

**RESPONSE TO OPSB STAFF REQUEST DATA REQUEST**

**Trishe Wind Ohio, LLC**

Case No. 16-343-EL-BGA

On March 4, 2016, clarification was requested by Ohio Power Siting Board staff regarding the use of the term “revision” in the previously submitted Sound Propagation Model Update, January 2016 revision dated February 11, 2016 (Attachment A – Supplemental Appendix I - Acoustic Assessment).

The term “revision” is found on page 5 of the report in reference to “Figure 1: Map of Modeled Turbine Locations, January 2016 Revision”.

“Revision” as used here is referring to two things:

- 1) The sound propagation model itself is being revised from its previous version.
- 2) The reduction to 50 from 60 locations previously modeled as a maximum of 50 will be used under the turbines now considered for the project.

The actual locations of potential turbines have not changed from those 60 previously permitted.



# DRAFT MEMO

**TO:** Matthias Weigel

**FROM:** Karl Washburn, INCE Bd. Cert.

**DATE:** February 11, 2016

**SUBJECT:** Northwest Ohio Wind – Sound Propagation Model Update, January 2016 Rev.

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In August 2013, RSG conducted a Noise Impact Assessment (NIA) for the Northwest Ohio Wind Project (Project) in Paulding County, Ohio. RSG updated the sound propagation model for the Project in November 2015, modeling Gamesa G114 turbines. At the request of Starwood Energy, RSG has updated the sound propagation model once again, looking at three turbine options and two different heights for two of them, for a total of five scenarios. This memorandum provides:

- A summary of the changes made to the updated model;
- The updated model results; and
- Recommended mitigation to meet the permitted sound level limit for the project (47 dBA).

The 2013 NIA includes a primer on noise, a description of the project area, background sound level monitoring results, a discussion of construction impacts, and a discussion of wind turbine sound. Please refer to that document for details on these topics.

## MODEL UPDATE & METHODOLOGY

The sound propagation model described in the 2013 NIA and updated in the November 2015 memorandum, was updated with revised locations for 50 turbines provided by the client in January 2016. Five scenarios were modeled, involving three different turbine models, two of which were modeled at different heights. The turbine models included GE 2.3-116 at 80 m and 94 m hub heights, Vestas V110-2.0 at 80 m and 95 m hub heights, and Vestas 126-3.45 at 87 m hub heights.

Sound power levels specifications from the manufacturers were used to assign source levels to the turbines in the model for each scenario. In all cases, the worst-case sound levels were selected. Sound emissions from wind turbines increase with increasing hub height wind speed up to a point, and then plateau at a maximum sound power level. The minimum hub height wind speeds at which each turbine model reaches its maximum sound power level are listed in Table 1. The manufacturer's specification for the model GE 2.3-116 turbine did not specify to what hub height its sound emissions data corresponded, so a single sound power level spectrum was used for both cases. The



octave band sound power levels used in the model reported here are provided in Table 2. The sound power level data from the manufacturers for these models were listed as “apparent”, with an associated uncertainty of K=2 dB for a 95% confidence level. Therefore, each turbine’s sound power level as represented in the model was increased by 2 dB from that shown in the Table. The location of each turbine is shown in Figure 1.

As was done for the 2013 NIA, the sound levels from the adjacent Blue Creek Wind Project were included in the propagation model. The turbines at the Blue Creek project are Gamesa Model G90. The sound power levels selected for the G90 turbines is the same as that used in the 2013 and 2015 models.

As was done for the 2013 NIA, modeling was conducted in compliance with the ISO 9613-2 standard, “Acoustics – Attenuation of sound during propagation outdoors, Part 2: General Method of Calculation.” The ISO standard states, in part:

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

The model takes into account source sound power levels, surface reflection and absorption, atmospheric absorption, geometric divergence, meteorological conditions, walls, barriers, berms, and terrain. The ISO standard was implemented in the CadnaA® acoustical modeling software developed by Datakustik GmbH. CadnaA® is an internationally accepted acoustical model, used by many other noise control professionals in the United States and abroad.

Sound propagation modeling in compliance with ISO 9613-2 simulates a moderate nighttime inversion or moderate downwind conditions. Spectral ground attenuation and mixed-attenuation ground ( $G=0.5$ ) were assumed.

A 25-meter by 25-meter grid of receivers<sup>1</sup> was set up in the model covering 183 square miles around the project. Set at a relative height of 1.5 m (5 ft) above the terrain (the approximate height of the human ear when standing), this grid of receivers yielded the data from which the iso-contours of sound pressure level were derived. In addition, over 800 discrete receivers placed at the locations of non-participating and participating residences. The discrete receivers were set at a relative height of 4 m (13 ft) above the terrain, to emulate the position of a second-story bedroom window.

## MODEL RESULTS AND RECOMMENDED MITIGATION

Models results are presented in Figure 2 through Figure 6. Each Figure shows the sound level iso-contours resulting from turbine operations. Condition 38 of the Project’s Certificate from the Ohio Power Siting Board (13-197-EL-BGN) limits nighttime sound levels to 47 dBA. In each Figure, the contour along which the sound level is estimated to be 47 dBA is represented by a light blue line.

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<sup>1</sup> A “receiver” in a sound propagation model is a point in space at which the simulation computes the resulting sound pressure level from all active sound sources.



This level is located between the contours for 45 dBA (orange lines) and the contours for 50 dBA (red lines).

The 2013 NIA included sound level reductions from Noise Reduced Operations (NRO) and some nighttime stoppages that would be necessary to meet the 47 dBA nighttime limit at every residence. NRO is typically the preferred method of attenuating sound emitted by turbines, because it can generally be altered incrementally (attenuation of 1 dB to 5 dB) to maximize the power output of the wind farm while reducing noise. Under those meteorological conditions when an NRO does not provide sufficient attenuation, it may become necessary to shut down certain turbines for a period of time. Usually stoppages<sup>2</sup> are scheduled during a wind farm's nighttime operation and/or under specified wind directions.

The model results presented in this memorandum include a mitigation recommendation for each turbine under worst-case conditions (maximum sound emission), including an additional 2 dB to account for uncertainty in the apparent sound power levels. In the Figures, each proposed NW Ohio turbine is color-coded with a recommended reduction due to NRO or a temporary stoppage that, if observed, will allow each residence in the Project area to remain below the 47 dBA limit.

With the indicated NROs, the highest estimated sound pressure levels at receivers north of Ohio 114, which separates the NW Ohio Project from the Blue Creek Project, are listed in Table 3.

The same Tables lists the highest unweighted sound levels in the 31.5 Hz and 63 Hz octave bands at all receivers. With the indicated NROs, for all turbine models these octave band sound levels are below those that would result in moderately perceptible building vibrations, as specified in standard ANSI S12.2.

## CONCLUSION

The results of sound propagation modeling for five scenarios proposed in a January 2016 revision of the turbine layout are presented in this memorandum. These results indicate that the Northwest Ohio Wind Project can remain below the permitted sound level limit of 47 dBA in each scenario, under conservative assumptions, by invoking some level of NRO or temporary stoppages for select turbines.

Please let us know if you have any questions.



**KARL WASHBURN, INCE BD. CERT.**

**Senior Consultant, Acoustics**

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<sup>2</sup> Modeling uses conservative assumptions of the combined maximum sound emissions for all turbines and favorable conditions for propagation, a situation that occurs during limited times. This means that the extent of the mitigation shown, including turbine stoppages, may only be necessary for certain meteorological conditions.



**TABLE 1: MINIMUM HUB HEIGHT WIND SPEED AT WHICH TURBINES PRODUCE MAXIMUM SOUND POWER**

Mfgr	Model	Height (m)	Wind Speed of max SWL (m/s)	
			10	10
<i>GE</i>	2.3-116	80	10	10
	2.3-116	94	10	10
<i>Vestas</i>	V110 2.0	80	11.2	11.2
	V110 2.0	95	11.5	11.5
<i>Vestas</i>	V126 3.45	87	11	11
	Gam.	100 <sup>3</sup>	8.7	8.7

**TABLE 2: TURBINE OCTAVE BAND SOUND POWER LEVELS (UNWEIGHTED) AND OVERALL SOUND POWER LEVELS (A-WEIGHTED) AS APPLIED TO THE ACOUSTICAL MODEL**

			Octave Band Center Frequency (Hz)									Overall
Mfgr	Mod.	Ht. (m)	31.5 (dB)	63 (dB)	125 (dB)	250 (dB)	500 (dB)	1000 (dB)	2000 (dB)	4000 (dB)	8000 (dB)	SWL (dBA)
<i>GE</i>	2.3-116	80	118.4	115.2	111.3	108.3	106.0	102.5	96.1	86.1	67.6	107.5
	2.3-116	94	118.4	115.2	111.3	108.3	106.0	102.5	96.1	86.1	67.6	107.5
<i>Vestas</i>	V110 2.0	80	118.0	114.1	109.7	106.5	103.5	102.1	100.4	96.4	87.6	107.5
	V110 2.0	95	118.2	114.2	109.8	106.5	103.5	102.1	100.4	96.3	87.5	107.5
<i>Vestas</i>	V126 3.45	87	119.0	115.6	110.8	105.4	103.7	103.4	98.9	92.3	84.4	107.4
	G90	100		110	109	109	105	100	96	94	92	108.8

**TABLE 3: MAXIMUM A-WEIGHTED SOUND LEVELS FOR PARTICIPATING AND NON-PARTICIPATING RECEIVERS, AND MAXIMUM LOWER OCTAVE BAND SOUND LEVELS FOR ALL RECEIVERS**

			Max. A-weighted Sound Level (dBA)		Maximum Octave Band Sound Level (dB)	
Mfgr	Model	Height (m)	Partic.	Non-Partic.	31.5 Hz	63 Hz
<i>GE</i>	2.3-116	80	47	47	63	64
	2.3-116	94	48	47	63	64
<i>Vestas</i>	V110 2.0	80	47	47	64	64
	V110 2.0	95	47	47	64	64
<i>Vestas</i>	V126 3.45	87	47	47	64	64

<sup>3</sup>At the abutting Blue Creek wind project, 163 Gamesa G90 turbines were modeled. Of these, 161 had hub heights of 100m, and 2 had hub heights of 93 m.



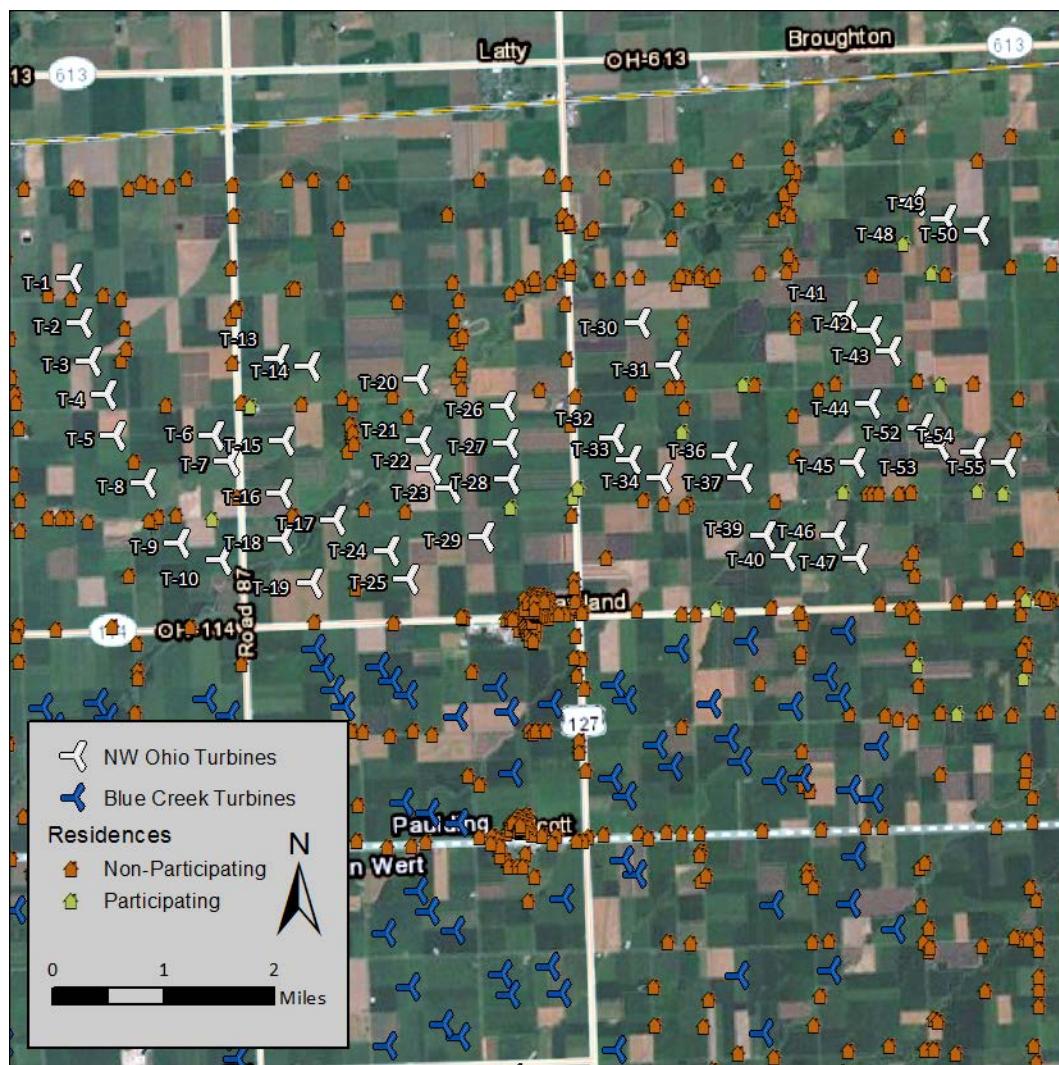


FIGURE 1: MAP OF MODELED TURBINE LOCATIONS, JANUARY 2016 REVISION

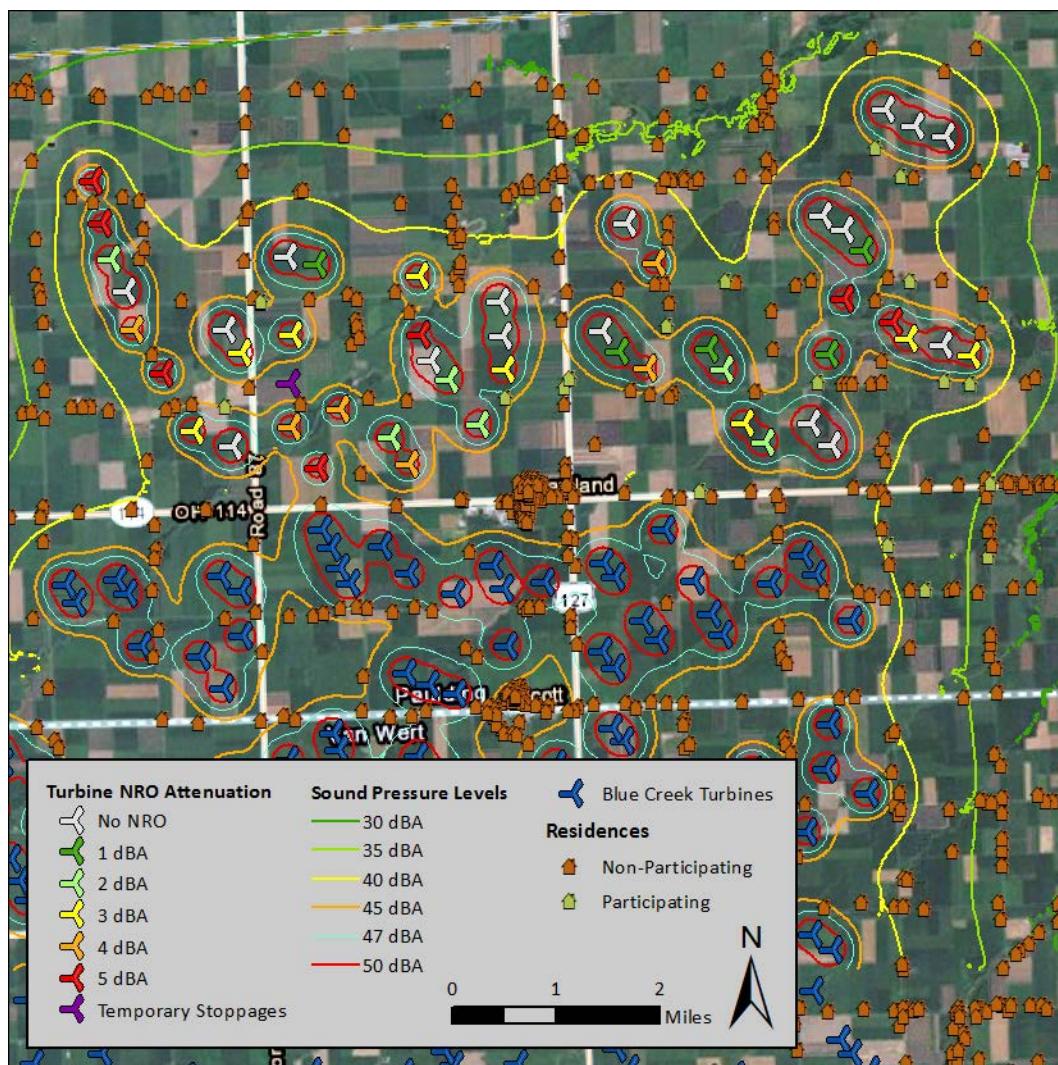


FIGURE 2: SOUND PROPAGATION MODEL RESULTS WITH RECOMMENDED NRO (GE 2.3-116 AT 80 M HEIGHT)

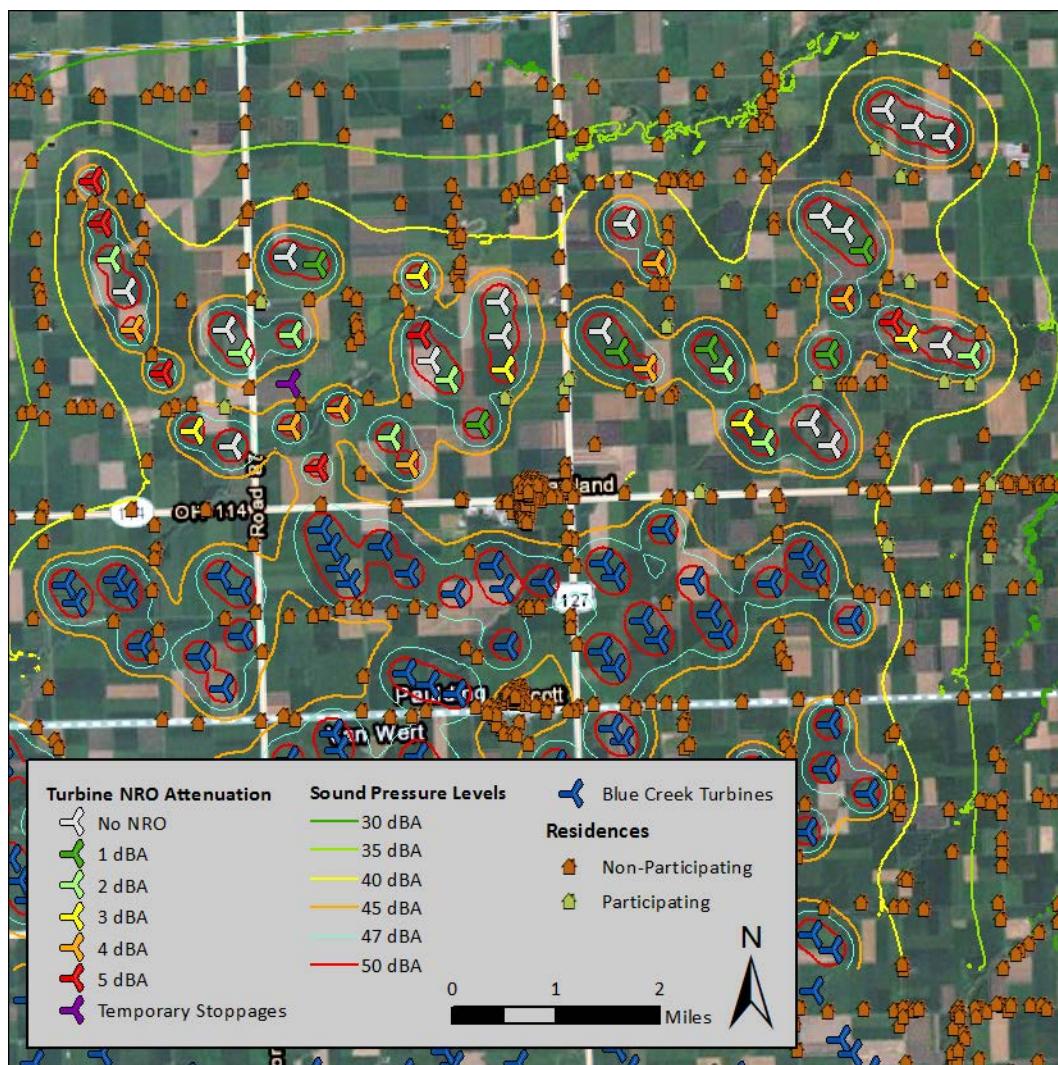


FIGURE 3: SOUND PROPAGATION MODEL RESULTS WITH RECOMMENDED NRO (GE 2.3-116 AT 94 M HEIGHT)

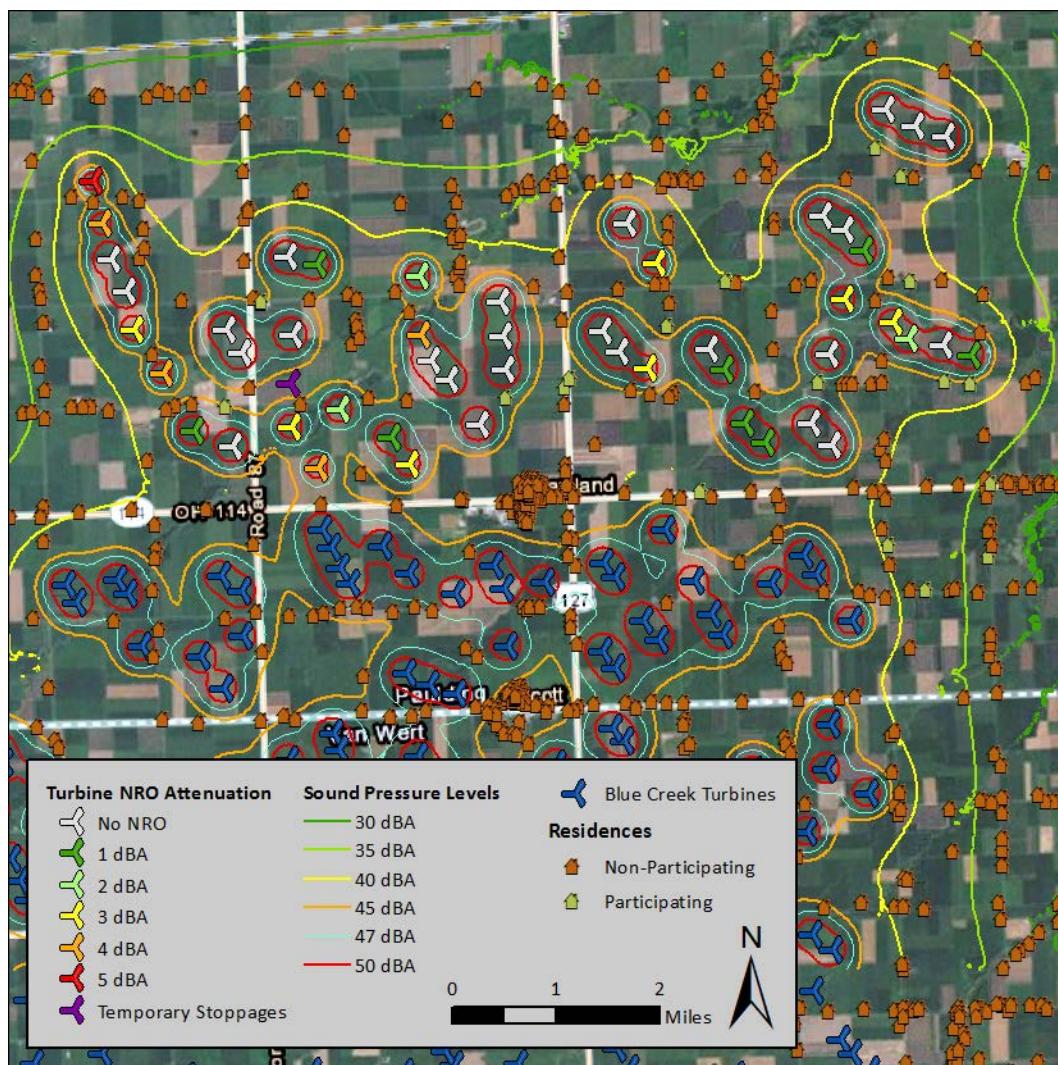


FIGURE 4: SOUND PROPAGATION MODEL RESULTS WITH RECOMMENDED NRO (VESTAS V110-2.2 AT 80 M HEIGHT)

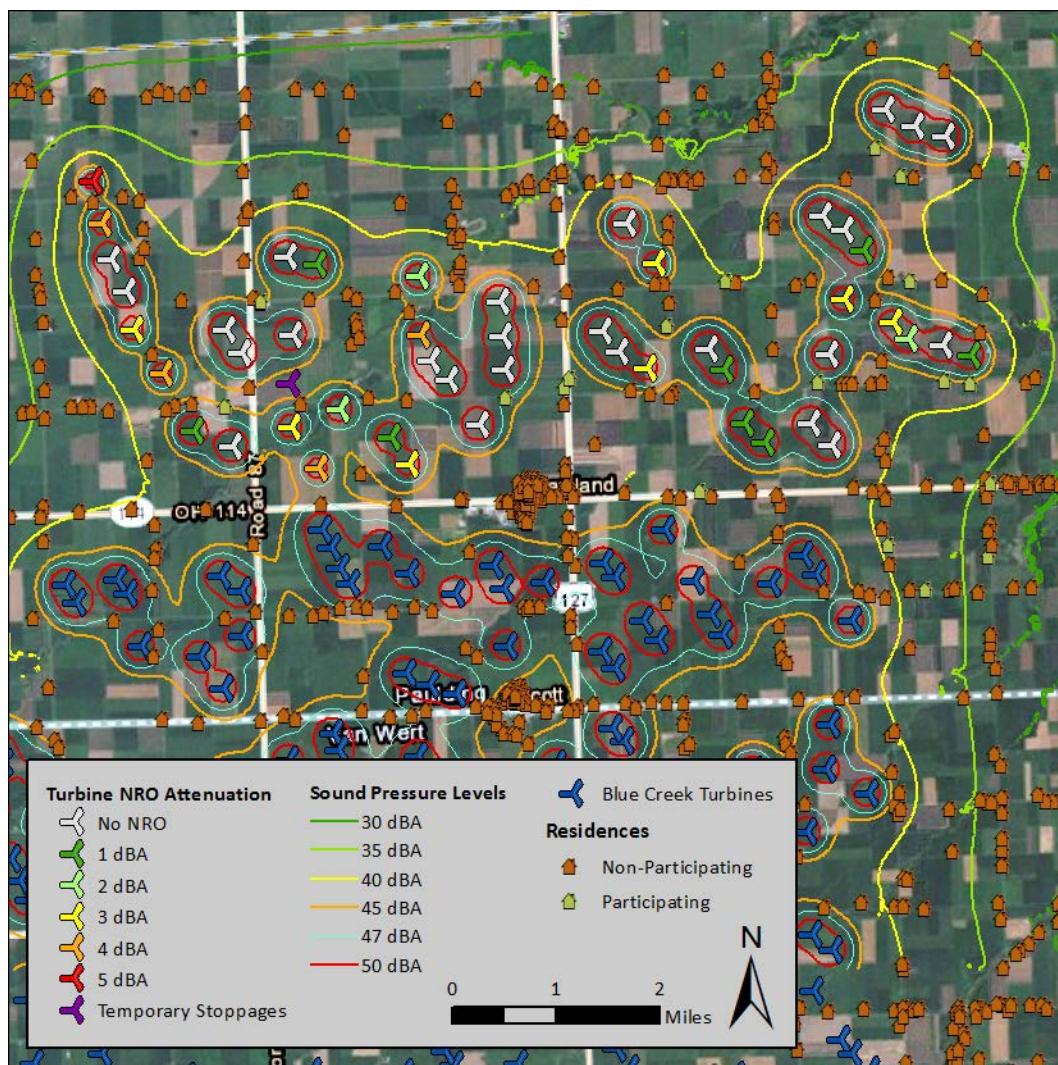


FIGURE 5: SOUND PROPAGATION MODEL RESULTS WITH RECOMMENDED NRO (VESTAS V110-2.2 AT 95 M HEIGHT)

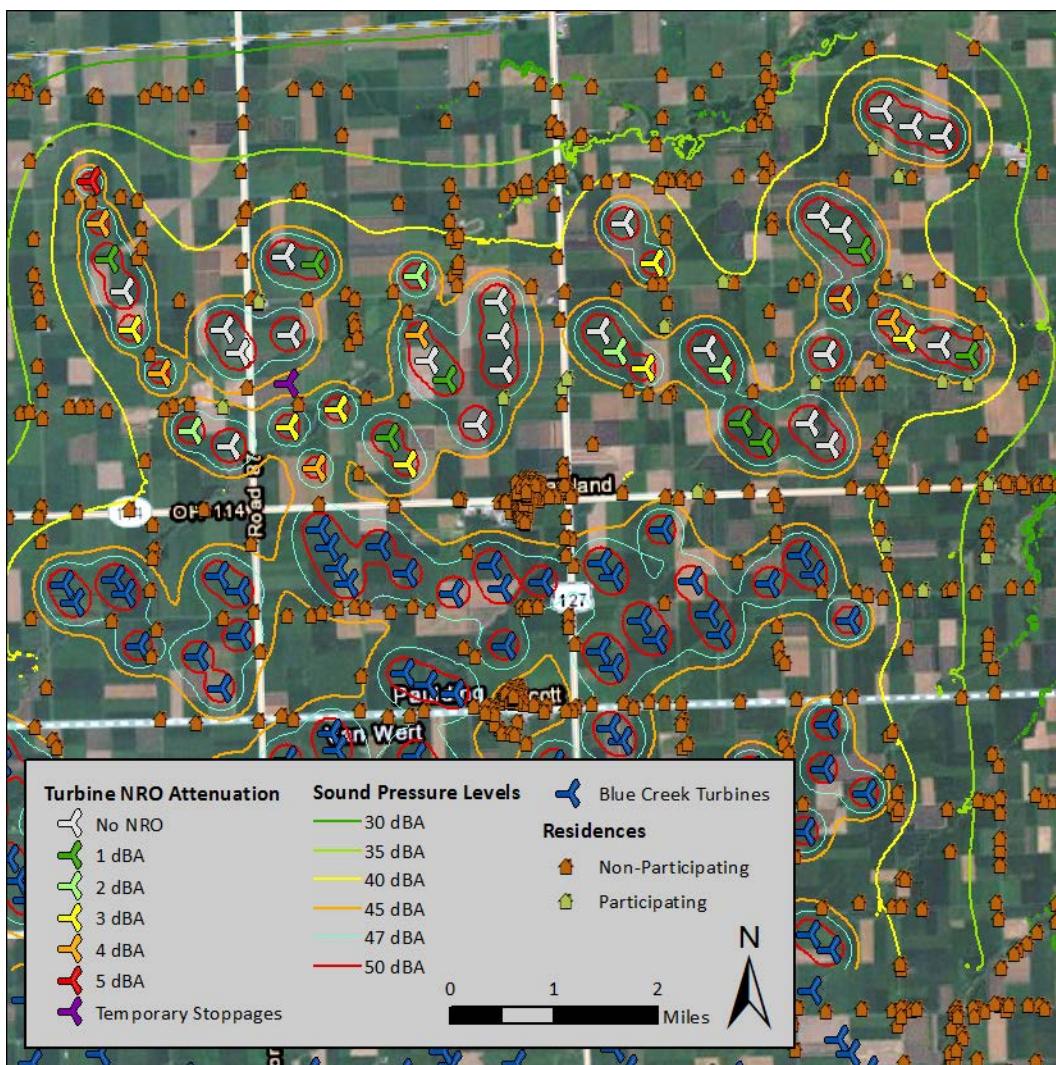


FIGURE 6: SOUND PROPAGATION MODEL RESULTS WITH RECOMMENDED NRO (VESTAS V126-3.45 AT 87 M HEIGHT)

Turbine ID	NAD 83 Zone 16N Coordinates		Base Height	GE 2.3-116 (80 m)		GE 2.3-116 (94 m)		Vestas V110-2.0 (80 m)		Vestas V110-2.0 (95 m)		Vestas 126-3.45 (87 m)	
	X (m)	Y (m)		(m ASL)	SWL (dBA)	NRO (dB)	SWL (dBA)	NRO (dB)	SWL (dBA)	NRO (dB)	SWL (dBA)	NRO (dB)	SWL (dBA)
NW Ohio T-001	696667	4548601	226	104.5	5	104.5	5	104.5	5	104.5	5	104.4	5
NW Ohio T-002	696817	4547955	226	104.5	5	104.5	5	105.5	4	105.5	4	105.4	4
NW Ohio T-003	696943	4547397	226	107.5	2	107.5	2	109.5	--	109.5	--	108.4	1
NW Ohio T-004	697177	4546908	226	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-005	697300	4546314	226	105.5	4	105.5	4	106.5	3	106.5	3	106.4	3
NW Ohio T-006	698739	4546308	225	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-007	698962	4545949	225	106.5	3	107.5	2	109.5	--	109.5	--	109.4	--
NW Ohio T-008	697753	4545637	226	104.5	5	104.5	5	105.5	4	105.5	4	105.4	4
NW Ohio T-009	698226	4544753	226	106.5	3	106.5	3	108.5	1	108.5	1	107.4	2
NW Ohio T-010	698838	4544509	226	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-013	699680	4547431	225	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-014	700128	4547318	224	108.5	1	108.5	1	108.5	1	108.5	1	108.4	1
NW Ohio T-015	699752	4546236	225	106.5	3	107.5	2	109.5	--	109.5	--	109.4	--
NW Ohio T-016	699716	4545480	226	TS	TS	TS	TS	TS	TS	TS	TS	TS	TS
NW Ohio T-017	700501	4545090	225	105.5	4	105.5	4	107.5	2	107.5	2	106.4	3
NW Ohio T-018	699744	4544815	225	105.5	4	105.5	4	106.5	3	106.5	3	106.4	3
NW Ohio T-019	700160	4544166	226	104.5	5	104.5	5	105.5	4	105.5	4	105.4	4
NW Ohio T-020	701715	4547138	224	106.5	3	106.5	3	107.5	2	107.5	2	107.4	2
NW Ohio T-021	701743	4546241	224	104.5	5	104.5	5	105.5	4	105.5	4	105.4	4
NW Ohio T-022	701906	4545841	224	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-023	702182	4545547	224	107.5	2	107.5	2	109.5	--	109.5	--	108.4	1
NW Ohio T-024	701279	4544643	224	107.5	2	107.5	2	108.5	1	108.5	1	108.4	1
NW Ohio T-025	701569	4544238	224	105.5	4	105.5	4	106.5	3	106.5	3	106.4	3
NW Ohio T-026	702974	4546749	223	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-027	703012	4546208	223	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-028	703044	4545689	223	106.5	3	106.5	3	109.5	--	109.5	--	109.4	--
NW Ohio T-029	702656	4544842	224	107.5	2	108.5	1	109.5	--	109.5	--	109.4	--
NW Ohio T-030	704930	4547951	222	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-031	705383	4547333	222	105.5	4	105.5	4	106.5	3	106.5	3	106.4	3
NW Ohio T-032	704559	4546285	223	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-033	704805	4545969	222	108.5	1	108.5	1	109.5	--	109.5	--	107.4	2
NW Ohio T-034	705244	4545709	222	105.5	4	105.5	4	106.5	3	106.5	3	106.4	3
NW Ohio T-036	706204	4546021	222	108.5	1	108.5	1	109.5	--	109.5	--	109.4	--
NW Ohio T-037	706433	4545698	222	107.5	2	107.5	2	108.5	1	108.5	1	107.4	2
NW Ohio T-039	706753	4544865	221	106.5	3	106.5	3	108.5	1	108.5	1	108.4	1
NW Ohio T-040	707063	4544570	222	107.5	2	107.5	2	108.5	1	108.5	1	108.4	1
NW Ohio T-041	707954	4548071	221	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-042	708306	4547849	221	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-043	708588	4547541	221	108.5	1	108.5	1	108.5	1	108.5	1	108.4	1
NW Ohio T-044	708293	4546778	221	104.5	5	105.5	4	106.5	3	106.5	3	105.4	4
NW Ohio T-045	708064	4545930	221	108.5	1	108.5	1	109.5	--	109.5	--	109.4	--
NW Ohio T-046	707794	4544862	221	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-047	708101	4544534	221	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-048	708940	4549725	220	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-049	709391	4549460	220	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-050	709871	4549300	220	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-052	709043	4546422	221	104.5	5	104.5	5	106.5	3	106.5	3	105.4	4
NW Ohio T-053	709286	4546176	221	106.5	3	106.5	3	107.5	2	107.5	2	106.4	3
NW Ohio T-054	709825	4546077	221	109.5	--	109.5	--	109.5	--	109.5	--	109.4	--
NW Ohio T-055	710265	4545918	220	106.5	3	107.5	2	108.5	1	108.5	1	108.4	1

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO				
	X (m)	Y (m)		GE 2.3-116 (80 m)	GE 2.3-116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)	Vestas 126-3.45 (87 m)
<b>Participating Receivers</b>								
P_Receivers01	712250	4540747	226	31.6	31.6	31.5	31.4	31.4
P_Receivers02	709593	4542282	226	39.3	39.2	39.1	39.1	39.1
P_Receivers03	710557	4542796	226	35.9	35.8	35.6	35.5	35.5
P_Receivers04	709011	4542982	227	41.2	41.2	41.0	41.0	41.0
P_Receivers05	710602	4543937	225	36.5	36.5	36.0	36.0	36.0
P_Receivers06	706098	4543812	226	44.1	44.1	44.0	44.0	44.0
P_Receivers07	710271	4545476	225	45.4	45.9	45.7	45.6	45.8
P_Receivers08	709886	4545522	225	46.2	46.5	46.0	46.0	46.1
P_Receivers09	707928	4545490	225	47.7	47.7	47.4	47.4	47.6
P_Receivers10	703087	4545268	227	47.4	47.6	48.3	48.3	48.4
P_Receivers11	698745	4545113	230	46.4	46.5	46.4	46.4	46.4
P_Receivers12	704003	4545426	228	44.3	44.3	44.0	44.0	43.9
P_Receivers13	704071	4545561	227	44.9	44.9	44.6	44.6	44.4
P_Receivers14	705592	4546368	226	45.7	45.7	45.3	45.3	45.2
P_Receivers15	709342	4547065	225	44.4	44.5	43.9	43.9	43.8
P_Receivers16	706490	4547056	226	42.3	42.3	41.7	41.7	41.7
P_Receivers17	699298	4546727	230	46.3	46.5	46.3	46.3	46.5
P_Receivers18	699302	4546754	230	46.2	46.5	46.2	46.2	46.4
P_Receivers19	709213	4548680	225	44.7	44.7	43.6	43.6	43.8
P_Receivers20	708806	4549116	225	46.2	46.2	45.1	45.1	45.4
<b>Non-participating Receivers, North of OH 114</b>								
Residences024	702428	4543681	228	44.4	44.4	44.3	44.3	44.4
Residences027	703250	4543605	228	44.0	44.0	43.9	43.9	43.9
Residences029	703039	4543650	228	44.0	44.0	44.0	44.0	44.0
Residences030	703354	4543862	228	43.3	43.4	43.3	43.3	43.3
Residences031	703394	4543672	228	43.6	43.7	43.6	43.6	43.6
Residences032	703513	4543789	228	43.3	43.3	43.3	43.2	43.2
Residences033	703496	4543649	228	43.7	43.7	43.6	43.6	43.6
Residences034	703650	4543677	228	43.5	43.5	43.5	43.4	43.4
Residences035	703645	4543783	228	43.2	43.3	43.2	43.2	43.1
Residences036	703717	4543736	228	43.3	43.4	43.3	43.2	43.2
Residences037	703849	4543731	228	43.3	43.3	43.2	43.2	43.2
Residences038	703943	4543738	228	43.3	43.3	43.2	43.2	43.2
Residences039	704157	4543744	228	43.4	43.4	43.3	43.3	43.2
Residences040	704106	4543788	228	43.2	43.2	43.1	43.1	43.1
Residences041	704049	4543823	228	43.1	43.1	43.0	43.0	43.0
Residences042	704035	4543919	228	42.9	42.9	42.8	42.7	42.7
Residences043	704025	4544228	228	42.4	42.5	42.3	42.3	42.2
Residences044	703386	4544011	228	43.1	43.2	43.1	43.1	43.1
Residences045	704941	4543789	227	44.1	44.1	44.0	44.0	43.9
Residences046	704481	4544551	227	42.3	42.3	42.1	42.1	42.0

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO				
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)	Vestas 126-3.45 (87 m)
Residences048	703990	4545166	227	43.5	43.5	43.3	43.3	43.2
Residences051	703527	4546983	227	45.7	45.7	44.9	44.9	45.0
Residences052	704034	4546901	227	44.5	44.5	43.7	43.7	43.8
Residences053	702311	4547173	227	45.1	45.1	44.6	44.6	44.7
Residences054	702379	4547008	227	45.9	45.9	45.3	45.3	45.4
Residences055	702350	4547669	227	42.2	42.2	41.6	41.6	41.7
Residences056	703912	4547435	227	42.6	42.6	41.8	41.8	41.8
Residences057	704836	4546939	226	45.5	45.5	44.9	44.9	44.8
Residences058	702266	4547990	227	40.5	40.5	39.8	39.8	39.9
Residences059	703886	4548244	226	40.4	40.4	39.5	39.5	39.6
Residences060	702255	4548553	227	38.0	38.0	37.3	37.3	37.3
Residences061	703213	4548472	226	38.4	38.4	37.6	37.6	37.6
Residences062	703387	4548517	226	38.4	38.4	37.5	37.6	37.5
Residences063	703470	4548519	226	38.6	38.5	37.8	37.7	37.7
Residences064	703855	4548728	226	38.6	38.5	37.7	37.7	37.7
Residences065	703975	4548682	226	39.1	39.0	38.2	38.1	38.2
Residences066	704388	4548594	226	41.2	41.1	40.2	40.2	40.3
Residences067	704701	4548607	226	42.5	42.5	41.6	41.6	41.7
Residences068	703440	4548608	227	38.2	38.2	37.4	37.4	37.4
Residences069	703966	4548772	226	38.7	38.6	37.8	37.7	37.8
Residences070	703959	4549372	226	36.4	36.3	35.5	35.5	35.5
Residences071	704253	4549280	225	36.7	36.7	35.8	35.8	35.7
Residences072	704304	4549330	225	36.9	36.9	36.1	36.0	36.0
Residences073	704461	4550080	224	34.5	34.4	33.7	33.6	33.5
Residences074	703664	4550108	226	33.9	33.9	33.2	33.1	33.1
Residences075	703911	4549987	226	34.3	34.3	33.6	33.5	33.4
Residences076	703847	4549409	226	36.1	36.0	35.3	35.2	35.2
Residences077	703849	4549516	226	35.6	35.5	34.7	34.7	34.6
Residences078	703945	4549429	226	36.2	36.1	35.3	35.3	35.2
Residences079	702643	4550035	227	33.4	33.4	32.7	32.7	32.6
Residences080	702188	4549546	227	34.9	34.8	34.3	34.2	34.1
Residences081	700215	4550040	227	33.7	33.6	33.1	33.0	32.9
Residences082	699842	4550035	228	33.6	33.6	33.0	32.9	32.9
Residences083	700673	4549998	228	33.8	33.7	33.2	33.1	33.0
Residences084	699903	4548459	228	40.6	40.6	39.7	39.7	39.8
Residences085	701462	4548269	228	39.4	39.3	38.7	38.7	38.8
Residences087	700049	4546790	229	46.8	47.0	46.6	46.6	46.8
Residences088	700657	4546872	228	44.4	44.5	43.9	43.9	44.1
Residences089	701378	4546904	228	46.0	46.0	45.9	45.9	46.0
Residences090	701596	4546597	228	46.9	46.9	46.7	46.7	46.9
Residences091	700764	4546477	227	43.7	43.8	43.4	43.4	43.5
Residences092	700784	4546267	228	43.7	43.8	43.5	43.5	43.6

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO			
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)
Residences093	700720	4546100	228	43.8	44.0	43.7	43.7
Residences094	699921	4545167	229	46.6	46.7	46.9	46.9
Residences095	700841	4544096	229	46.1	46.2	46.1	46.2
Residences097	701398	4543594	229	46.5	46.5	46.4	46.5
Residences122	698445	4543541	230	43.7	43.7	43.5	43.5
Residences123	697549	4544285	230	42.2	42.2	42.2	42.0
Residences124	696667	4545121	231	39.6	39.6	39.3	39.3
Residences125	696945	4545073	230	40.5	40.6	40.3	40.3
Residences126	697899	4545073	230	45.7	45.7	46.1	45.8
Residences127	697972	4545147	230	45.9	45.9	46.2	46.0
Residences128	698232	4545166	230	46.5	46.6	47.0	46.7
Residences130	699124	4545417	230	45.9	46.2	46.4	46.5
Residences131	698074	4546767	230	44.5	44.6	44.0	44.1
Residences132	699056	4547371	229	44.9	45.0	44.2	44.2
Residences133	699178	4546811	230	46.1	46.3	45.8	46.0
Residences134	697421	4547425	230	46.8	46.8	46.9	46.6
Residences135	697497	4547575	229	45.1	45.1	45.1	44.9
Residences136	697485	4547882	229	43.4	43.4	43.3	43.2
Residences137	697424	4548308	229	41.7	41.7	41.4	41.4
Residences138	697171	4548362	229	43.3	43.3	43.1	43.1
Residences139	696704	4548301	230	47.0	46.9	46.8	46.8
Residences140	699023	4548763	229	37.9	37.9	37.1	37.1
Residences141	699106	4548187	229	41.1	41.2	40.3	40.5
Residences142	699038	4548032	229	41.8	41.8	41.0	41.1
Residences143	699073	4549530	228	35.0	35.0	34.4	34.3
Residences144	699059	4549962	228	33.7	33.6	33.1	33.0
Residences145	698383	4550068	229	33.2	33.2	32.7	32.5
Residences146	697871	4549957	230	33.6	33.6	33.0	32.9
Residences147	698142	4549953	229	33.6	33.5	33.0	32.9
Residences148	697729	4550013	230	33.0	33.2	32.3	32.5
Residences149	697538	4549917	229	33.9	33.8	33.3	33.2
Residences150	696755	4549938	230	33.9	33.9	33.3	33.2
Residences151	696006	4549918	230	33.0	32.9	32.3	32.2
Residences152	694724	4549998	230	29.5	29.4	29.0	28.8
Residences153	694204	4548859	231	30.4	30.4	30.1	29.8
Residences154	695760	4548926	231	36.5	36.5	35.9	35.9
Residences155	696369	4548362	230	44.2	44.1	43.8	43.7
Residences156	695808	4547727	231	39.0	39.0	38.8	38.8
Residences157	695187	4548251	231	34.9	34.9	34.5	34.3
Residences158	694867	4548274	231	33.5	33.5	33.0	32.9
Residences159	694679	4548330	231	32.6	32.6	32.1	32.2
Residences160	694252	4547250	232	32.3	32.2	31.9	31.7

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO				
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)	Vestas 126-3.45 (87 m)
Residences161	695825	4547169	231	39.2	39.2	39.0	39.0	38.8
Residences162	695885	4546924	231	39.4	39.4	39.1	39.1	39.0
Residences163	695938	4546431	232	39.0	39.0	38.6	38.6	38.5
Residences164	695874	4545766	232	37.7	37.7	37.3	37.3	37.2
Residences165	694614	4545019	232	34.2	34.1	34.0	33.9	33.9
Residences166	695001	4545078	232	35.0	35.0	34.8	34.7	34.7
Residences167	695621	4545027	231	36.5	36.5	36.3	36.3	36.2
Residences168	695756	4545044	231	36.9	36.9	36.6	36.6	36.5
Residences169	695959	4544942	231	37.3	37.3	37.1	37.1	37.0
Residences170	696365	4545125	231	38.6	38.6	38.3	38.3	38.3
Residences171	696556	4545127	231	39.2	39.2	39.0	39.0	38.9
Residences172	694207	4543392	233	35.3	35.2	35.2	35.2	35.2
Residences173	694564	4543392	233	36.3	36.3	36.2	36.2	36.2
Residences174	695425	4543409	232	39.1	39.1	39.0	39.0	39.0
Residences175	695922	4543488	232	40.4	40.3	40.3	40.3	40.3
Residences176	695936	4543569	232	40.1	40.1	40.0	40.0	40.0
Residences177	695894	4543412	232	40.7	40.7	40.6	40.6	40.6
Residences179	696489	4543502	231	41.6	41.6	41.6	41.6	41.5
Residences190	706923	4549474	225	37.8	37.8	36.7	36.7	36.7
Residences191	707107	4549745	224	37.5	37.5	36.4	36.4	36.4
Residences192	707176	4549921	224	37.3	37.2	36.1	36.1	36.1
Residences193	707247	4550147	223	36.9	36.8	35.7	35.7	35.7
Residences194	706399	4550325	225	34.9	34.8	33.9	33.8	33.8
Residences195	705440	4549184	225	37.5	37.6	36.5	36.6	36.6
Residences196	705511	4548531	225	41.6	41.6	40.7	40.7	40.8
Residences197	705671	4548634	225	40.1	40.1	39.2	39.2	39.2
Residences198	705841	4548675	225	39.6	39.6	38.7	38.7	38.7
Residences199	705858	4548635	225	39.7	39.7	38.8	38.8	38.8
Residences200	706001	4548590	225	39.6	39.5	38.7	38.6	38.7
Residences201	706081	4548643	225	39.3	39.2	38.4	38.3	38.3
Residences202	707204	4548819	224	40.8	40.8	39.8	39.7	39.8
Residences203	707124	4548694	224	41.0	41.0	39.9	39.9	40.0
Residences204	705606	4547970	226	44.1	44.0	43.3	43.3	43.5
Residences205	705608	4547733	226	45.1	45.1	44.6	44.6	44.8
Residences206	707246	4548010	225	43.9	43.9	42.9	42.9	43.0
Residences207	705555	4547024	226	46.2	46.1	46.0	46.0	46.1
Residences208	705414	4547018	226	46.9	46.8	46.8	46.7	46.9
Residences209	705630	4546733	226	44.6	44.6	44.2	44.2	44.2
Residences211	706658	4547054	226	42.2	42.2	41.6	41.6	41.5
Residences212	707205	4546610	226	43.2	43.3	42.7	42.8	42.7
Residences213	707233	4546019	225	44.7	44.8	44.4	44.4	44.4
Residences214	706950	4545366	226	46.9	46.9	46.9	46.9	46.9

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO				
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Residences215	705681	4545337	227	45.5	45.4	45.3	45.3	45.2
Residences216	705326	4545327	227	46.3	46.3	46.3	46.2	46.1
Residences217	705032	4545386	227	46.9	46.9	46.8	46.8	46.5
Residences218	706285	4543727	226	44.1	44.1	44.0	44.0	44.0
Residences219	706897	4543815	227	44.5	44.5	44.3	44.3	44.4
Residences353	708893	4544472	226	43.4	43.4	42.6	42.6	42.7
Residences354	708972	4544296	226	42.5	42.5	41.8	41.8	41.9
Residences355	708471	4543874	227	44.0	44.0	43.4	43.4	43.5
Residences356	708914	4543813	226	41.7	41.7	41.1	41.1	41.2
Residences357	708766	4543808	227	42.4	42.4	41.8	41.8	41.8
Residences359	709598	4543900	226	39.0	39.1	38.5	38.5	38.5
Residences360	710102	4543907	226	37.7	37.8	37.3	37.2	37.2
Residences361	710523	4543864	225	36.6	36.6	36.1	36.1	36.1
Residences363	710526	4544021	225	36.8	36.9	36.4	36.3	36.3
Residences365	708950	4544631	226	43.2	43.2	42.4	42.4	42.5
Residences366	710494	4544685	225	38.6	38.8	38.2	38.2	38.2
Residences368	708298	4545479	226	46.8	46.8	46.5	46.5	46.6
Residences369	708371	4545481	226	46.4	46.4	46.0	46.0	46.1
Residences370	708453	4545483	226	45.9	46.0	45.5	45.6	45.6
Residences371	708753	4545488	226	44.7	44.8	44.3	44.3	44.2
Residences372	708914	4545496	226	44.5	44.5	44.0	44.1	44.0
Residences373	708914	4545496	226	44.5	44.5	44.0	44.1	44.0
Residences376	708915	4545845	225	46.3	46.4	46.2	46.2	45.9
Residences377	707826	4547075	226	45.4	45.6	44.9	44.9	44.8
Residences378	708815	4546775	226	46.8	47.0	47.0	47.0	46.6
Residences379	709014	4547121	225	45.9	46.0	45.4	45.4	45.3
Residences381	709840	4547075	225	42.7	42.8	42.1	42.1	42.0
Residences382	710488	4546863	224	41.3	41.5	40.8	40.8	40.9
Residences383	708362	4548648	225	45.3	45.3	44.2	44.2	44.4
Residences385	709417	4548672	225	44.8	44.8	43.7	43.7	43.9
Residences386	710372	4548770	224	42.8	42.7	41.7	41.7	41.9
Residences388	709884	4550316	224	42.0	41.9	40.8	40.8	41.0
Residences389	711915	4550355	224	32.6	32.5	31.4	31.3	31.3
Residences390	712397	4550486	224	30.8	30.7	29.7	29.6	29.6
Residences391	712896	4550401	223	29.6	29.4	28.5	28.4	28.4
Residences392	713319	4550517	223	28.3	28.2	27.4	27.2	27.2
Residences393	713559	4550496	223	27.8	27.7	26.8	26.7	26.7
Residences394	710976	4548813	225	38.5	38.5	37.3	37.4	37.5
Residences395	711421	4548741	224	36.1	36.1	35.0	35.0	35.0
Residences396	712043	4547216	224	34.1	34.1	33.4	33.3	33.2
Residences397	712927	4547192	223	31.4	31.4	30.8	30.6	30.6
Residences398	712260	4547224	223	33.4	33.4	32.7	32.6	32.5

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO			
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Residences399	712053	4546550	224	34.4	34.6	33.9	33.8
Residences400	712135	4546406	224	34.2	34.3	33.6	33.6
Residences401	712094	4545774	225	34.3	34.5	33.8	33.8
Residences402	712583	4547255	223	32.4	32.4	31.7	31.5
Residences403	711149	4545493	225	38.8	39.2	38.6	38.6
Residences404	711294	4545570	225	38.1	38.4	37.8	37.9
Residences405	712952	4545575	224	31.4	31.4	30.9	30.7
Residences406	713026	4545575	224	31.2	31.2	30.7	30.6
Residences407	713203	4545589	224	30.7	30.7	30.2	30.0
Residences408	712168	4545145	225	33.6	33.7	33.2	33.1
Residences409	712118	4544910	225	33.6	33.7	33.1	33.0
Residences410	710951	4543934	225	35.6	35.7	35.2	35.1
Residences411	710807	4543974	225	36.0	36.1	35.6	35.5
Residences412	710914	4543891	225	35.7	35.7	35.2	35.1
Residences413	711167	4543881	225	35.0	35.0	34.6	34.5
Residences414	711352	4543957	225	34.6	34.7	34.2	34.1
Residences415	711111	4543951	225	35.2	35.3	34.8	34.8
Residences416	711379	4543906	225	34.5	34.5	34.1	34.0
Residences417	712683	4544508	224	30.7	31.0	30.3	30.4
Residences418	713404	4543990	225	29.7	29.7	29.3	29.2
Residences419	713074	4543965	225	30.4	30.4	30.0	29.9
Residences420	713006	4544019	225	30.6	30.6	30.2	30.1
Residences421	712896	4543945	225	30.8	30.8	30.4	30.3
Residences422	712868	4544024	225	30.9	30.9	30.5	30.4
Residences423	712724	4543999	225	31.3	31.3	30.9	30.8
Residences424	711727	4543899	225	33.6	33.6	33.2	33.1
Residences425	712042	4544143	225	33.1	33.1	32.6	32.6
Residences426	712138	4544179	225	32.8	32.8	32.4	32.3
Residences427	712233	4544190	225	32.6	32.6	32.2	32.1
Residences428	712290	4544195	225	32.5	32.5	32.0	31.9
Residences429	712334	4544193	225	32.3	32.4	31.9	31.8
Residences430	712456	4544202	225	32.1	32.1	31.7	31.6
Residences431	712532	4544213	225	31.9	31.9	31.5	31.4
Residences432	712563	4544162	225	31.8	31.8	31.4	31.3
Residences433	712569	4544103	225	31.7	31.7	31.3	31.2
Residences434	712569	4544038	225	31.6	31.7	31.2	31.2
Residences435	712569	4543982	225	31.7	31.7	31.3	31.2
Residences436	712563	4543925	225	31.7	31.7	31.3	31.2
Residences437	712490	4543911	225	31.8	31.8	31.4	31.3
Residences438	712400	4543920	225	32.0	32.0	31.6	31.5
Residences466	712304	4543892	225	32.2	32.2	31.8	31.7
Residences467	712355	4543979	225	32.2	32.2	31.8	31.6

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Residences468	712403	4544030	225	32.1	32.1	31.7	31.6	31.6
Residences469	712389	4544134	225	32.2	32.2	31.8	31.7	31.6
Residences470	712236	4544134	225	32.6	32.6	32.1	32.1	32.0
Residences471	712140	4544086	225	32.7	32.8	32.3	32.2	32.2
Residences477	712259	4543942	225	32.4	32.4	32.0	31.9	31.8
Residences478	712296	4544026	225	32.3	32.3	31.9	31.8	31.8
Residences479	712045	4543870	225	32.8	32.9	32.5	32.4	32.3
Residences480	712191	4543942	225	32.5	32.5	32.1	32.0	32.0
Residences562	713886	4544040	225	28.6	28.6	28.2	28.2	28.1
Residences563	714021	4543975	225	28.3	28.3	28.0	27.9	27.8
Residences564	714091	4543989	225	28.2	28.2	27.8	27.7	27.7
Residences565	713727	4544165	225	29.0	29.0	28.6	28.5	28.5
Residences566	713744	4545769	222	29.1	29.2	28.5	28.6	28.4
Residences567	713835	4546174	224	29.1	29.1	28.5	28.4	28.3
Residences568	713663	4546047	224	29.6	29.6	29.0	28.9	28.8
Residences569	713750	4546748	224	29.3	29.3	28.7	28.6	28.5
Residences570	713722	4548434	223	28.9	28.8	28.1	28.0	27.9
Residences591	713604	4545568	221	29.2	29.6	28.7	28.9	28.8
Residences592	713653	4545430	224	29.0	29.0	28.5	28.3	28.3
Residences593	713721	4545182	224	29.3	29.3	28.8	28.7	28.7
Residences594	713857	4545976	224	29.1	29.1	28.6	28.4	28.4
Residences595	713767	4545697	222	29.3	29.3	28.7	28.6	28.6
Residences611	710443	4546266	224	46.4	46.9	46.8	46.8	46.9
Residences612	700975	4545259	229	46.0	46.1	46.2	46.2	46.1
Residences649	700798	4546778	228	43.8	43.9	43.4	43.4	43.5
Residences650	700785	4546311	229	43.7	43.9	43.5	43.5	43.6
Residences651	700794	4546373	228	43.7	43.8	43.4	43.5	43.5
Residences652	700821	4546199	228	43.8	43.9	43.6	43.6	43.7
Residences653	702382	4547288	227	44.4	44.4	43.8	43.8	44.0
Residences654	702286	4547733	226	41.8	41.8	41.3	41.3	41.4
Residences655	702396	4547776	227	41.5	41.5	40.9	40.9	41.0
Residences656	702345	4548294	227	39.0	39.0	38.4	38.3	38.3
Residences657	705564	4548653	225	40.6	40.6	39.7	39.6	39.8
Residences658	705554	4549608	225	36.3	36.2	35.4	35.3	35.3
Residences659	706119	4549971	224	35.4	35.3	34.5	34.4	34.4
Residences660	705540	4550248	225	34.4	34.3	33.5	33.4	33.4
Residences661	707094	4549556	224	38.0	38.0	36.9	36.9	36.9
Residences662	707074	4549843	224	37.2	37.2	36.1	36.1	36.1
Residences663	707178	4549520	222	37.0	37.1	35.8	35.9	35.8
Residences664	707215	4549946	224	37.3	37.3	36.2	36.1	36.2
Residences665	707154	4550225	224	36.4	36.3	35.3	35.2	35.3
Residences666	707143	4550505	224	35.4	35.3	34.2	34.3	34.2

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO			
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)
Residences667	711906	4550882	224	31.5	31.4	30.4	30.3
Residences669	713612	4548029	223	29.3	29.3	28.5	28.4
Residences670	712079	4546045	224	34.4	34.6	33.9	33.8
Residences671	713537	4545651	223	29.8	29.9	29.3	29.1
Residences672	712171	4545200	225	33.3	33.6	32.9	33.0
Residences673	712527	4545611	224	32.7	32.8	32.2	32.1
Residences674	712189	4544725	225	33.2	33.3	32.7	32.6
Residences675	713960	4543989	225	28.4	28.5	28.1	28.0
Residences676	713841	4543975	225	28.4	28.4	28.1	28.0
Residences677	713811	4544036	225	28.8	28.8	28.4	28.3
Residences680	710876	4543954	225	35.8	35.9	35.4	35.3
Residences681	703643	4543934	228	42.9	43.0	42.9	42.9
Residences682	703397	4543968	228	43.1	43.2	43.1	43.1
Residences684	703451	4544009	228	43.0	43.1	43.0	43.0
Residences685	703101	4543666	228	43.9	44.0	43.9	43.9
Residences686	703658	4543883	228	43.0	43.1	43.0	42.9
Residences688	703466	4543652	228	43.7	43.7	43.6	43.6
Residences689	707252	4547893	226	43.9	43.9	42.9	43.1
Residences714	705596	4543727	227	45.8	45.8	45.7	45.7
Residences715	705797	4543720	226	45.3	45.3	45.2	45.2
Residences716	705616	4545291	227	45.2	45.2	45.1	45.0
Residences717	713256	4545570	224	30.5	30.6	30.0	29.9
Residences718	708753	4550678	224	40.3	40.2	39.1	39.1
Residences719	710373	4550673	224	37.7	37.7	36.4	36.4
Residences720	695681	4550160	230	31.3	31.3	30.8	30.7
Residences721	695713	4549982	230	32.0	32.0	31.4	31.3
Residences722	695484	4550009	230	31.4	31.3	30.8	30.7
Residences723	699960	4548464	228	40.5	40.5	39.7	39.6
Residences724	703693	4548546	226	38.7	38.7	37.8	37.8
Residences725	704970	4548621	225	42.8	42.7	41.9	41.8
Residences726	706731	4548683	225	39.6	39.5	38.5	38.6
Residences727	707130	4548947	224	39.8	39.8	38.7	38.7
Residences728	707587	4546997	225	44.0	44.1	43.4	43.4
Residences729	693107	4547281	232	29.3	29.2	29.0	29.0
Residences730	695902	4546805	231	39.4	39.4	39.1	38.9
Residences732	712651	4547259	223	32.2	32.2	31.5	31.3
Residences733	711976	4546977	223	33.4	33.9	32.8	33.0
Residences735	697620	4545938	230	46.8	46.8	46.9	46.8
Residences736	701562	4545222	228	46.8	46.9	46.8	46.8
Residences737	695961	4545377	232	37.6	37.6	37.2	37.2
Residences738	697836	4545088	229	45.2	45.2	45.5	45.3
Residences739	695254	4550010	230	30.8	30.8	30.3	30.1

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO			
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)
Residences740	697299	4543542	231	42.3	42.3	42.2	42.2
Residences742	696811	4549917	230	34.0	34.0	33.4	33.4
Residences743	703145	4543665	228	43.9	43.9	43.8	43.8
Residences744	703128	4543662	228	43.9	44.0	43.9	43.9
Residences745	700594	4549332	228	35.9	35.8	35.2	35.1
Residences746	703357	4543638	228	43.8	43.8	43.7	43.7
Residences748	703384	4543587	228	43.9	44.0	43.9	43.9
Residences750	703317	4543588	228	44.0	44.0	43.9	43.9
Residences757	703461	4543587	228	43.9	43.9	43.8	43.8
Residences758	703404	4543608	228	43.8	43.9	43.8	43.8
Residences780	703897	4543738	228	43.3	43.3	43.2	43.2
Residences781	703764	4543735	228	43.3	43.3	43.2	43.2
Residences782	703662	4543725	228	43.4	43.4	43.3	43.3
Residences783	703588	4543724	228	43.4	43.4	43.4	43.3
Residences784	703597	4543773	228	43.3	43.3	43.2	43.2
Residences785	703609	4543815	228	43.2	43.2	43.1	43.1
Residences786	703610	4543831	228	43.1	43.2	43.1	43.1
Residences787	703602	4543857	228	43.1	43.2	43.0	43.0
Residences788	703604	4543876	228	43.1	43.1	43.0	43.0
Residences789	703506	4543827	228	43.2	43.3	43.2	43.2
Residences790	703501	4543874	228	43.1	43.2	43.1	43.1
Residences791	703473	4543834	228	43.2	43.3	43.2	43.2
Residences792	703446	4543871	228	43.2	43.3	43.2	43.1
Residences793	703550	4543717	228	43.4	43.5	43.4	43.4
Residences794	703572	4543782	228	43.3	43.3	43.2	43.2
Residences795	703554	4543736	228	43.4	43.4	43.3	43.3
Residences796	703510	4543736	228	43.4	43.5	43.4	43.3
Residences797	703513	4543713	228	43.5	43.5	43.4	43.4
Residences798	703490	4543713	228	43.5	43.5	43.4	43.4
Residences799	703492	4543736	228	43.4	43.5	43.4	43.4
Residences800	703487	4543780	228	43.3	43.4	43.3	43.3
Residences801	703475	4543775	228	43.3	43.4	43.3	43.3
Residences802	703460	4543722	228	43.5	43.5	43.4	43.4
Residences803	703454	4543756	228	43.4	43.5	43.4	43.3
Residences804	703452	4543774	228	43.4	43.4	43.3	43.3
Residences805	703364	4543772	228	43.4	43.5	43.4	43.4
Residences806	703293	4543955	228	43.2	43.3	43.2	43.2
Residences807	703402	4543908	228	43.2	43.3	43.2	43.2
Residences808	703388	4543874	228	43.2	43.3	43.2	43.2
Residences809	703400	4543854	228	43.2	43.3	43.2	43.2
Residences810	703303	4543800	228	43.4	43.5	43.4	43.4
Residences811	703492	4544014	228	43.0	43.1	43.0	42.9

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO				
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)	Vestas 126-3.45 (87 m)
Residences812	703544	4544006	228	42.9	43.0	42.9	42.9	42.9
Residences813	703495	4543957	228	43.0	43.1	43.0	43.0	43.0
Residences814	703452	4543963	228	43.1	43.2	43.0	43.0	43.0
Residences815	703356	4543901	228	43.2	43.3	43.2	43.2	43.2
Residences816	703503	4543905	228	43.1	43.2	43.1	43.0	43.0
Residences817	703539	4543928	228	43.0	43.1	43.0	43.0	43.0
Residences818	703604	4543957	228	42.9	43.0	42.9	42.9	42.9
Residences819	703592	4543917	228	43.0	43.1	43.0	43.0	42.9
Residences820	703961	4546478	227	46.1	46.1	45.4	45.4	45.4
Residences822	707293	4543750	226	44.8	44.8	44.5	44.5	44.6
Residences823	703100	4548390	227	38.6	38.6	37.9	37.8	37.8
Residences824	703454	4543917	228	43.1	43.2	43.1	43.1	43.1
Residences825	703453	4543809	228	43.3	43.4	43.3	43.3	43.2
Residences826	703804	4543736	228	43.3	43.3	43.2	43.2	43.2
Residences827	704132	4543745	228	43.3	43.4	43.3	43.2	43.2
Residences835	711477	4543910	225	34.2	34.2	33.8	33.7	33.6
Residences836	711510	4543962	224	32.9	33.2	32.5	32.7	32.6
Residences837	711763	4543911	225	33.6	33.6	33.2	33.1	33.0
Residences838	711785	4543917	225	33.5	33.5	33.1	33.0	33.0
Residences839	711818	4543927	225	33.4	33.5	33.0	33.0	32.9
Residences840	711762	4543962	225	33.6	33.6	33.2	33.1	33.1
Residences841	711805	4543978	225	33.5	33.5	33.1	33.0	33.0
Residences842	711848	4543978	225	33.4	33.4	33.0	32.9	32.9
Residences844	711787	4543862	225	33.4	33.5	33.0	33.0	32.9
Residences845	711830	4543870	225	33.4	33.4	33.0	32.9	32.8
Residences848	711941	4543868	225	33.1	33.1	32.7	32.6	32.6
Residences849	711882	4543884	225	33.2	33.3	32.8	32.8	32.7
Residences855	712019	4543992	225	33.0	33.0	32.6	32.5	32.5
Residences856	712139	4544041	225	32.7	32.7	32.3	32.2	32.2
Residences857	712083	4544024	225	32.9	32.9	32.5	32.4	32.3
Residences858	712109	4543976	225	32.8	32.8	32.4	32.3	32.2
Residences859	712110	4543991	225	32.8	32.8	32.4	32.3	32.2
Residences860	712301	4543981	225	32.3	32.3	31.9	31.8	31.8
Residences861	712096	4543912	226	32.7	32.8	32.3	32.3	32.2
Residences867	712307	4543874	225	32.2	32.2	31.8	31.7	31.7
Residences868	712324	4543906	225	32.2	32.2	31.8	31.7	31.7
Residences869	712370	4543881	225	32.0	32.1	31.7	31.6	31.5
Residences870	712404	4544210	225	32.2	32.2	31.8	31.7	31.6
Residences871	712395	4544152	225	32.2	32.2	31.8	31.7	31.6
Residences872	712247	4544153	225	32.5	32.6	32.1	32.0	32.0
Residences873	712185	4544152	224	32.1	32.3	31.6	31.7	31.6
Residences874	712189	4544107	225	32.2	32.3	31.8	31.7	31.6

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO				
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)	Vestas 126-3.45 (87 m)
Residences875	712193	4544086	225	32.5	32.6	32.1	32.1	32.0
Residences876	712257	4544082	225	32.5	32.5	32.1	32.0	31.9
Residences877	712259	4544111	225	32.5	32.5	32.1	32.0	31.9
Residences878	712298	4544090	225	32.4	32.4	32.0	31.9	31.8
Residences879	712295	4544116	225	32.4	32.4	32.0	31.9	31.9
Residences880	712355	4544090	225	32.2	32.3	31.8	31.8	31.7
Residences881	712356	4544135	225	32.3	32.3	31.9	31.8	31.7
Residences882	699107	4548146	229	41.4	41.4	40.6	40.6	40.7
Residences883	702391	4543689	228	44.4	44.5	44.4	44.4	44.4
Residences884	704028	4544125	228	42.5	42.5	42.4	42.4	42.3
Residences885	702388	4547366	227	43.9	43.9	43.3	43.3	43.5
Residences886	712039	4544120	225	33.0	33.1	32.6	32.6	32.5
Residences887	712001	4544075	225	33.1	33.1	32.7	32.6	32.6
Residences888	711978	4544078	225	33.2	33.2	32.8	32.7	32.6
Residences889	712042	4544077	225	33.0	33.0	32.6	32.5	32.5
Residences890	712092	4544134	225	32.9	32.9	32.5	32.4	32.3
Residences891	712047	4544039	225	33.0	33.0	32.6	32.5	32.4
Residences892	712042	4544016	225	33.0	33.0	32.6	32.5	32.4
Residences893	712107	4544080	225	32.7	32.7	32.2	32.2	32.1
Residences894	712148	4544131	225	32.8	32.8	32.3	32.3	32.2
Residences895	712176	4544434	224	32.8	32.9	32.4	32.3	32.3
Residences896	712238	4545538	225	33.6	33.8	33.1	33.1	33.1
Residences897	711676	4543905	225	33.8	33.8	33.4	33.3	33.2
Residences898	695600	4550010	230	31.7	31.6	31.1	31.0	31.0
Non-participating Receivers, South of OH 114								
Residences001	704958	4540548	229	48.9	48.9	48.9	48.9	48.9
Residences002	704458	4540531	229	48.7	48.7	48.7	48.7	48.7
Residences003	702836	4540515	229	47.0	47.0	47.0	47.0	47.0
Residences004	703027	4540540	230	46.2	46.2	46.2	46.2	46.2
Residences005	703204	4540783	230	46.4	46.4	46.4	46.4	46.4
Residences006	703332	4540701	230	45.9	45.9	45.9	45.9	45.9
Residences007	703353	4540554	229	45.6	45.6	45.6	45.6	45.6
Residences008	703403	4540526	230	45.6	45.6	45.6	45.6	45.6
Residences009	703557	4540515	229	45.6	45.6	45.6	45.6	45.6
Residences010	703757	4540515	229	45.8	45.8	45.8	45.8	45.8
Residences011	704200	4541449	228	49.3	49.3	49.3	49.3	49.3
Residences012	704091	4541797	228	47.6	47.6	47.6	47.6	47.6
Residences013	704093	4541884	228	47.7	47.7	47.7	47.7	47.7
Residences014	704093	4541713	228	47.6	47.6	47.6	47.6	47.6
Residences015	702637	4540484	230	48.6	48.6	48.6	48.6	48.6
Residences016	702480	4541390	229	47.8	47.8	47.8	47.8	47.8
Residences017	702651	4541253	229	48.3	48.3	48.3	48.3	48.3

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO			
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Residences018	704175	4542657	228	49.3	49.3	49.3	49.3
Residences019	702525	4542883	229	48.6	48.6	48.6	48.6
Residences020	704057	4542830	228	48.0	48.0	48.0	48.0
Residences021	704138	4543085	228	46.7	46.7	46.6	46.6
Residences022	704032	4543094	227	46.3	46.3	46.3	46.2
Residences023	704050	4543418	228	44.6	44.6	44.5	44.5
Residences025	703419	4543315	228	45.1	45.1	45.0	45.0
Residences026	703417	4543493	228	44.3	44.3	44.2	44.2
Residences028	703215	4543502	229	44.4	44.4	44.4	44.3
Residences096	700235	4543616	230	48.9	48.9	48.8	48.8
Residences098	700116	4541901	231	46.4	46.4	46.4	46.4
Residences099	700281	4541924	231	47.0	47.0	47.0	47.0
Residences100	700791	4542029	230	49.1	49.1	49.1	49.1
Residences101	700952	4542017	230	48.2	48.2	48.2	48.2
Residences102	701345	4541955	230	47.3	47.4	47.3	47.3
Residences103	701681	4542035	229	48.1	48.1	48.1	48.1
Residences104	701954	4541976	230	48.6	48.6	48.6	48.6
Residences105	700883	4540955	231	46.5	46.5	46.5	46.5
Residences106	700861	4540425	231	47.5	47.5	47.5	47.5
Residences107	701310	4540338	231	47.8	47.8	47.8	47.8
Residences108	701652	4540355	230	48.8	48.8	48.8	48.8
Residences109	701863	4540420	230	49.8	49.8	49.8	49.8
Residences110	699656	4540352	232	46.4	46.4	46.4	46.4
Residences111	699330	4541337	232	48.0	48.0	48.0	48.0
Residences112	697786	4540293	233	43.8	43.8	43.8	43.8
Residences113	697639	4541255	232	50.2	50.2	50.2	50.2
Residences114	697714	4541677	232	48.6	48.6	48.5	48.5
Residences115	697018	4541819	232	49.1	49.1	49.1	49.1
Residences116	698741	4541861	231	50.0	50.0	50.0	50.0
Residences117	699215	4541957	231	49.5	49.5	49.5	49.5
Residences118	697626	4542295	231	48.3	48.3	48.3	48.3
Residences119	699188	4543004	230	46.0	46.0	45.9	45.9
Residences120	697677	4542917	230	45.0	45.0	45.0	45.0
Residences121	697653	4543291	231	43.3	43.3	43.2	43.2
Residences178	695941	4543047	232	43.0	43.0	43.0	43.0
Residences180	695787	4541855	233	44.9	44.9	44.9	44.9
Residences181	694892	4541473	233	40.5	40.5	40.5	40.5
Residences182	694763	4541459	233	40.3	40.3	40.3	40.2
Residences183	695832	4540165	233	46.0	46.0	46.0	46.0
Residences184	696020	4540788	233	43.0	43.0	43.0	43.0
Residences185	694881	4540656	233	44.3	44.3	44.3	44.3
Residences186	694036	4540193	234	45.2	45.2	45.2	45.2

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO				
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Residences187	696124	4539979	233	45.7	45.7	45.7	45.7	45.7
Residences188	696166	4539858	234	46.2	46.2	46.2	46.2	46.2
Residences189	693673	4541812	234	36.7	36.7	36.7	36.7	36.7
Residences220	707358	4543598	227	44.8	44.8	44.6	44.6	44.6
Residences221	707314	4543114	227	47.4	47.4	47.4	47.4	47.4
Residences222	705593	4542089	227	49.9	49.8	49.8	49.8	49.8
Residences223	707338	4541736	228	46.0	46.0	46.0	46.0	46.0
Residences224	707355	4541399	228	44.7	44.7	44.6	44.6	44.6
Residences225	707366	4541239	228	44.2	44.2	44.2	44.2	44.2
Residences226	707451	4541154	228	44.0	44.0	44.0	44.0	44.0
Residences227	705102	4540465	229	48.4	48.4	48.4	48.4	48.4
Residences228	705356	4540561	229	46.7	46.7	46.7	46.7	46.7
Residences229	705582	4540536	228	45.7	45.7	45.7	45.7	45.7
Residences230	705852	4540552	228	44.9	44.9	44.9	44.9	44.9
Residences231	707620	4540606	228	45.0	45.0	45.0	45.0	45.0
Residences232	706760	4540575	228	43.9	43.9	43.9	43.9	43.9
Residences233	705860	4540289	228	44.5	44.5	44.5	44.5	44.5
Residences234	705846	4540218	228	44.5	44.5	44.5	44.5	44.5
Residences235	705860	4539854	229	44.3	44.3	44.3	44.3	44.3
Residences236	705942	4539919	229	44.2	44.2	44.2	44.2	44.2
Residences237	707405	4540009	228	45.8	45.8	45.8	45.8	45.8
Residences238	707420	4539905	229	46.2	46.2	46.2	46.2	46.2
Residences239	707507	4539764	229	46.8	46.8	46.8	46.8	46.8
Residences240	705725	4538944	230	44.2	44.2	44.2	44.2	44.2
Residences241	705384	4538952	230	43.9	43.9	43.9	43.9	43.9
Residences242	707496	4538969	230	47.3	47.3	47.3	47.2	47.2
Residences243	705985	4538123	231	46.0	46.0	46.0	46.0	46.0
Residences244	705911	4537733	231	44.9	44.9	44.9	44.9	44.9
Residences245	707600	4538168	229	47.5	47.5	47.5	47.5	47.5
Residences246	707515	4537757	230	45.9	45.9	45.9	45.9	45.9
Residences247	705170	4538307	230	43.9	43.9	43.9	43.9	43.9
Residences248	706937	4537283	231	49.5	49.5	49.5	49.5	49.5
Residences249	706405	4537340	231	48.8	48.8	48.8	48.8	48.8
Residences250	705195	4537747	231	44.7	44.7	44.7	44.7	44.7
Residences251	706030	4537104	230	46.2	46.2	46.2	46.2	46.2
Residences252	706106	4536490	231	47.5	47.5	47.5	47.5	47.5
Residences253	705725	4536487	231	45.2	45.2	45.2	45.2	45.2
Residences254	707312	4535744	231	46.7	46.7	46.7	46.7	46.7
Residences255	707529	4535761	231	48.0	48.0	48.0	48.0	48.0
Residences256	707642	4535826	231	49.6	49.6	49.6	49.6	49.6
Residences257	707558	4535563	231	47.3	47.3	47.3	47.3	47.3
Residences258	707597	4535171	232	47.5	47.5	47.5	47.5	47.5

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO				
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)	Vestas 126-3.45 (87 m)
Residences259	707518	4534486	233	48.7	48.7	48.7	48.7	48.7
Residences260	707690	4534503	233	49.5	49.5	49.5	49.5	49.5
Residences261	706582	4534111	233	46.7	46.7	46.7	46.7	46.7
Residences262	706376	4534111	233	45.9	45.9	45.9	45.9	45.9
Residences263	709468	4534123	231	44.0	44.0	44.0	44.0	44.0
Residences264	709266	4534152	232	45.5	45.5	45.5	45.5	45.5
Residences265	709440	4534365	231	45.2	45.2	45.2	45.2	45.2
Residences266	709242	4534532	231	48.6	48.6	48.6	48.6	48.6
Residences267	709313	4534791	231	48.1	48.1	48.1	48.1	48.1
Residences268	709296	4534983	231	47.5	47.5	47.5	47.5	47.5
Residences269	709738	4534532	231	43.0	43.0	43.0	43.0	43.0
Residences270	710119	4534123	232	40.2	40.2	40.2	40.2	40.2
Residences271	710438	4534255	231	38.5	38.5	38.5	38.5	38.5
Residences272	710026	4534954	231	40.9	40.9	40.9	40.9	40.9
Residences273	710015	4535000	231	41.0	41.0	41.0	41.0	41.0
Residences274	710091	4535011	230	40.4	40.4	40.4	40.4	40.4
Residences275	710426	4535042	231	38.7	38.7	38.7	38.7	38.7
Residences276	710012	4535132	230	40.6	40.6	40.6	40.6	40.6
Residences277	710190	4535425	231	39.5	39.5	39.5	39.5	39.5
Residences278	710204	4535358	231	39.5	39.5	39.5	39.5	39.5
Residences279	710105	4535180	230	40.2	40.2	40.2	40.2	40.2
Residences280	710018	4535518	229	40.0	40.0	40.0	40.0	40.0
Residences281	709200	4535555	231	45.0	45.0	45.0	45.0	45.0
Residences282	708081	4535776	231	49.5	49.5	49.5	49.5	49.5
Residences283	709115	4535793	231	44.3	44.3	44.3	44.3	44.3
Residences284	709248	4535821	231	43.5	43.5	43.5	43.5	43.5
Residences285	709254	4535700	231	44.0	44.0	44.0	44.0	44.0
Residences286	709409	4535782	231	42.8	42.8	42.8	42.8	42.8
Residences287	709496	4535802	231	42.3	42.3	42.3	42.3	42.3
Residences288	710108	4535838	230	39.2	39.2	39.2	39.2	39.2
Residences289	710065	4535745	230	39.6	39.6	39.6	39.6	39.6
Residences290	710130	4535742	230	39.3	39.3	39.3	39.3	39.3
Residences291	710130	4535689	229	39.2	39.3	39.2	39.2	39.2
Residences292	710770	4535864	230	36.6	36.6	36.6	36.6	36.6
Residences293	710703	4535883	230	36.8	36.8	36.8	36.8	36.8
Residences294	710542	4535765	230	37.4	37.4	37.4	37.4	37.4
Residences295	710407	4535830	230	37.9	37.9	37.9	37.9	37.9
Residences296	710353	4535821	230	38.2	38.2	38.2	38.2	38.2
Residences297	710378	4535697	230	38.2	38.2	38.2	38.2	38.2
Residences298	708636	4535804	231	47.0	47.0	47.0	47.0	47.0
Residences299	709245	4536429	230	42.0	42.0	42.0	42.0	42.0
Residences300	709239	4536508	231	41.9	41.9	41.9	41.9	41.9

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO			
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)
Residences301	710793	4536437	229	36.1	36.1	36.1	36.1
Residences302	710753	4537207	230	35.5	35.5	35.5	35.5
Residences303	710714	4537452	229	35.7	35.7	35.7	35.7
Residences304	708602	4537447	230	43.6	43.6	43.6	43.6
Residences305	709121	4537393	230	41.2	41.2	41.2	41.2
Residences306	709251	4537404	230	40.6	40.6	40.6	40.6
Residences307	709566	4537348	230	39.4	39.4	39.4	39.4
Residences308	709254	4537834	229	40.2	40.2	40.2	40.2
Residences309	709307	4537803	229	40.2	40.2	40.2	40.2
Residences310	710782	4538029	228	35.4	35.4	35.4	35.4
Residences311	709998	4538250	228	37.9	37.9	37.9	37.9
Residences312	710784	4538261	228	35.4	35.4	35.4	35.4
Residences313	710779	4538453	228	35.4	35.4	35.4	35.4
Residences314	710776	4538842	228	35.4	35.4	35.4	35.4
Residences315	710767	4539071	227	35.5	35.5	35.4	35.4
Residences316	710567	4539003	228	36.1	36.1	36.1	36.1
Residences317	710627	4539000	228	35.9	35.9	35.9	35.9
Residences318	710435	4539042	227	36.6	36.6	36.6	36.6
Residences319	709972	4538901	227	38.2	38.2	38.2	38.2
Residences320	709110	4538952	228	45.1	45.1	45.1	45.1
Residences321	709177	4538823	228	43.6	43.6	43.6	43.6
Residences322	709203	4538893	228	43.7	43.7	43.7	43.7
Residences323	709191	4539161	228	44.5	44.5	44.5	44.5
Residences324	707728	4538980	229	47.9	47.9	47.9	47.9
Residences325	709076	4539474	228	44.9	44.9	44.9	44.9
Residences326	709053	4540046	228	42.4	42.4	42.4	42.4
Residences327	709121	4540117	228	41.9	41.9	41.9	41.9
Residences328	710649	4539753	227	35.6	35.7	35.6	35.6
Residences329	710756	4539581	227	35.5	35.5	35.4	35.4
Residences330	708267	4540628	228	46.0	46.0	46.0	46.0
Residences331	709357	4541404	227	40.4	40.4	40.3	40.3
Residences332	708503	4540641	228	44.4	44.4	44.4	44.4
Residences333	710172	4540632	227	37.0	37.0	37.0	37.0
Residences334	710700	4540707	227	35.4	35.4	35.3	35.3
Residences335	710683	4541073	226	35.2	35.2	35.1	35.1
Residences336	710579	4541289	226	35.4	35.5	35.3	35.3
Residences337	710599	4541455	226	35.6	35.6	35.5	35.5
Residences338	710596	4541597	227	35.5	35.6	35.4	35.4
Residences339	709957	4542288	226	37.8	37.7	37.6	37.6
Residences341	710394	4542249	227	36.3	36.2	36.1	36.0
Residences342	710394	4542249	227	36.3	36.2	36.1	36.0
Residences343	709351	4542290	227	40.4	40.4	40.3	40.3

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO				
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Residences344	708964	4542167	227	43.4	43.4	43.4	43.4	43.4
Residences345	708734	4542202	227	45.4	45.4	45.4	45.4	45.4
Residences346	708556	4542262	227	46.4	46.4	46.4	46.4	46.4
Residences347	708019	4542273	228	50.1	50.1	50.1	50.1	50.1
Residences349	710605	4543299	226	35.9	35.9	35.5	35.5	35.4
Residences350	710550	4543202	225	36.0	36.0	35.7	35.6	35.6
Residences352	710617	4542990	225	35.7	35.7	35.4	35.3	35.3
Residences358	708980	4543690	226	41.2	41.2	40.7	40.7	40.7
Residences362	710531	4543732	226	36.4	36.4	36.0	35.9	35.9
Residences439	712310	4543831	225	32.2	32.2	31.8	31.7	31.7
Residences440	712391	4543787	225	32.0	32.0	31.6	31.5	31.5
Residences441	712465	4543751	225	31.8	31.8	31.4	31.3	31.3
Residences442	712397	4543706	225	31.9	31.9	31.5	31.4	31.4
Residences443	712386	4543632	225	31.9	31.9	31.5	31.4	31.4
Residences444	712253	4543629	225	32.2	32.2	31.8	31.8	31.7
Residences445	712250	4543567	225	32.2	32.2	31.8	31.7	31.7
Residences446	712262	4543531	225	32.1	32.1	31.8	31.7	31.7
Residences447	712284	4543488	225	32.1	32.1	31.7	31.6	31.6
Residences448	712231	4543446	225	32.2	32.2	31.8	31.7	31.7
Residences449	712279	4543443	225	32.1	32.1	31.7	31.6	31.6
Residences450	712183	4543438	226	32.3	32.3	31.9	31.8	31.8
Residences451	712188	4543390	226	32.1	32.2	31.8	31.7	31.7
Residences452	712180	4543339	226	32.2	32.2	31.9	31.8	31.8
Residences453	712140	4543398	225	32.3	32.3	32.0	31.9	31.9
Residences454	712135	4543483	225	32.4	32.4	32.0	32.0	31.9
Residences455	712047	4543517	225	32.6	32.6	32.2	32.2	32.1
Residences456	711988	4543545	226	32.8	32.8	32.4	32.3	32.3
Residences457	711943	4543545	225	32.9	32.9	32.5	32.4	32.4
Residences458	711847	4543590	225	33.1	33.1	32.8	32.7	32.6
Residences459	711791	4543666	225	33.3	33.3	32.9	32.8	32.8
Residences460	711784	4543753	225	33.4	33.4	33.0	32.9	32.9
Residences461	712016	4543635	225	32.8	32.8	32.4	32.3	32.3
Residences462	712098	4543638	225	32.6	32.6	32.2	32.1	32.1
Residences463	712200	4543669	225	32.3	32.3	32.0	31.9	31.8
Residences464	712259	4543720	225	32.2	32.2	31.9	31.8	31.7
Residences465	712290	4543782	225	32.2	32.2	31.8	31.7	31.7
Residences472	711997	4543810	225	32.9	32.9	32.5	32.4	32.4
Residences473	712008	4543720	225	32.8	32.8	32.5	32.4	32.3
Residences474	712107	4543703	226	32.6	32.6	32.2	32.1	32.1
Residences475	712180	4543765	225	32.4	32.4	32.1	32.0	31.9
Residences476	712217	4543832	225	32.4	32.4	32.0	31.9	31.9
Residences481	712256	4543176	225	32.0	32.0	31.6	31.6	31.5

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO				
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Residences482	712166	4543223	226	32.2	32.2	31.9	31.8	31.7
Residences483	710945	4542322	226	34.8	34.7	34.5	34.5	34.5
Residences484	711234	4542334	226	34.0	34.0	33.8	33.7	33.7
Residences485	712560	4542301	226	31.0	31.0	30.8	30.7	30.7
Residences486	712721	4542379	226	30.7	30.7	30.5	30.4	30.4
Residences487	712828	4542399	225	30.5	30.5	30.3	30.2	30.2
Residences488	713373	4542331	225	29.2	29.3	29.0	29.0	29.0
Residences489	713576	4542351	225	27.8	28.0	27.6	27.7	27.5
Residences490	712317	4541338	226	31.4	31.4	31.3	31.2	31.2
Residences491	712290	4541028	226	31.5	31.4	31.3	31.3	31.3
Residences492	712834	4540720	226	30.3	30.3	30.1	30.1	30.1
Residences493	712284	4540538	226	31.5	31.5	31.4	31.4	31.4
Residences494	713547	4541239	225	28.8	28.8	28.7	28.6	28.6
Residences495	712242	4540190	227	31.6	31.6	31.5	31.5	31.5
Residences496	712259	4539681	227	30.8	30.8	30.7	30.8	30.7
Residences497	712459	4539340	227	31.1	31.1	31.0	31.0	31.0
Residences498	712437	4539371	227	31.1	31.1	31.0	31.1	31.1
Residences499	711904	4539159	228	32.4	32.4	32.4	32.4	32.4
Residences500	711563	4539024	228	33.3	33.3	33.2	33.2	33.2
Residences501	711444	4539030	228	33.6	33.6	33.5	33.5	33.5
Residences502	711340	4539111	228	33.8	33.8	33.8	33.8	33.8
Residences503	712298	4538903	227	31.5	31.5	31.5	31.4	31.4
Residences504	713330	4539210	227	28.9	29.0	28.9	29.0	28.9
Residences505	713545	4539066	227	28.6	28.6	28.6	28.6	28.6
Residences506	712301	4538269	228	31.5	31.6	31.5	31.5	31.5
Residences507	712338	4537910	228	31.4	31.4	31.4	31.4	31.4
Residences508	712383	4538119	228	31.4	31.4	31.3	31.3	31.3
Residences509	711650	4537426	227	33.3	33.3	33.3	33.2	33.3
Residences510	711354	4536997	229	34.0	34.0	34.0	34.0	34.0
Residences511	711695	4537217	229	33.1	33.1	33.1	33.1	33.1
Residences512	711735	4537310	228	33.1	33.1	33.1	33.1	33.1
Residences513	711782	4537361	229	32.9	32.9	32.9	32.9	32.9
Residences514	712327	4537459	229	31.6	31.6	31.6	31.6	31.6
Residences515	712417	4537279	229	31.0	31.0	31.0	31.0	31.0
Residences516	712854	4537550	228	30.4	30.4	30.3	30.3	30.4
Residences517	713353	4537578	228	29.1	29.1	29.1	29.1	29.1
Residences518	713268	4537482	229	29.3	29.3	29.3	29.3	29.3
Residences519	712437	4536836	229	31.1	31.1	31.0	31.1	31.1
Residences520	711185	4536817	229	34.7	34.7	34.7	34.7	34.7
Residences521	711058	4536724	229	35.0	35.0	35.0	35.0	35.0
Residences522	710987	4536670	229	35.3	35.3	35.3	35.3	35.3
Residences523	711647	4537158	229	33.0	33.0	33.0	33.0	33.0

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO			
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Residences524	712166	4535806	230	32.3	32.3	32.3	32.3
Residences525	711969	4535893	230	32.8	32.8	32.8	32.8
Residences526	711393	4535879	230	34.5	34.5	34.5	34.5
Residences527	711467	4535817	230	34.3	34.3	34.3	34.3
Residences528	711213	4535868	230	35.0	35.0	35.0	35.0
Residences529	710877	4535789	230	36.2	36.2	36.2	36.2
Residences530	710906	4535862	230	36.1	36.1	36.1	36.1
Residences531	713232	4535405	230	29.4	29.4	29.4	29.4
Residences532	710900	4534846	231	36.6	36.6	36.6	36.6
Residences533	711334	4534998	230	34.9	34.9	34.9	34.9
Residences534	713040	4535066	230	29.8	29.8	29.8	29.8
Residences535	710933	4534207	231	36.4	36.4	36.4	36.4
Residences536	711532	4534195	231	34.1	34.1	34.1	34.1
Residences537	712236	4534321	231	31.9	31.9	31.9	31.9
Residences538	712693	4534336	231	30.6	30.6	30.6	30.6
Residences539	712981	4534429	231	29.8	29.8	29.8	29.8
Residences540	712930	4534341	231	30.0	30.0	30.0	30.0
Residences541	713130	4534347	231	29.3	29.3	29.3	29.3
Residences542	710925	4534446	231	36.3	36.3	36.3	36.3
Residences543	714086	4534271	231	27.1	27.1	27.1	27.1
Residences544	714055	4535196	230	27.3	27.3	27.3	27.3
Residences545	714311	4535097	230	26.7	26.7	26.7	26.7
Residences546	713745	4535892	230	28.1	28.1	28.1	28.1
Residences547	713996	4535914	229	27.6	27.6	27.6	27.6
Residences548	713993	4536129	230	27.6	27.6	27.6	27.6
Residences549	714077	4536416	229	27.3	27.3	27.3	27.3
Residences550	714072	4535906	230	27.4	27.4	27.4	27.4
Residences551	714170	4537579	228	27.4	27.4	27.4	27.4
Residences552	714001	4538463	227	27.5	27.7	27.5	27.6
Residences553	714013	4538728	227	27.7	27.7	27.7	27.7
Residences554	714402	4539182	227	26.8	26.8	26.8	26.7
Residences555	713849	4539190	226	28.0	28.0	28.0	27.9
Residences556	713936	4540700	226	26.6	26.8	26.5	26.6
Residences557	713911	4541367	225	28.0	28.0	27.8	27.8
Residences558	713905	4542022	225	28.1	28.2	28.0	27.9
Residences559	713767	4543246	225	28.7	28.7	28.4	28.3
Residences560	713841	4543525	225	28.6	28.6	28.3	28.2
Residences561	713874	4543051	225	28.4	28.5	28.2	28.1
Residences571	716778	4539289	226	20.5	20.5	20.5	20.5
Residences572	716471	4538848	227	21.6	21.7	21.6	21.6
Residences573	717045	4539139	227	19.0	19.1	19.1	19.1
Residences574	717182	4538553	227	19.0	19.0	19.0	19.0

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO			
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)
Residences575	717243	4536786	228	17.6	17.6	17.6	17.6
Residences576	716763	4535982	228	20.6	20.6	20.6	20.6
Residences577	716946	4536019	228	19.2	19.2	19.2	19.2
Residences578	717295	4535555	229	18.6	18.6	18.6	18.6
Residences579	717302	4535850	229	18.8	18.8	18.8	18.8
Residences580	717285	4536176	228	19.1	19.1	19.1	19.1
Residences581	717284	4536471	228	19.3	19.3	19.3	19.3
Residences582	715286	4536001	228	23.0	23.0	23.0	23.0
Residences583	715236	4536053	229	24.3	24.3	24.3	24.3
Residences584	714625	4535098	229	25.8	25.8	25.8	25.8
Residences585	714737	4536754	229	25.9	25.9	25.9	25.9
Residences586	714898	4535885	230	25.4	25.4	25.4	25.4
Residences587	715523	4539873	226	24.2	24.3	24.2	24.2
Residences588	715539	4539610	226	24.3	24.3	24.3	24.3
Residences589	715543	4539200	227	24.1	24.2	24.1	24.1
Residences590	715742	4534888	230	23.3	23.3	23.3	23.3
Residences596	699732	4541890	231	46.2	46.2	46.1	46.1
Residences597	700535	4542015	231	48.9	48.9	48.9	48.9
Residences598	697735	4539471	233	42.9	42.9	42.9	42.9
Residences599	698338	4540236	233	45.5	45.5	45.5	45.5
Residences600	697882	4538698	233	43.8	43.8	43.8	43.8
Residences601	698108	4538721	233	44.4	44.4	44.4	44.4
Residences602	698313	4538687	232	45.0	45.0	45.0	45.0
Residences603	698545	4538684	232	45.7	45.7	45.7	45.7
Residences604	698796	4538621	232	45.9	45.9	45.9	45.9
Residences605	697763	4538354	233	44.7	44.7	44.7	44.7
Residences606	708012	4537372	230	47.3	47.3	47.3	47.3
Residences607	703372	4542028	228	49.5	49.5	49.5	49.5
Residences608	703422	4541993	228	49.1	49.1	49.1	49.1
Residences609	703471	4542028	228	49.3	49.3	49.3	49.3
Residences610	703616	4542029	229	49.2	49.2	49.2	49.2
Residences613	715582	4538421	228	24.0	24.0	24.0	24.0
Residences614	715613	4538208	228	23.9	23.9	23.9	23.9
Residences615	715627	4537887	228	23.8	23.8	23.8	23.8
Residences616	715726	4537955	227	21.1	21.1	21.1	21.1
Residences617	715719	4538472	227	23.6	23.6	23.6	23.6
Residences618	715765	4539238	226	23.7	23.7	23.6	23.6
Residences619	715686	4539240	226	23.7	23.7	23.7	23.7
Residences620	715566	4538938	227	24.2	24.2	24.1	24.1
Residences621	716179	4539165	227	22.6	22.6	22.5	22.5
Residences622	716623	4539281	226	21.1	21.1	21.0	21.1
Residences623	716476	4538589	227	21.3	21.4	21.4	21.4

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO				
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)	Vestas 126-3.45 (87 m)
Residences624	716397	4538481	227	21.6	21.6	21.6	21.6	21.7
Residences625	716496	4538265	227	21.4	21.4	21.4	21.4	21.4
Residences626	716412	4538214	227	21.6	21.7	21.7	21.7	21.7
Residences627	714870	4536399	229	25.4	25.4	25.4	25.4	25.4
Residences628	714643	4535968	229	26.2	26.2	26.2	26.2	26.2
Residences629	714885	4535975	230	25.5	25.5	25.5	25.5	25.5
Residences630	715784	4536269	228	22.9	22.9	22.9	22.9	22.9
Residences631	715688	4536247	228	23.1	23.1	23.1	23.1	23.1
Residences632	715699	4536152	229	23.4	23.4	23.4	23.4	23.4
Residences633	715695	4536094	229	23.5	23.5	23.5	23.5	23.5
Residences634	715620	4536042	228	23.3	23.3	23.3	23.3	23.3
Residences635	715719	4535960	229	23.5	23.5	23.5	23.5	23.5
Residences636	715654	4535913	229	23.5	23.5	23.5	23.5	23.5
Residences637	715529	4535952	229	23.7	23.7	23.7	23.7	23.7
Residences638	715825	4535960	229	23.0	23.0	23.0	23.0	23.0
Residences639	715775	4535900	229	23.4	23.4	23.4	23.4	23.4
Residences640	715717	4536039	229	23.5	23.5	23.5	23.5	23.5
Residences641	716480	4535970	229	21.8	21.8	21.8	21.8	21.8
Residences642	716553	4536778	228	21.3	21.3	21.3	21.3	21.3
Residences643	715654	4536823	228	23.6	23.6	23.6	23.6	23.6
Residences644	715830	4534946	230	22.8	22.8	22.8	22.8	22.8
Residences645	715042	4537534	228	25.0	25.0	25.0	25.0	25.0
Residences646	713142	4535831	230	29.7	29.7	29.7	29.7	29.7
Residences647	713183	4535764	230	28.6	28.6	28.6	28.6	28.6
Residences648	713122	4535523	230	29.8	29.8	29.8	29.8	29.8
Residences678	713801	4542330	225	28.4	28.4	28.2	28.1	28.1
Residences679	713827	4541603	225	28.3	28.3	28.1	28.0	28.0
Residences683	703425	4543411	228	44.6	44.6	44.6	44.5	44.5
Residences687	703462	4543546	228	44.0	44.0	44.0	44.0	44.0
Residences690	703312	4540244	229	45.7	45.7	45.7	45.7	45.7
Residences691	703039	4540152	229	45.8	45.8	45.8	45.8	45.8
Residences692	702919	4540320	230	46.2	46.2	46.2	46.2	46.2
Residences693	703092	4540692	229	46.3	46.3	46.3	46.3	46.3
Residences694	703350	4540641	229	45.8	45.8	45.8	45.8	45.8
Residences695	703290	4540783	230	46.2	46.2	46.2	46.2	46.2
Residences696	703359	4539550	230	47.4	47.4	47.4	47.4	47.4
Residences697	703442	4539918	230	46.9	46.9	46.9	46.9	46.9
Residences698	703101	4540651	229	46.2	46.2	46.2	46.2	46.2
Residences699	703100	4540602	229	46.1	46.1	46.1	46.1	46.1
Residences700	702931	4540456	230	46.4	46.4	46.4	46.4	46.4
Residences701	702951	4540204	230	46.0	46.0	46.0	46.0	46.0
Residences702	702946	4540361	230	46.2	46.2	46.2	46.2	46.2

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO			
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)
Residences703	702811	4540392	230	46.8	46.8	46.8	46.8
Residences704	703072	4540064	230	45.8	45.8	45.8	45.8
Residences705	703211	4540067	230	45.8	45.8	45.8	45.8
Residences706	703276	4540055	230	45.9	45.9	45.9	45.9
Residences707	703335	4540797	229	46.2	46.2	46.2	46.2
Residences708	703715	4540401	229	45.9	45.9	45.9	45.9
Residences709	704226	4540494	229	47.4	47.4	47.4	47.4
Residences710	704151	4540435	229	47.1	47.1	47.1	47.1
Residences711	704061	4540429	229	46.7	46.7	46.7	46.7
Residences712	699302	4540271	232	46.2	46.1	46.1	46.1
Residences713	699837	4540282	231	47.4	47.4	47.4	47.4
Residences741	697668	4542788	230	45.7	45.7	45.7	45.7
Residences747	703422	4543543	228	44.1	44.1	44.0	44.0
Residences749	703379	4543544	228	44.1	44.1	44.0	44.0
Residences751	703303	4543544	228	44.1	44.2	44.1	44.1
Residences752	703321	4543496	228	44.3	44.4	44.3	44.3
Residences753	703328	4543445	228	44.5	44.6	44.5	44.5
Residences754	703362	4543499	228	44.3	44.3	44.2	44.2
Residences755	703363	4543450	228	44.5	44.5	44.4	44.4
Residences756	703462	4543490	228	44.2	44.3	44.2	44.2
Residences759	703403	4543348	228	44.9	44.9	44.9	44.9
Residences760	703364	4543356	228	44.9	44.9	44.9	44.9
Residences761	703432	4543338	228	44.9	44.9	44.9	44.9
Residences762	703337	4540753	230	46.0	46.0	46.0	46.0
Residences763	703291	4540727	229	46.0	46.0	46.0	46.0
Residences764	703226	4540679	229	46.0	46.0	46.0	46.0
Residences765	703224	4540706	229	46.1	46.1	46.1	46.1
Residences766	703189	4540673	229	46.1	46.1	46.1	46.1
Residences767	703186	4540702	229	46.1	46.1	46.1	46.1
Residences768	703188	4540738	229	46.2	46.2	46.2	46.2
Residences769	703175	4540744	229	46.3	46.3	46.3	46.3
Residences770	703135	4540694	229	46.2	46.2	46.2	46.2
Residences771	703336	4540665	230	45.8	45.8	45.8	45.8
Residences772	703294	4540631	229	45.8	45.8	45.8	45.8
Residences773	703295	4540585	229	45.7	45.7	45.7	45.7
Residences774	703298	4540560	229	45.7	45.7	45.7	45.7
Residences775	703245	4540555	229	45.8	45.8	45.8	45.8
Residences776	703197	4540573	229	45.9	45.9	45.9	45.9
Residences777	703233	4540600	229	45.8	45.8	45.8	45.8
Residences778	703238	4540626	229	45.9	45.9	45.9	45.9
Residences779	703244	4540651	229	45.9	45.9	45.9	45.9
Residences828	706720	4542723	228	47.1	47.1	47.1	47.1

Residence ID	NAD 83 Zone 16N Coordinates		Elevation + Receiver Height (m)	Estimated Sound Pressure Level (dBA) Including NRO			
	X (m)	Y (m)		GE 2.3- 116 (80 m)	GE 2.3- 116 (94 m)	Vestas V110-2.0 (80 m)	Vestas V110-2.0 (95 m)
Residences829	707316	4543178	227	46.9	46.9	46.8	46.8
Residences830	708915	4543231	227	41.4	41.4	41.1	41.1
Residences831	709036	4542681	227	41.6	41.6	41.4	41.4
Residences832	710047	4542309	226	37.4	37.4	37.2	37.2
Residences833	711919	4541156	227	32.3	32.3	32.2	32.1
Residences843	711792	4543830	225	33.4	33.4	33.0	33.0
Residences846	711842	4543796	225	33.3	33.3	32.9	32.8
Residences847	711885	4543819	225	33.2	33.2	32.8	32.7
Residences850	711893	4543669	225	33.1	33.1	32.7	32.6
Residences851	711823	4543654	225	33.2	33.2	32.8	32.7
Residences852	711851	4543753	225	33.2	33.2	32.8	32.7
Residences853	711947	4543689	225	32.9	33.0	32.6	32.5
Residences854	711999	4543651	225	32.8	32.8	32.4	32.3
Residences862	712091	4543825	225	32.7	32.7	32.3	32.2
Residences863	712051	4543804	225	32.8	32.8	32.4	32.3
Residences864	712024	4543784	225	32.8	32.8	32.5	32.3
Residences865	712092	4543783	225	32.7	32.7	32.3	32.2
Residences866	712214	4543813	225	32.4	32.4	32.0	31.9

**This foregoing document was electronically filed with the Public Utilities**

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**Case No(s). 16-0343-EL-BGA**

Summary: Response of Trishe Wind Ohio, LLC to OPSB Staff Data Request electronically filed by Teresa Orahood on behalf of Sally Bloomfield