SOUND LEVEL ASSESSMENT REPORT

Burke Wind Energy Center
Burke County, North Dakota

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1.0 EXECUTIVE SUMMARY

The Burke Wind Energy Center (the Project) is a proposed wind-powered electric generation facility located in Burke County, North Dakota. The Project is being developed by Burke Wind, LLC (Burke Wind), an indirect, wholly-owned subsidiary of NextEra Energy Resources, LLC (NEER). Epsilon Associates, Inc. (Epsilon) has been retained by Atwell, LLC (Atwell) as a subcontractor to conduct a sound level assessment for this Project. This assessment accounts for changes to the Project site plan as contained in the Project's Amended Application for Certificate of Site Compatibility and is filed to update and replace the prior sound assessment filed as Docket No. 7 in Case No. PU-18-344.

A sound level modeling analysis was conducted for the proposed collector substation, and 81 wind turbines, which consists of 76 proposed turbine locations and five (5) alternate turbine locations. Both GE 1.7-103 and GE 2.72-116 wind turbines are proposed for this Project. The purpose of this assessment is to predict worst-case community sound levels in Burke County when the wind turbines are operational and to compare the modeling results to applicable limits.

Burke Wind provided information via shapefiles and electronic documents that included turbine locations, participation status, and occupancy status for the receptors in the Project area. Using the Project specific data provided, receptors in this analysis were evaluated against the Burke County Zoning Regulations, which establishes the sound levels identified in a U.S. Environmental Protection Agency (EPA) guideline document[1] as limits within 50 feet of an occupied structure. This document contains a guideline value of 55 dBA for outdoor L_{dn} (defined in Section 3) and an interior L_{dn} of 45 dBA. The outdoor L_{dn} of 55 dBA equates to an hourly single number equivalent of 49 dBA. The interior L_{dn} 45 dBA equates to an hourly outdoor single number equivalent of 54 dBA. Receptors were also evaluated against the limit contained in the North Dakota Administrative Code (N.D. Admin. Code) section 69-06-08-01(4) of 50 dBA within 100 feet of an inhabited residence or community building.

The County and State limits require sound levels to be assessed within 50 and 100 feet of inhabited structures respectively. In order to address this criteria, four (4) additional receptors were conservatively placed at 150-foot offsets[2] from each original receptor in the four cardinal directions (north, south, east, and west).

[1] United States Environmental Protection Agency, Information On Levels Of Environmental Noise Requisite To Protect Public Health And Welfare With An Adequate Margin Of Safety, March 1974.

[2] A value greater than 100 feet was selected to account for the dimensions of the home.

The resulting L_{eq} (defined in Section 3) sound levels modeled at receptors in Burke County ranged from 20 to 47 dBA. The maximum L_{eq} sound level at a modeling receptor on a non-participating parcel is 46 dBA. The maximum L_{eq} sound level at a modeling receptor on a participating parcel is 47 dBA. Therefore, the Project meets both the Burke County and Commission regulations with respect to sound.

2.0 INTRODUCTION

The Project will be located in Burke County, North Dakota and will consist of an electrical substation and two models of General Electric (GE) wind turbines. The proposed wind turbines will be a combination of GE 1.7-103 and GE 2.72-116 units. The GE 1.7-103 wind turbines have a hub height of 80 meters (263 feet) and a rotor diameter of 103 meters (338 feet). The GE 2.72-116 wind turbines have a hub height of 90 meters (295 feet) and a rotor diameter of 116 meters (381 feet). The Project will have a total capacity of approximately 200 megawatts.

A detailed discussion of sound from wind turbines is presented in a white paper prepared by the Renewable Energy Research Laboratory.[3] A few points are repeated herein. Wind turbine sound 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 1990s, both were significant contributors to wind turbine sound. However, recent advances in wind turbine design have greatly reduced the contribution of mechanical sound. Aerodynamic sound has also been reduced from modern wind turbines due to slower rotational speeds and changes in materials of construction. Aerodynamic sound, 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 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 findings of a sound level modeling analysis for the Project. The wind turbines were modeled with the Cadna/A software package using sound data from GE technical documents. The results of this analysis are found within this report.

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

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 three (3) dB increase (53 dB), which is equal to doubling in sound energy but not equal to a doubling in decibel quantity (100 dB). Thus, every three (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 three (3) dB is imperceptible to the human ear.

Another mathematical property of decibels is that if one source of sound is 10 dB (or more) 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.[4] 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".

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 one (1) and 99) in terms of percentage. Equivalent levels are designated L_{eq} and quantify a hypothetical steady sound that would

[4] *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.

have the same energy as the actual fluctuating sound observed. The sound level metrics that are sometimes reported in community sound monitoring and are utilized in this report are described below.

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.

L_{dn}, the day-night average sound level, sometimes abbreviated as DNL and presented in dBA, is the 24-hour average sound level obtained by the logarithmic average of the average daytime sound level (L_D) and the average nighttime sound level (L_N) that incorporates a 10-decibel "penalty" to each nighttime-hour sound level. This penalty accounts for the greater sensitivity to sound events during nighttime hours. The L_D and L_N are both calculated using hourly equivalent sound levels ($L_{eq(h)}$). The Environmental Protection Agency defines daytime as the 15 hours from 7:00 AM-10:00 PM and nighttime as the 9 hours from 10:00 PM-7:00 AM.

4.0 NOISE REGULATIONS

4.1 Burke County Regulations

The proposed Project is subject to the following sound level requirements in Section 11, Article 11, Part J of the Burke County Zoning Regulations:

> *This ordinance adopts the EPA guidelines on noise levels. The guidelines are contained in the EPA publication, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety. Operation of the wind energy facility must not cause any EPA level for activity interference or hearing loss to be exceeded either inside or within 50 feet of an occupied structure.*

The Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety (Levels) document presents both outdoor and indoor activity interference and annoyance level limits.[5] The Levels document guideline limit for outdoor activity interference and annoyance is an L_{dn} of 55 dBA. This equates to an hourly Project sound level limit of 49 dBA.[6]

The Levels document limit for indoor activity interference and annoyance is an L_{dn} of 45 dBA. This equates to an outdoor hourly Project sound level limit of 54 dBA.[7] This limit assumes structures achieve at least a 15 dBA sound level reduction from exterior to interior. The Levels document acknowledges a 15 dBA reduction for structures with partially opened windows.[8]

Therefore, modeling receptors were evaluated against the 49 dBA exterior limit, which is the most restrictive sound level presented by the Levels document. Modeling receptors were placed 150 feet from structures in the four cardinal directions (north, south, east, and west) which is more conservative than the 50 foot requirement of Burke County.

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[5] EPA Levels Document, Table 1, Summary of Noise Levels Identified As Requisite To Protect Public Health And Welfare With An Adequate Margin Of Safety.

[6] An hourly L_{eq} level of 49 dBA experienced continuously over a 24-hour period is equivalent to an L_{dn} of 55 dBA.

[7] An outdoor hourly L_{eq} level of 54 dBA experienced continuously over a 24-hour period is equivalent to an interior L_{dn} of 45 dBA.

[8] EPA Levels Document, Identified Levels for Interference, page 21.

4.2 North Dakota State Regulations

The proposed Project is also subject to the following sound level requirements in Title 69, Article 6, Chapter 8 of the North Dakota Administrative Code:

> *A wind energy conversion facility site must not include a geographic area where, due to operation of the facility, the sound levels within one hundred feet of an inhabited residence or a community building will exceed fifty dBA. The sound level avoidance area criteria may be waived in writing by the owner of the occupied residence or the community building.*

Therefore, modeling receptors were evaluated in this analysis against the 50 dBA limit. Modeling receptors were placed 150 feet from the center point of structures in the four cardinal directions (north, south, east, and west) which is more conservative than the 100 foot requirement of the State of North Dakota. As the limit applies 100 feet from the façade of the building and the receptor point is representative of the center of the structure, this additional 50 feet conservatively accounts for half the width of a typical home.

5.0 FUTURE CONDITIONS

5.1 Equipment and Operating Conditions

The sound level analysis includes 81 wind turbines, of which 73 wind turbines are GE 2.72-116 units, and 8 wind turbines are GE 1.7-103 units. Five (5) of the 2.72-116 units are alternates. The GE 2.72-116 wind turbines have a hub height of 90 meters (295 feet) and a rotor diameter of 116 meters (381 feet). The GE 1.7-103 wind turbines have a hub height of 80 meters (263 feet) and a rotor diameter of 103 meters (338 feet). Technical documentation from GE[9,10] was provided by Burke Wind, which documented the expected sound power levels associated with the GE 1.7-103 and GE 2.72-116 wind turbines. These sound power levels are defined as "apparent" by the turbine manufacturer and therefore do not include any uncertainty factor.

In addition to the wind turbines, there is a collector substation associated with the Project. The substation is located approximately two miles south of wind turbine #53 and is shown in Figure 5-1. One 225 megavolt-ampere (MVA) transformer is proposed for the substation. Burke Wind provided the MVA rating for the proposed transformer. From this rating, Epsilon estimated octave band sound power levels using the calculated broadband sound pressure level and techniques in the Electric Power Plant Environmental Noise Guide (Edison Electric Institute), Table 4.5 Sound Power Levels of Transformers. Table 5-1 summarizes the sound power level data used in the modeling.

Table 5-1 Modeled Substation Transformer Sound Power Levels

		Sound Power Levels per Octave-Band Center Frequency [Hz]								
Maximum Rating	Broadband dBA	31.5 dB	63 dB	125 dB	250 dB	500 dB	1k dB	2k dB	4k dB	8k dB
225 MVA	104	100	106	108	103	103	97	92	87	80

5.2 Modeling Scenarios

The sound impacts associated with the proposed wind turbines were predicted using the Cadna/A sound calculation software developed by DataKustik GmbH (Version 2018 MR 1). 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

[9] General Electric Company, Technical Documentation Wind Turbine Generator Systems 1.7-103 – 50 and 60 Hz Product Acoustic Specifications, 2015.

[10] General Electric Company, Technical Documentation Wind Turbine Generator Systems 2.7-116 – 60 Hz Product Acoustic Specifications, 2018.

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:

- *Project Layout:* The proposed wind turbine locations were provided by Burke Wind on October 8, 2018. This project layout named 181008 was provided by Burke Wind for all proposed and alternate Burke Wind turbines. The 81 wind turbines were input into the model. The proposed substation location was provided by Burke Wind on May 14, 2018. For the modeling analysis, it was assumed that the substation transformer would be located at the center of the proposed substation pad, as it appeared in the shapefiles. The proposed wind turbines and substation locations are shown in Figure 5-1. The coordinates of the proposed wind turbines are listed in Table A-1 of Appendix A.

- *Modeling Locations:* A modeling receptor dataset was provided by Burke Wind, which included occupancy status for the receptors in the Project area. Buildings not identified as occupied were excluded from the analysis. A shapefile with parcel participation status dated October 11, 2018 was provided by Burke Wind, which allowed for participation status to be assigned to each modeling receptor. The dataset included receptors at a significant distance from wind turbines (greater than three miles from the wind turbines) and these receptors were excluded from the analysis. After these processing steps, there were 68 receptors in total. In order to address the county and state sound level limits which apply at 50 foot and 100 foot distances from inhabited structures, four (4) additional receptors were conservatively placed at 150 foot offsets from each original receptor in the four cardinal directions (north, south, east, and west). As the greater of the two limits applies 100 feet from the façade of the building and the receptor point is representative of the center of the structure, this additional 50 feet conservatively accounts for half the width of a typical home. Therefore, a total of 340 receptors were input into the Cadna/A model. These receptors were modeled as discrete points at a height of 1.5 meters above ground level (AGL) to mimic the ears of a typical standing person. The center point of each receptor location is shown in 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 National Elevation Data, a seamless mosaic of best-available elevation data (ten (10) meters or better) from the U.S. Department of Agriculture, Service Center Agencies.

- *Source Sound Levels:* Octave band sound power levels for both the GE 1.7-103 and GE 2.72-116 wind turbines were provided in technical reports and were input to the

model. The substation transformer sound power levels presented in Table 5-1 were input to the model.

- *Uncertainty factor:* Typically, uncertainty factors provided by manufacturers for wind turbine sound power levels are 2 decibels or less. For this analysis an uncertainty factor of 2.0 dBA was assumed and added to the sound power level for each modeled wind turbine.

- *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 for each wind turbine model including uncertainty factor identified above was input into the Cadna/A model. From these sound power levels, wind turbine generated sound pressure levels during conditions favorable to sound propagation were calculated. L_{eq} sound pressure levels due to operation of all 81 wind turbines and the substation transformers were predicted at 340 modeling receptors in Burke County. 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. The table presents sound levels at the 340 receptors in Burke County included in the analysis. These sound levels range from 20 to 47 dBA. The layout results in a maximum L_{eq} sound level at a modeling receptor of 47 dBA (Receptor #622). This receptor is on a participating parcel. The maximum L_{eq} sound level at a modeling receptor on a non-participating parcel is 46 dBA (Receptors #658 and #1045). In addition to these discrete modeling points, sound level isolines generated from the modeling grid are presented in Figure 5-2.

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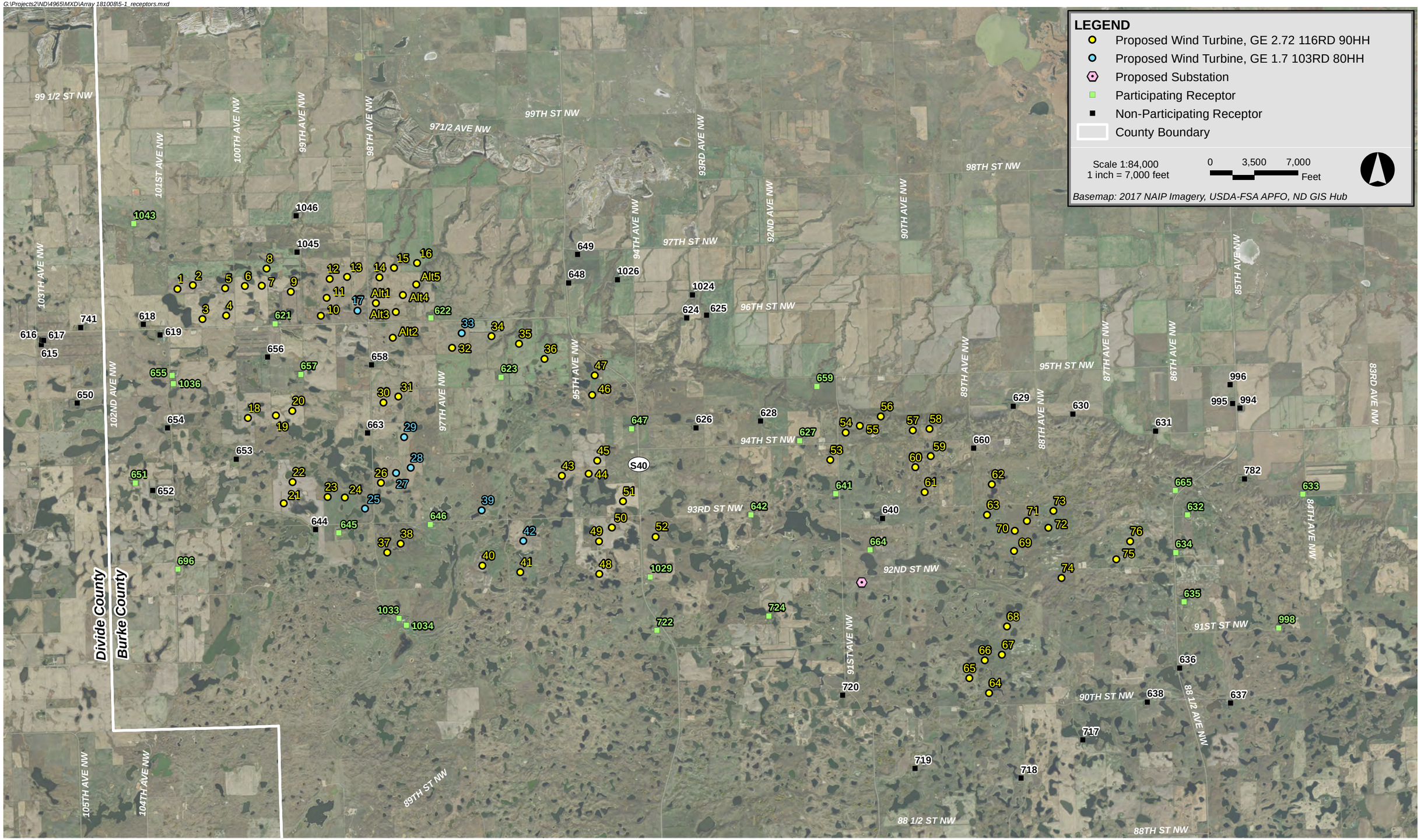

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Figure 5-1

Wind Turbine, Substation, and Modeling Receptor Locations

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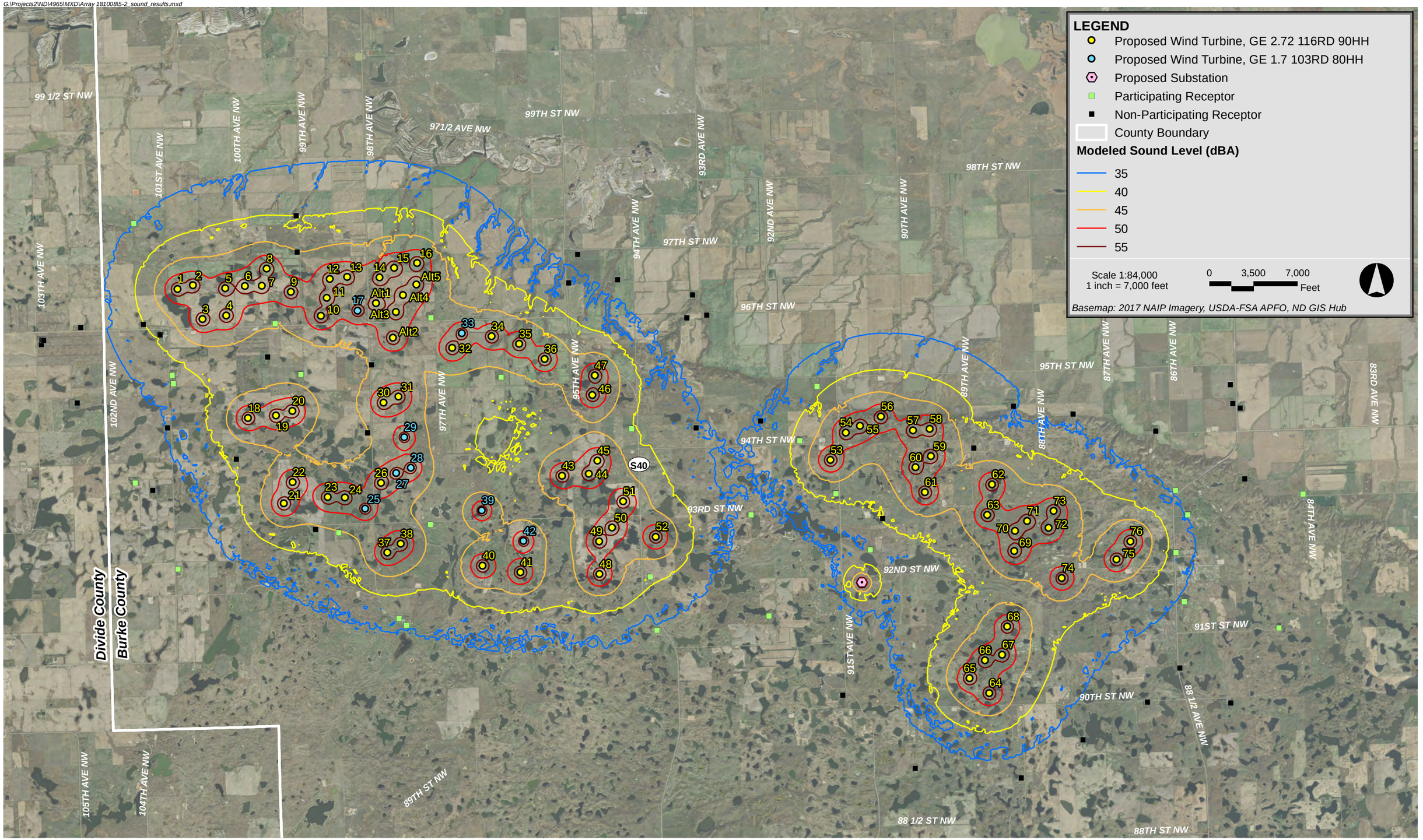

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Figure 5-2
Sound Level Modeling Results

6.0 EVALUATION OF SOUND LEVELS

The Project is subject to the requirements contained in the Burke County Zoning Regulations. These Regulations have adopted the U.S. EPA Information On Levels Of Environmental Noise Requisite To Protect Public Health And Welfare With An Adequate Margin Of Safety (Levels) guideline document, which present both indoor and outdoor sound limits. As detailed in Section 4.0 of this report, the most restrictive sound limit presented by these regulations is 49 dBA within 50 feet of an occupied structure. The Project is also subject to the N.D. Admin. Code section 69-06-08-01(4). The sound level limit in this regulation is 50 dBA within 100 feet of an inhabited residence or community building.

All modeled sound levels, as output from Cadna/A and presented in Appendix B, are A-weighted equivalent sound levels (L_{eq}, dBA). These levels may be used in evaluating measured sound pressure levels over typical averaging durations, (i.e., ten (10) minutes or one (1) hour).

A review of the table in Appendix A shows the highest sound level at a non-participating modeling receptor to be 46 dBA at Receptors #658 and #1045. The highest sound level at a participating modeling receptor is 47 dBA at Receptor #622. Therefore, the Project meets the requirements with respect to sound in the regulations.

7.0 CONCLUSIONS

A comprehensive sound level analysis was conducted for the proposed Project to be located within Burke County, North Dakota. A total of 81 wind turbines are proposed for this Project. Sound levels resulting from the operation of 81 (76 proposed + five (5) alternates) wind turbines and a collector substation were calculated at 340 discrete modeling points, which conservatively included locations 150 feet from each original receptor in the four cardinal directions (north, south, east, and west). In addition, sound level isolines were generated from a grid encompassing the area surrounding the wind turbines using the provided layout. The L_{eq} sound levels modeled at receptors in Burke County ranged from 20 to 47 dBA. The layout results in a maximum L_{eq} sound level at a modeling receptor of 47 dBA (Receptor #622). This receptor is on a participating parcel. The maximum L_{eq} sound level at a modeling receptor on a non-participating parcel is 46 dBA (Receptors #658 and #1045). Project sound levels at all receptor locations are below the most restrictive county limit of 49 dBA, therefore, the Project meets the requirements with respect to sound in the regulations.

Appendix A
Burke Wind Energy Center: Wind Turbine Coordinates

Table A-1: Burke WEC Wind Turbine Coordinates

Wind Turbine ID	Coordinates NAD83 UTM Zone 13N (meters)	
	X (Easting)	Y (Northing)
1	653076	5409096
2	653445	5409186
3	653677	5408372
4	654250	5408458
5	654229	5409112
6	654702	5409168
7	655111	5409174
8	655225	5409591
9	655808	5409030
10	656535	5408449
11	656677	5408886
12	656750	5409339
13	657169	5409388
14	657950	5409377
15	658302	5409607
16	658857	5409723
17	657418	5408575
18	654775	5405980
19	655452	5406040
20	655845	5406150
21	655640	5403918
22	655853	5404435
23	656703	5404072
24	657113	5404060
25	657603	5403794
26	657986	5404416
27	658352	5404653
28	658705	5404782
29	658548	5405521
30	658050	5406356
31	658405	5406496
32	659706	5407674
33	659935	5408031
34	660659	5407956
35	661320	5407771
36	661937	5407408
37	658137	5402730
38	658464	5402947
39	660419	5403748
40	660438	5402413
41	661351	5402258
42	661424	5403015
43	662359	5404584
44	663003	5404633
45	663209	5404952
46	663090	5406539
47	663150	5407010
48	663261	5402212
49	663255	5403003
50	663565	5403335

Table A-1: Burke WEC Wind Turbine Coordinates

Wind Turbine ID	Coordinates NAD83 UTM Zone 13N (meters)	
	X (Easting)	Y (Northing)
51	663832	5403968
52	664619	5403113
53	668836	5404970
54	669209	5405630
55	669553	5405789
56	670057	5406015
57	670834	5405685
58	671233	5405717
59	671263	5405061
60	670891	5404793
61	671119	5404187
62	672737	5404380
63	672625	5403642
64	672675	5399335
65	672196	5399698
66	672570	5400128
67	672984	5400261
68	673104	5400943
69	673278	5402768
70	673296	5403254
71	673588	5403493
72	674105	5403330
73	674227	5403738
74	674424	5402115
75	675742	5402569
76	676078	5403003
Alt1	657866	5408754
Alt2	658275	5407920
Alt3	658344	5408543
Alt4	658517	5408951
Alt5	658842	5409203

Appendix B

Predicted Wind Energy Facility Sound Levels at Discrete Modeling Points

Table B-1: Sound Level Modeling Results at Discrete Points in Burke County - Sorted by Modeling ID

Modeling ID	Participation Status	Occupancy Status	Coordinates UTM NAD83 Zone 13N		Source Only Broadband Sound Level (dBA)	Nearest Wind Turbine ID	Distance to Nearest Wind Turbine (ft)[1]
			X (m)	Y (m)			
615	Non-Participating	Occupied	649780.85	5407764.22	30	1	11,662
615-N	Non-Participating	Occupied	649780.85	5407809.94	30	-	-
615-S	Non-Participating	Occupied	649780.85	5407718.50	30	-	-
615-E	Non-Participating	Occupied	649826.57	5407764.22	30	-	-
615-W	Non-Participating	Occupied	649735.13	5407764.22	30	-	-
616	Non-Participating	Occupied	649791.01	5407868.94	30	1	11,506
616-N	Non-Participating	Occupied	649791.01	5407914.66	29	-	-
616-S	Non-Participating	Occupied	649791.01	5407823.21	30	-	-
616-E	Non-Participating	Occupied	649836.73	5407868.93	30	-	-
616-W	Non-Participating	Occupied	649745.29	5407868.93	30	-	-
617	Non-Participating	Occupied	649837.24	5407854.78	30	1	11,381
617-N	Non-Participating	Occupied	649837.24	5407900.50	30	-	-
617-S	Non-Participating	Occupied	649837.24	5407809.06	30	-	-
617-E	Non-Participating	Occupied	649882.96	5407854.78	30	-	-
617-W	Non-Participating	Occupied	649791.52	5407854.78	30	-	-
618	Non-Participating	Occupied	652245.42	5408242.53	40	1	3,908
618-N	Non-Participating	Occupied	652245.42	5408288.25	40	-	-
618-S	Non-Participating	Occupied	652245.42	5408196.81	40	-	-
618-E	Non-Participating	Occupied	652291.14	5408242.53	40	-	-
618-W	Non-Participating	Occupied	652199.70	5408242.53	40	-	-
619	Non-Participating	Occupied	652646.18	5407989.44	41	3	3,608
619-N	Non-Participating	Occupied	652646.18	5408035.16	41	-	-
619-S	Non-Participating	Occupied	652646.18	5407943.72	41	-	-
619-E	Non-Participating	Occupied	652691.91	5407989.44	42	-	-
619-W	Non-Participating	Occupied	652600.46	5407989.44	41	-	-
621	Participating	Occupied	655426.25	5408259.57	46	9	2,821
621-N	Participating	Occupied	655426.25	5408305.29	46	-	-
621-S	Participating	Occupied	655426.25	5408213.85	45	-	-
621-E	Participating	Occupied	655471.98	5408259.57	45	-	-
621-W	Participating	Occupied	655380.53	5408259.57	46	-	-
622	Participating	Occupied	659187.73	5408403.94	47	33	2,740
622-N	Participating	Occupied	659187.73	5408449.66	47	-	-
622-S	Participating	Occupied	659187.73	5408358.22	47	-	-
622-E	Participating	Occupied	659233.45	5408403.94	47	-	-
622-W	Participating	Occupied	659142.01	5408403.94	47	-	-
623	Participating	Occupied	660884.27	5406971.54	44	35	2,987
623-N	Participating	Occupied	660884.27	5407017.26	44	-	-
623-S	Participating	Occupied	660884.27	5406925.82	43	-	-
623-E	Participating	Occupied	660929.99	5406971.54	44	-	-
623-W	Participating	Occupied	660838.55	5406971.54	44	-	-
624	Non-Participating	Occupied	665365.43	5408398.98	31	47	8,578
624-N	Non-Participating	Occupied	665365.43	5408444.70	31	-	-
624-S	Non-Participating	Occupied	665365.43	5408353.26	31	-	-
624-E	Non-Participating	Occupied	665411.15	5408398.98	31	-	-
624-W	Non-Participating	Occupied	665319.71	5408398.98	28	-	-
625	Non-Participating	Occupied	665843.99	5408467.99	29	47	10,049
625-N	Non-Participating	Occupied	665843.99	5408513.71	29	-	-
625-S	Non-Participating	Occupied	665843.99	5408422.27	29	-	-
625-E	Non-Participating	Occupied	665889.71	5408467.99	30	-	-
625-W	Non-Participating	Occupied	665798.27	5408467.99	29	-	-
626	Non-Participating	Occupied	665587.06	5405751.51	36	51	8,210
626-N	Non-Participating	Occupied	665587.06	5405797.23	36	-	-
626-S	Non-Participating	Occupied	665587.06	5405705.79	36	-	-
626-E	Non-Participating	Occupied	665632.78	5405751.50	36	-	-
626-W	Non-Participating	Occupied	665541.34	5405751.51	36	-	-
627	Participating	Occupied	668093.50	5405440.40	42	53	2,885
627-N	Participating	Occupied	668093.50	5405486.12	41	-	-
627-S	Participating	Occupied	668093.50	5405394.68	42	-	-
627-E	Participating	Occupied	668139.22	5405440.40	42	-	-
627-W	Participating	Occupied	668047.78	5405440.40	41	-	-
628	Non-Participating	Occupied	667148.52	5405905.31	36	53	6,331
628-N	Non-Participating	Occupied	667148.52	5405951.03	36	-	-
628-S	Non-Participating	Occupied	667148.52	5405859.59	36	-	-
628-E	Non-Participating	Occupied	667194.24	5405905.31	35	-	-
628-W	Non-Participating	Occupied	667102.80	5405905.31	36	-	-
629	Non-Participating	Occupied	673254.17	5406273.56	36	62	6,441
629-N	Non-Participating	Occupied	673254.17	5406319.28	36	-	-
629-S	Non-Participating	Occupied	673254.17	5406227.83	36	-	-
629-E	Non-Participating	Occupied	673299.89	5406273.55	36	-	-
629-W	Non-Participating	Occupied	673208.45	5406273.55	35	-	-
630	Non-Participating	Occupied	674690.41	5406084.87	31	73	7,849
630-N	Non-Participating	Occupied	674690.41	5406130.59	31	-	-
630-S	Non-Participating	Occupied	674690.41	5406039.15	31	-	-
630-E	Non-Participating	Occupied	674736.14	5406084.87	31	-	-
630-W	Non-Participating	Occupied	674644.69	5406084.87	31	-	-
631	Non-Participating	Occupied	676687.09	5405668.35	27	76	8,970
631-N	Non-Participating	Occupied	676687.09	5405714.07	27	-	-

Table B-1: Sound Level Modeling Results at Discrete Points in Burke County - Sorted by Modeling ID

Modeling ID	Participation Status	Occupancy Status	Coordinates UTM NAD83 Zone 13N		Source Only Broadband Sound Level (dBA)	Nearest Wind Turbine ID	Distance to Nearest Wind Turbine (ft)[1]
			X (m)	Y (m)			
631-S	Non-Participating	Occupied	676687.09	5405622.63	27	-	-
631-E	Non-Participating	Occupied	676732.81	5405668.35	27	-	-
631-W	Non-Participating	Occupied	676641.37	5405668.35	27	-	-
632	Participating	Occupied	677455.70	5403643.77	35	76	4,985
632-N	Participating	Occupied	677455.70	5403689.49	35	-	-
632-S	Participating	Occupied	677455.70	5403598.05	35	-	-
632-E	Participating	Occupied	677501.42	5403643.77	35	-	-
632-W	Participating	Occupied	677409.98	5403643.77	35	-	-
633	Participating	Occupied	680245.82	5404143.92	20	76	14,178
633-N	Participating	Occupied	680245.82	5404189.64	20	-	-
633-S	Participating	Occupied	680245.82	5404098.20	20	-	-
633-E	Participating	Occupied	680291.54	5404143.92	20	-	-
633-W	Participating	Occupied	680200.10	5404143.92	20	-	-
634	Participating	Occupied	677174.93	5402737.34	38	76	3,703
634-N	Participating	Occupied	677174.93	5402783.06	38	-	-
634-S	Participating	Occupied	677174.93	5402691.62	38	-	-
634-E	Participating	Occupied	677220.65	5402737.34	38	-	-
634-W	Participating	Occupied	677129.21	5402737.34	39	-	-
635	Participating	Occupied	677378.00	5401541.41	34	75	6,339
635-N	Participating	Occupied	677378.00	5401587.13	34	-	-
635-S	Participating	Occupied	677378.00	5401495.69	34	-	-
635-E	Participating	Occupied	677423.72	5401541.41	34	-	-
635-W	Participating	Occupied	677332.28	5401541.41	34	-	-
636	Non-Participating	Occupied	677267.75	5399947.40	31	75	9,952
636-N	Non-Participating	Occupied	677267.75	5399993.12	31	-	-
636-S	Non-Participating	Occupied	677267.75	5399901.68	31	-	-
636-E	Non-Participating	Occupied	677313.47	5399947.40	31	-	-
636-W	Non-Participating	Occupied	677222.03	5399947.40	31	-	-
637	Non-Participating	Occupied	678499.34	5399096.96	27	75	14,547
637-N	Non-Participating	Occupied	678499.34	5399142.68	27	-	-
637-S	Non-Participating	Occupied	678499.34	5399051.24	27	-	-
637-E	Non-Participating	Occupied	678545.06	5399096.96	27	-	-
637-W	Non-Participating	Occupied	678453.62	5399096.96	27	-	-
638	Non-Participating	Occupied	676486.21	5399121.19	31	75	11,573
638-N	Non-Participating	Occupied	676486.21	5399166.91	31	-	-
638-S	Non-Participating	Occupied	676486.21	5399075.46	28	-	-
638-E	Non-Participating	Occupied	676531.93	5399121.18	30	-	-
638-W	Non-Participating	Occupied	676440.49	5399121.19	31	-	-
640	Non-Participating	Occupied	670095.82	5403560.26	40	61	3,937
640-N	Non-Participating	Occupied	670095.82	5403605.98	41	-	-
640-S	Non-Participating	Occupied	670095.82	5403514.54	40	-	-
640-E	Non-Participating	Occupied	670141.54	5403560.25	41	-	-
640-W	Non-Participating	Occupied	670050.10	5403560.26	40	-	-
641	Participating	Occupied	668968.77	5404152.97	42	53	2,716
641-N	Participating	Occupied	668968.77	5404198.69	42	-	-
641-S	Participating	Occupied	668968.77	5404107.24	41	-	-
641-E	Participating	Occupied	669014.49	5404152.96	42	-	-
641-W	Participating	Occupied	668923.05	5404152.96	42	-	-
642	Participating	Occupied	666917.33	5403645.19	33	53	7,652
642-N	Participating	Occupied	666917.33	5403690.91	35	-	-
642-S	Participating	Occupied	666917.33	5403599.47	33	-	-
642-E	Participating	Occupied	666963.05	5403645.19	33	-	-
642-W	Participating	Occupied	666871.61	5403645.19	35	-	-
644	Non-Participating	Occupied	656402.93	5403286.54	44	23	2,759
644-N	Non-Participating	Occupied	656402.93	5403332.26	45	-	-
644-S	Non-Participating	Occupied	656402.93	5403240.82	44	-	-
644-E	Non-Participating	Occupied	656448.65	5403286.54	44	-	-
644-W	Non-Participating	Occupied	656357.21	5403286.54	44	-	-
645	Participating	Occupied	656962.02	5403208.10	45	24	2,839
645-N	Participating	Occupied	656962.02	5403253.82	45	-	-
645-S	Participating	Occupied	656962.02	5403162.38	44	-	-
645-E	Participating	Occupied	657007.74	5403208.10	45	-	-
645-W	Participating	Occupied	656916.30	5403208.10	45	-	-
646	Participating	Occupied	659173.59	5403417.13	43	38	2,793
646-N	Participating	Occupied	659173.59	5403462.85	43	-	-
646-S	Participating	Occupied	659173.59	5403371.41	44	-	-
646-E	Participating	Occupied	659219.31	5403417.13	43	-	-
646-W	Participating	Occupied	659127.87	5403417.13	44	-	-
647	Participating	Occupied	664035.98	5405726.25	41	45	3,717
647-N	Participating	Occupied	664035.99	5405771.97	41	-	-
647-S	Participating	Occupied	664035.99	5405680.52	41	-	-
647-E	Participating	Occupied	664081.71	5405726.24	41	-	-
647-W	Participating	Occupied	663990.27	5405726.25	42	-	-
648	Non-Participating	Occupied	662515.11	5409250.17	37	35	6,240
648-N	Non-Participating	Occupied	662515.11	5409295.89	37	-	-
648-S	Non-Participating	Occupied	662515.11	5409204.44	37	-	-
648-E	Non-Participating	Occupied	662560.84	5409250.16	36	-	-

Table B-1: Sound Level Modeling Results at Discrete Points in Burke County - Sorted by Modeling ID

Modeling ID	Participation Status	Occupancy Status	Coordinates UTM NAD83 Zone 13N		Source Only Broadband Sound Level (dBA)	Nearest Wind Turbine ID	Distance to Nearest Wind Turbine (ft)[1]
			X (m)	Y (m)			
648-W	Non-Participating	Occupied	662469.39	5409250.16	37	-	-
649	Non-Participating	Occupied	662728.64	5409933.36	34	35	8,468
649-N	Non-Participating	Occupied	662728.64	5409979.08	34	-	-
649-S	Non-Participating	Occupied	662728.64	5409887.64	34	-	-
649-E	Non-Participating	Occupied	662774.37	5409933.35	34	-	-
649-W	Non-Participating	Occupied	662682.92	5409933.36	34	-	-
650	Non-Participating	Occupied	650646.33	5406344.70	31	3	11,964
650-N	Non-Participating	Occupied	650646.33	5406390.42	31	-	-
650-S	Non-Participating	Occupied	650646.33	5406298.98	31	-	-
650-E	Non-Participating	Occupied	650692.05	5406344.70	31	-	-
650-W	Non-Participating	Occupied	650600.61	5406344.70	31	-	-
651	Participating	Occupied	652048.10	5404417.58	32	18	10,312
651-N	Participating	Occupied	652048.10	5404463.30	32	-	-
651-S	Participating	Occupied	652048.10	5404371.86	32	-	-
651-E	Participating	Occupied	652093.82	5404417.58	31	-	-
651-W	Participating	Occupied	652002.38	5404417.58	32	-	-
652	Non-Participating	Occupied	652467.71	5404233.35	32	18	9,495
652-N	Non-Participating	Occupied	652467.71	5404279.07	33	-	-
652-S	Non-Participating	Occupied	652467.71	5404187.63	32	-	-
652-E	Non-Participating	Occupied	652513.43	5404233.35	31	-	-
652-W	Non-Participating	Occupied	652421.99	5404233.35	31	-	-
653	Non-Participating	Occupied	654489.31	5404994.78	41	18	3,366
653-N	Non-Participating	Occupied	654489.31	5405040.50	42	-	-
653-S	Non-Participating	Occupied	654489.31	5404949.06	41	-	-
653-E	Non-Participating	Occupied	654535.03	5404994.78	41	-	-
653-W	Non-Participating	Occupied	654443.59	5404994.78	40	-	-
654	Non-Participating	Occupied	652827.61	5405744.86	35	18	6,436
654-N	Non-Participating	Occupied	652827.61	5405790.58	36	-	-
654-S	Non-Participating	Occupied	652827.61	5405699.14	35	-	-
654-E	Non-Participating	Occupied	652873.33	5405744.86	36	-	-
654-W	Non-Participating	Occupied	652781.89	5405744.86	34	-	-
655	Participating	Occupied	652936.65	5407019.68	38	3	5,059
655-N	Participating	Occupied	652936.65	5407065.40	38	-	-
655-S	Participating	Occupied	652936.65	5406973.96	38	-	-
655-E	Participating	Occupied	652982.38	5407019.68	38	-	-
655-W	Participating	Occupied	652890.93	5407019.68	38	-	-
656	Non-Participating	Occupied	655241.51	5407453.65	43	4	4,631
656-N	Non-Participating	Occupied	655241.51	5407499.37	43	-	-
656-S	Non-Participating	Occupied	655241.51	5407407.93	43	-	-
656-E	Non-Participating	Occupied	655287.23	5407453.65	43	-	-
656-W	Non-Participating	Occupied	655195.79	5407453.65	43	-	-
657	Participating	Occupied	656050.57	5407034.59	43	20	2,980
657-N	Participating	Occupied	656050.57	5407080.31	43	-	-
657-S	Participating	Occupied	656050.57	5406988.87	44	-	-
657-E	Participating	Occupied	656096.29	5407034.58	43	-	-
657-W	Participating	Occupied	656004.85	5407034.59	44	-	-
658	Non-Participating	Occupied	657755.93	5407268.31	45	Alt2	2,734
658-N	Non-Participating	Occupied	657755.93	5407314.03	45	-	-
658-S	Non-Participating	Occupied	657755.93	5407222.59	45	-	-
658-E	Non-Participating	Occupied	657801.65	5407268.31	46	-	-
658-W	Non-Participating	Occupied	657710.21	5407268.31	45	-	-
659	Participating	Occupied	668510.84	5406750.16	39	54	4,331
659-N	Participating	Occupied	668510.84	5406795.88	39	-	-
659-S	Participating	Occupied	668510.84	5406704.44	39	-	-
659-E	Participating	Occupied	668556.56	5406750.16	39	-	-
659-W	Participating	Occupied	668465.12	5406750.16	39	-	-
660	Non-Participating	Occupied	672293.76	5405253.88	43	62	3,215
660-N	Non-Participating	Occupied	672293.76	5405299.60	43	-	-
660-S	Non-Participating	Occupied	672293.76	5405208.16	44	-	-
660-E	Non-Participating	Occupied	672339.48	5405253.88	43	-	-
660-W	Non-Participating	Occupied	672248.04	5405253.88	44	-	-
663	Non-Participating	Occupied	657658.51	5405621.08	45	30	2,731
663-N	Non-Participating	Occupied	657658.51	5405666.80	45	-	-
663-S	Non-Participating	Occupied	657658.51	5405575.36	45	-	-
663-E	Non-Participating	Occupied	657704.23	5405621.08	45	-	-
663-W	Non-Participating	Occupied	657612.79	5405621.08	45	-	-
664	Participating	Occupied	669795.86	5402799.28	38	61	6,291
664-N	Participating	Occupied	669795.86	5402845.00	38	-	-
664-S	Participating	Occupied	669795.86	5402753.56	38	-	-
664-E	Participating	Occupied	669841.58	5402799.28	38	-	-
664-W	Participating	Occupied	669750.14	5402799.28	38	-	-
665	Participating	Occupied	677165.91	5404232.01	35	76	5,385
665-N	Participating	Occupied	677165.91	5404277.73	35	-	-
665-S	Participating	Occupied	677165.91	5404186.29	35	-	-
665-E	Participating	Occupied	677211.63	5404232.01	34	-	-
665-W	Participating	Occupied	677120.19	5404232.01	35	-	-
696	Participating	Occupied	653077.60	5402327.99	32	21	9,895

Table B-1: Sound Level Modeling Results at Discrete Points in Burke County - Sorted by Modeling ID

Modeling ID	Participation Status	Occupancy Status	Coordinates UTM NAD83 Zone 13N		Source Only Broadband Sound Level (dBA)	Nearest Wind Turbine ID	Distance to Nearest Wind Turbine (ft)[1]
			X (m)	Y (m)			
696-N	Participating	Occupied	653077.60	5402373.71	32	-	-
696-S	Participating	Occupied	653077.60	5402282.27	31	-	-
696-E	Participating	Occupied	653123.33	5402327.99	32	-	-
696-W	Participating	Occupied	653031.88	5402327.99	31	-	-
717	Non-Participating	Occupied	674935.99	5398206.76	32	64	8,292
717-N	Non-Participating	Occupied	674935.99	5398252.48	32	-	-
717-S	Non-Participating	Occupied	674935.99	5398161.04	32	-	-
717-E	Non-Participating	Occupied	674981.71	5398206.76	28	-	-
717-W	Non-Participating	Occupied	674890.27	5398206.76	32	-	-
718	Non-Participating	Occupied	673442.47	5397291.89	32	64	7,162
718-N	Non-Participating	Occupied	673442.47	5397337.61	32	-	-
718-S	Non-Participating	Occupied	673442.47	5397246.17	32	-	-
718-E	Non-Participating	Occupied	673488.19	5397291.89	32	-	-
718-W	Non-Participating	Occupied	673396.75	5397291.89	32	-	-
719	Non-Participating	Occupied	670879.97	5397517.72	31	65	8,356
719-N	Non-Participating	Occupied	670879.97	5397563.44	29	-	-
719-S	Non-Participating	Occupied	670879.97	5397472.00	31	-	-
719-E	Non-Participating	Occupied	670925.69	5397517.72	31	-	-
719-W	Non-Participating	Occupied	670834.25	5397517.72	31	-	-
720	Non-Participating	Occupied	669131.86	5399287.37	30	65	10,143
720-N	Non-Participating	Occupied	669131.86	5399333.09	30	-	-
720-S	Non-Participating	Occupied	669131.86	5399241.65	29	-	-
720-E	Non-Participating	Occupied	669177.58	5399287.37	29	-	-
720-W	Non-Participating	Occupied	669086.14	5399287.37	30	-	-
722	Participating	Occupied	664642.14	5400851.93	35	48	6,360
722-N	Participating	Occupied	664642.14	5400897.65	35	-	-
722-S	Participating	Occupied	664642.14	5400806.21	35	-	-
722-E	Participating	Occupied	664687.86	5400851.93	35	-	-
722-W	Participating	Occupied	664596.42	5400851.93	35	-	-
724	Participating	Occupied	667348.81	5401202.73	31	52	10,932
724-N	Participating	Occupied	667348.81	5401248.45	32	-	-
724-S	Participating	Occupied	667348.81	5401157.01	32	-	-
724-E	Participating	Occupied	667394.53	5401202.73	32	-	-
724-W	Participating	Occupied	667303.09	5401202.73	32	-	-
741	Non-Participating	Occupied	650732.26	5408171.48	33	1	8,267
741-N	Non-Participating	Occupied	650732.26	5408217.20	33	-	-
741-S	Non-Participating	Occupied	650732.26	5408125.76	33	-	-
741-E	Non-Participating	Occupied	650777.98	5408171.48	33	-	-
741-W	Non-Participating	Occupied	650686.54	5408171.48	32	-	-
782	Non-Participating	Occupied	678832.34	5404513.40	24	76	10,306
782-N	Non-Participating	Occupied	678832.34	5404559.12	24	-	-
782-S	Non-Participating	Occupied	678832.34	5404467.68	24	-	-
782-E	Non-Participating	Occupied	678878.06	5404513.39	24	-	-
782-W	Non-Participating	Occupied	678786.62	5404513.40	24	-	-
994	Non-Participating	Occupied	678728.52	5406216.47	27	76	13,667
994-N	Non-Participating	Occupied	678728.52	5406262.19	27	-	-
994-S	Non-Participating	Occupied	678728.52	5406170.75	27	-	-
994-E	Non-Participating	Occupied	678774.24	5406216.47	27	-	-
994-W	Non-Participating	Occupied	678682.80	5406216.47	27	-	-
995	Non-Participating	Occupied	678551.63	5406336.20	27	76	13,619
995-N	Non-Participating	Occupied	678551.63	5406381.92	27	-	-
995-S	Non-Participating	Occupied	678551.64	5406290.48	27	-	-
995-E	Non-Participating	Occupied	678597.36	5406336.20	27	-	-
995-W	Non-Participating	Occupied	678505.92	5406336.20	27	-	-
996	Non-Participating	Occupied	678486.54	5406784.24	27	76	14,709
996-N	Non-Participating	Occupied	678486.54	5406829.96	27	-	-
996-S	Non-Participating	Occupied	678486.54	5406738.52	27	-	-
996-E	Non-Participating	Occupied	678532.26	5406784.24	26	-	-
996-W	Non-Participating	Occupied	678440.82	5406784.24	27	-	-
998	Participating	Occupied	679663.45	5400914.56	27	76	13,614
998-N	Participating	Occupied	679663.45	5400960.28	27	-	-
998-S	Participating	Occupied	679663.45	5400868.84	27	-	-
998-E	Participating	Occupied	679709.17	5400914.56	27	-	-
998-W	Participating	Occupied	679617.73	5400914.56	27	-	-
1024	Non-Participating	Occupied	665502.49	5408964.57	31	47	10,034
1024-N	Non-Participating	Occupied	665502.49	5409010.29	31	-	-
1024-S	Non-Participating	Occupied	665502.49	5408918.85	31	-	-
1024-E	Non-Participating	Occupied	665548.21	5408964.57	31	-	-
1024-W	Non-Participating	Occupied	665456.77	5408964.57	31	-	-
1026	Non-Participating	Occupied	663691.88	5409327.88	34	47	7,810
1026-N	Non-Participating	Occupied	663691.88	5409373.60	34	-	-
1026-S	Non-Participating	Occupied	663691.88	5409282.16	34	-	-
1026-E	Non-Participating	Occupied	663737.61	5409327.88	34	-	-
1026-W	Non-Participating	Occupied	663646.16	5409327.88	34	-	-
1029	Participating	Occupied	664482.88	5402146.18	41	52	3,204
1029-N	Participating	Occupied	664482.88	5402191.90	42	-	-
1029-S	Participating	Occupied	664482.88	5402100.45	41	-	-

Table B-1: Sound Level Modeling Results at Discrete Points in Burke County - Sorted by Modeling ID

Modeling ID	Participation Status	Occupancy Status	Coordinates UTM NAD83 Zone 13N		Source Only Broadband Sound Level (dBA)	Nearest Wind Turbine ID	Distance to Nearest Wind Turbine (ft)[1]
			X (m)	Y (m)			
1029-E	Participating	Occupied	664528.60	5402146.17	41	-	-
1029-W	Participating	Occupied	664437.16	5402146.17	41	-	-
1033	Participating	Occupied	658419.99	5401142.26	37	37	5,292
1033-N	Participating	Occupied	658419.99	5401187.98	37	-	-
1033-S	Participating	Occupied	658419.99	5401096.54	37	-	-
1033-E	Participating	Occupied	658465.71	5401142.26	37	-	-
1033-W	Participating	Occupied	658374.27	5401142.26	37	-	-
1034	Participating	Occupied	658597.00	5400979.64	36	37	5,938
1034-N	Participating	Occupied	658597.00	5401025.36	36	-	-
1034-S	Participating	Occupied	658597.00	5400933.92	36	-	-
1034-E	Participating	Occupied	658642.72	5400979.64	36	-	-
1034-W	Participating	Occupied	658551.28	5400979.64	36	-	-
1036	Participating	Occupied	652972.03	5406813.33	37	3	5,613
1036-N	Participating	Occupied	652972.03	5406859.05	38	-	-
1036-S	Participating	Occupied	652972.03	5406767.61	37	-	-
1036-E	Participating	Occupied	653017.75	5406813.32	38	-	-
1036-W	Participating	Occupied	652926.31	5406813.33	37	-	-
1043	Participating	Occupied	652014.34	5410678.80	34	1	6,254
1043-N	Participating	Occupied	652014.34	5410724.52	34	-	-
1043-S	Participating	Occupied	652014.34	5410633.08	35	-	-
1043-E	Participating	Occupied	652060.06	5410678.80	35	-	-
1043-W	Participating	Occupied	651968.62	5410678.80	34	-	-
1045	Non-Participating	Occupied	655959.74	5409989.76	45	8	2,743
1045-N	Non-Participating	Occupied	655959.74	5410035.48	45	-	-
1045-S	Non-Participating	Occupied	655959.74	5409944.04	46	-	-
1045-E	Non-Participating	Occupied	656005.47	5409989.76	45	-	-
1045-W	Non-Participating	Occupied	655914.02	5409989.76	45	-	-
1046	Non-Participating	Occupied	655929.94	5410862.54	40	8	4,771
1046-N	Non-Participating	Occupied	655929.94	5410908.26	40	-	-
1046-S	Non-Participating	Occupied	655929.94	5410816.82	40	-	-
1046-E	Non-Participating	Occupied	655975.66	5410862.54	40	-	-
1046-W	Non-Participating	Occupied	655884.22	5410862.54	40	-	-

1) Distances are only provided for receptors representative of the structure and not the 150-foot offset points. The distances presented are calculated from the receptor (assumed building center point) to the closest wind turbine and are not intended for the evaluation of setback requirements