643861.64	5015986.64	Non-Participating	No	36
2558	643864.12	5016147.92	Non-Participating	No	36
2559	643643.91	5015915.41	Non-Participating	No	35
2560	643872.16	5016102.25	Non-Participating	No	36
2561	643872.81	5016086.78	Non-Participating	No	36
2562	643871.79	5016080.04	Non-Participating	No	36
2563	643866.02	5016051.00	Non-Participating	No	36
2564	643873.30	5016052.04	Non-Participating	No	36
2565	643727.73	5015980.11	Non-Participating	No	35
2566	643755.87	5015975.78	Non-Participating	No	36
2567	643766.66	5015976.32	Non-Participating	No	36
2568	643783.89	5015976.41	Non-Participating	No	36
2571	645455.16	5015327.96	Participating	No	41
2572	645476.01	5015383.27	Participating	Yes	41
2573	645485.86	5015380.02	Participating	Yes	41
2574	645493.52	5015381.73	Participating	Yes	41
2575	645504.71	5015378.12	Participating	Yes	41
2576	645515.66	5015380.47	Participating	Yes	41
2578	646310.24	5014306.02	Participating	Yes	43
2579	649001.28	5014751.92	Participating	No	42
2580	648997.19	5014739.07	Participating	No	42
2972	644922.56	5009429.71	Non-Participating	Yes	30
2973	649025.05	5010906.20	Participating	Yes	43
2974	647394.85	5011472.38	Non-Participating	Yes	39
2975	643939.34	5009639.68	Non-Participating	Yes	29
2976	644856.17	5009637.68	Non-Participating	Yes	30
3797	644380.38	5016007.67	Participating	Yes	37
4198	644000.03	5014277.21	Non-Participating	Yes	34