

APPENDIX G – Pre-Construction Sound Analysis



SOUND LEVEL ASSESSMENT REPORT

Dodge County Wind Project Dodge and Steele Counties, Minnesota

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1.0 EXECUTIVE SUMMARY

The Dodge County Wind Project (Project) is a proposed wind power generation facility proposed to consist of 79 wind turbines in Dodge and Steele Counties, Minnesota. The proposed Project nameplate capacity is 258.92 megawatts (MW) and is being developed by Dodge County Wind, LLC (DCW) an indirect, wholly owned subsidiary of NextEra Energy Resources, LLC (NEER). DCW has retained Epsilon Associates, Inc. (Epsilon) to conduct a pre-construction sound level assessment for the proposed wind turbines for this Project.

The sound level assessment included a sound monitoring program to determine existing sound levels in the vicinity of the Project and computer modeling to predict worst-case future L_{50} sound levels from the Project which, when combined with non-wind-turbine ambient sound levels, were evaluated with respect to the total sound level limit. The Project consists of a total of 79 wind turbines including eleven (11) GE 2.52-116 wind turbines and 68 GE 3.40-140 wind turbines. The array was designed to ensure that Project Only sound at Noise Area Classification 1 (NAC 1) receptors were 47 dBA or less. All wind turbines will have Low Noise Trailing Edge (LNTE) blades.

This Project is required to comply with Minnesota Pollution Control Agency (MPCA) State Noise Ordinance Standards, which are set forth in Section 4 of this report. For this analysis, all receptors with land use considered as NAC 1 were included in the modeling and evaluated as per Minn. Rule 7030.0040. The most restrictive of the noise limits is the nighttime L_{50} sound level for NAC 1 of 50 dBA.

An ambient sound level measurement program for the Project was conducted by Epsilon in March of 2018. This report utilizes the findings of the sound level measurement program.

Under conditions resulting in non-wind-turbine ambient sound levels of 47 dBA or less, total sound levels (Project + non-wind-turbine ambient) will meet the MPCA limit of 50 dBA. Nighttime measurements showed non-wind-turbine ambient L_{50} broadband sound levels range from 21 to 56 dBA when ground-level wind speeds were at or below 11 mph and winds at hub height corresponded to conditions in the modeling. These measured sound levels exceeded 50 dBA at five (5) of the six (6) locations during the measurement program. Non-wind-turbine ambient sound levels can fluctuate due to sound sources such as ground-level winds, vehicular traffic, birds, and vegetation rustle, all of which have the potential to cause non-wind-turbine ambient sound levels to be equal to or exceed the MPCA L_{50} nighttime limit of 50 dBA. In these instances, the increase to the non-wind-turbine ambient sound level due to the Project will be zero to two decibels since the highest modeled Project-Only sound level is 47 dBA. Under conditions where two sound levels have the same or very similar characteristics a 2-dBA change is imperceptible to the average person.

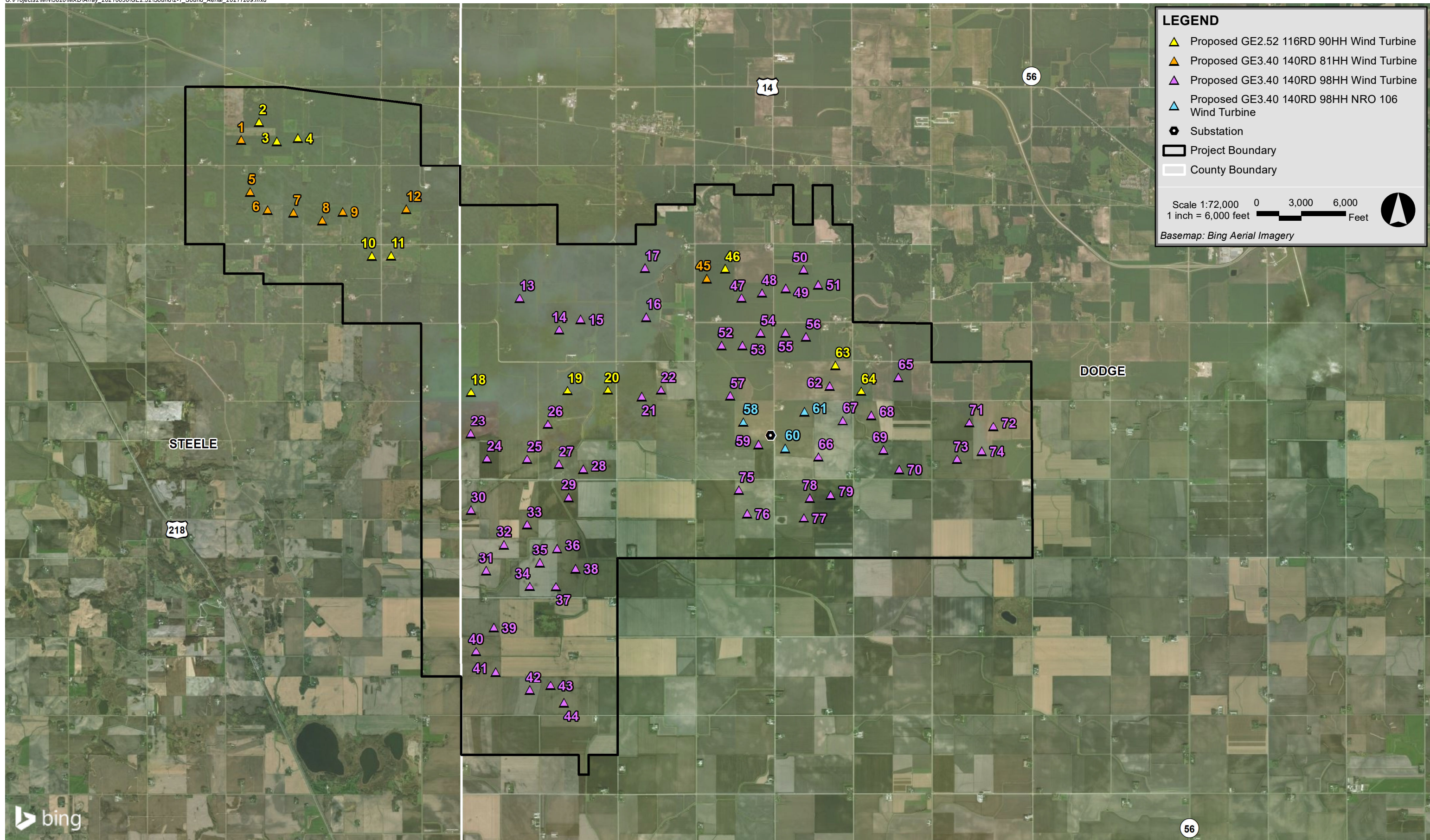
2.0 INTRODUCTION

The proposed Project will consist of 79 wind turbines using a combination of two (2) General Electric (GE) models. The array includes the 2.52 MW, 90-meter hub height wind turbine and the 3.40 MW wind turbine at 81-meter and 98-meter hub heights. All wind turbines will have Low Noise Trailing Edge (LNTE) blades. Three (3) of the GE 3.40 MW wind turbines at 98-meter hub heights will be operated in NRO Mode 106. A collector substation is proposed for the Project with up to two 150 megavolt-ampere (MVA) transformers. Figure 2-1 shows the locations of the 79 wind turbines and the substation in Dodge and Steele Counties over aerial imagery.

A detailed discussion of sound from wind turbines is presented in a white paper prepared by the Renewable Energy Research Laboratory.¹ A few points are repeated herein. Wind turbine 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 1990's, 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 typically remains constant, even with higher wind speeds. However, sound levels in general also increase with increasing wind speed with or without the presence of wind turbines.

This report presents the findings of an ambient measurement program and a sound level modeling analysis for the Project. The Project wind turbines were modeled in CadnaA using sound data from GE technical reports. The proposed substation was also included in the model. The results of this analysis are found within this report.

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



3.0 SOUND TERMINOLOGY

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

The decibel scale is logarithmic to accommodate the wide range of sound intensities found in the environment. A property of the decibel scale is that the sound pressure levels of two or more separate sounds are not directly additive. For example, if a sound of 50 dB is added to another sound of 50 dB, the total is only a 3-decibel increase (53 dB), which is equal to doubling in sound energy, but not equal to a doubling in decibel quantity (100 dB). Thus, every 3-dB change in sound level represents a doubling or halving of sound energy. The human ear does not perceive changes in the sound pressure level as equal changes in loudness. Scientific research demonstrates that the following general relationships hold between sound level and human perception for two sound levels with the same or very similar frequency characteristics²:

- ◆ 3 dBA increase or decrease results in a change in sound that is just perceptible to the average person,
- ◆ 5 dBA increase or decrease is described as a clearly noticeable change in sound level, and
- ◆ 10 dBA increase or decrease is described as twice or half as loud.

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

A sound level meter (SLM) that is used to measure sound is a standardized instrument.³ 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”. The C-weighting network has a nearly flat response for frequencies between 63 Hz and 4,000 Hz and is noted as dBC. Z-weighted sound

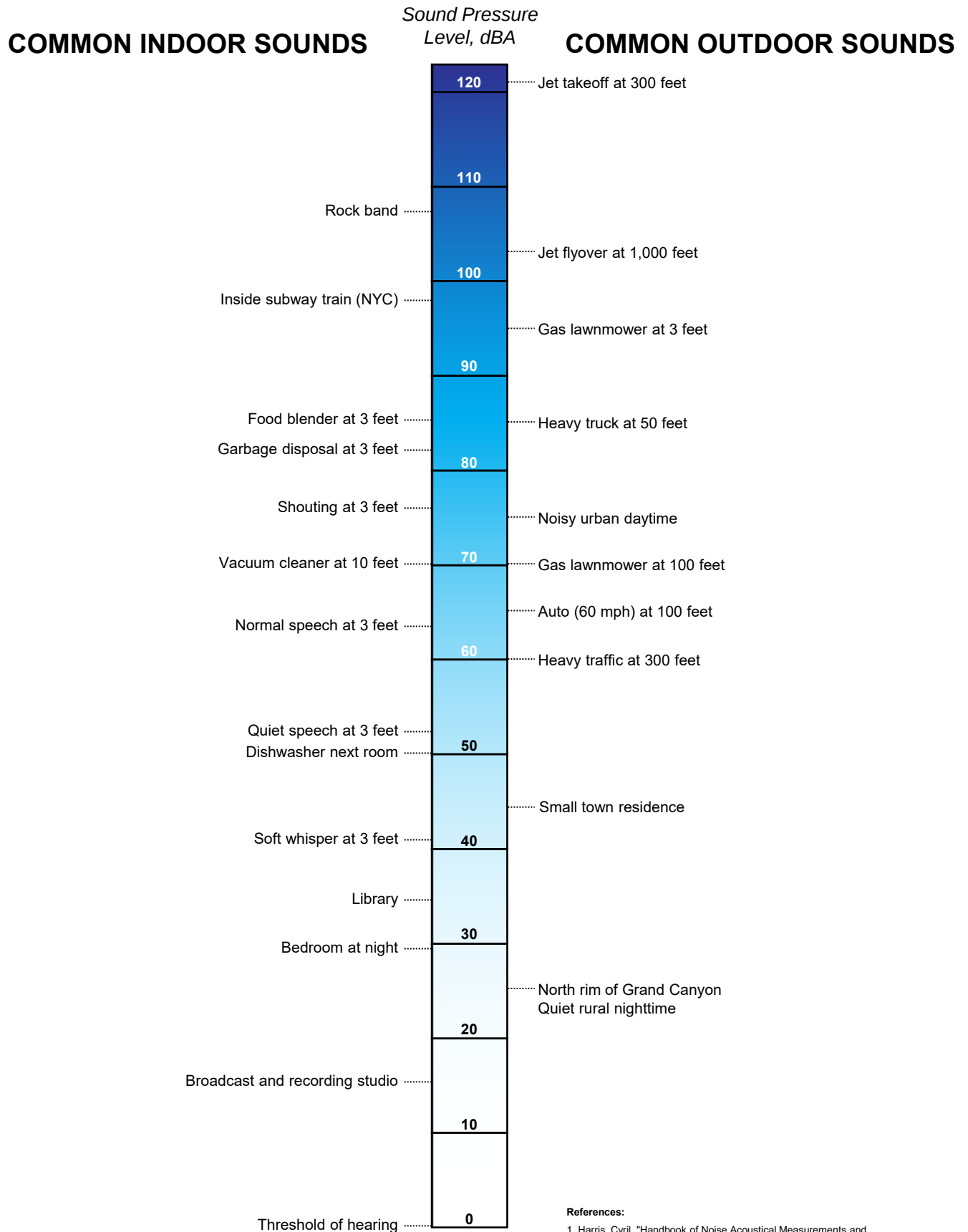
² Bies, David, and Colin Hansen. 2009. *Engineering Noise Control: Theory and Practice*, 4th Edition. New York: Taylor and Francis.

³ *American National Standard Specification for Sound Level Meters*, ANSI S1.4-2014 (R2019), published by the Standards Secretariat of the Acoustical Society of America, Melville, NY.

levels are measured sound levels without any weighting curve and are otherwise referred to as “unweighted”. Sound pressure levels for some common indoor and outdoor environments are shown in Figure 3-1.

Because the sounds in our environment vary with time they cannot simply be described with a single number. Two methods are used for describing variable sounds. These are exceedance levels and the equivalent level, both of which are derived from some number of moment-to-moment A-weighted sound 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 can have a value between 0 and 100 in terms of percentage. Several sound level metrics that are reported in community sound monitoring are described below.

- ◆ L_{10} is the sound level exceeded only 10 percent of the time. It is close to the maximum level observed during the measurement period. The L_{10} is sometimes called the intrusive sound level because it is caused by occasional louder sounds like those from passing motor vehicles.
- ◆ L_{50} is the sound level exceeded 50 percent of the time. It is the median level observed during the measurement period. The L_{50} is affected by occasional louder sounds like those from passing motor vehicles; however, it is often found comparable to the equivalent sound level under relatively steady sound level conditions.
- ◆ L_{90} is the sound level exceeded 90 percent of the time during the measurement period. The L_{90} is close to the lowest sound level observed. It is essentially the same as the residual sound level, which is the sound level observed when there are no obvious nearby intermittent sound sources.
- ◆ L_{eq} , the equivalent level, is the level of a hypothetical steady sound that would have the same energy (*i.e.*, the same time-averaged mean square sound pressure) as the actual fluctuating sound observed. The equivalent level is designated L_{eq} and is typically 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 linear mean square sound pressure values, the L_{eq} is mostly determined by loud sounds if there are fluctuating sound levels.



References:

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

4.0 NOISE REGULATIONS

4.1 Federal Regulations

There are no federal community noise regulations applicable to this Project.

4.2 Minnesota State Regulations

The Project, located within Dodge and Steele Counties, MN, is required to comply with MPCA's 7030.0040 sound standard, which states:

Subpart 1. Scope. These standards describe the limiting levels of sound established on the basis of present knowledge for the preservation of public health and welfare. These standards are consistent with speech, sleep, annoyance, and hearing conservation requirements for receivers within areas grouped according to land activities by the noise area classification (NAC) system established in part 7030.0050. However, these standards do not, by themselves, identify the limiting levels of impulsive noise needed for the preservation of public health and welfare. Noise standards in subpart 2 apply to all sources.

Subpart 2. Noise Standards.

Noise Area Classification	Daytime		Nighttime	
	L ₅₀	L ₁₀	L ₅₀	L ₁₀
1	60	65	50	55
2	65	70	65	70
3	75	80	75	80

Minn. Rule 7030.0020 defines daytime hours as 7:00AM to 10:00PM and nighttime hours from 10:00PM to 7:00AM. All daytime and nighttime limits are expressed in A-weighted decibels (dBA) and are applicable over the duration of an hour. These are to be measured using the fast response characteristic of the measurement instrumentation per Minn. Rule 7030.0060.

Noise is defined by the State of Minnesota⁴ as "any sound not occurring in the natural environment, including, but not limited to, sounds emanating from aircraft and highways, and industrial, commercial, and residential sources."

⁴ Minnesota Statutes 2017 Section 116.06

The methodology for evaluating these limits are set forth in the Guidance for Large Wind Energy Conversion System Noise Study Protocol and Report (LWECS Guidance) and the Application Guidance for Site Permitting of Large Wind Energy Conversion Systems in Minnesota, both published by the Minnesota Department of Commerce, Energy Environmental Review and Analysis, dated July 2019.

NAC 1⁵ receptors are protected by the lowest sound level limits of the MPCA. Since wind turbines can operate under conditions resulting in maximum sound power during both the day and at night, the Project would need to comply with the more stringent nighttime limits. Furthermore, because wind turbine sound is generally steady during a relatively constant wind speed there would be minimal difference, i.e. < 5 dBA, between the L₅₀ and L₁₀ sound levels due to a wind turbine. As the L₅₀ and L₁₀ noise limits differ by 5 decibels, the L₅₀ limit is more restrictive for a wind energy facility. Therefore, NAC 1 receptors have been evaluated against the L₅₀ sound level limit of 50 dBA in this analysis.

⁵ NAC 1 is defined per Rule 7030.0050 as household units (including farm houses); hotels, motels or other overnight lodging; mobile home parks or courts; other residential units; motion picture production; medical and other health services; correctional institutions; educational services; religious activities; cultural activities and nature exhibitions; entertainment assembly; camping and picnicking areas (designated); resorts and group camps; other cultural, entertainment, and recreational activities.

5.0 EXISTING SOUND LEVELS

5.1 Overview

The Project is to be located in Dodge and Steele Counties, MN, to the south of Highway 14. The Project is proposed to have 79 GE wind turbines.

5.2 Sound Level Environment

An ambient sound level survey was conducted to characterize the current acoustical environment in the community within, and to the west of the Project Area. Existing sound sources include: vehicles on Highway 14 (including trucks) and on other local roads, occasional trains to the north of the Project Area, wind, dogs, rustling vegetation, occasional distant aircraft, livestock and farm equipment, and geese along with other birds.

5.3 Sound Level Measurement Locations

Sound level measurement locations were originally selected based on the Guidance for Large Wind Energy Conversion System Noise Study Protocol and Report (2012 LWECS Guidance) published by the Minnesota Department of Commerce, dated October 2012 which requires at least seven (7) days of measurements (“long-term”). The document specifies that measurements be performed within the Project Area at no fewer than three locations including the “worst-case” receptor predicted by the sound level model. The worst-case modeling receptor is monitoring Location L3, as determined by modeling results using a preliminary wind turbine array.⁶ This array is documented in a pre-construction sound level measurement protocol (the Protocol) that was submitted to the MN DOC on March 14, 2018. The array is shown on Figure 1 of the Protocol which is provided as Appendix A of this report. Under the current modeling, this location has a modeled broadband sound level equal to the worst-case modeled sound level at a residence.

Since this was a pre-construction program for DCW and Epsilon interprets subsections #1 and #2 in the 2012 LWECS Guidance to pertain to a post-construction evaluation, no off-site long-term monitoring locations were selected. However, supplemental short-term measurements were performed to the west of the Project Area, west of Highway 218. Details of the long-term and short-term locations are described below.

5.3.1 Long-term Locations

The selection of the sound monitoring locations was intended to be representative of receptors within the Project Boundary per the requirements of the 2012 LWECS Guidance document. Figure 5-1 shows the actual long-term measurement locations overlaid upon an aerial photograph of the surrounding area. Each measurement location is described below. DCW coordinated access to

⁶ Under the current (Array 210806) array, this location still has the highest modeled sound level.

private property prior to the commencement of the measurement program. The coordinates for the six long-term locations were obtained by Epsilon staff using Global Positioning System (GPS) instrumentation and are presented in latitude longitude coordinates in reference to the NAD83 datum in Table 5-1. All distances are rounded to the nearest 10 feet or shown in miles. Photographs of the six locations are included in Figures 5-2 through 5-7, respectively.

- ◆ Location L1 – Modeling Receptor #278
 - Approximately 2,040 feet to the closest proposed wind turbine (#2). This location is representative of the residences near Highway 14 in the northwest corner of the Project Area.
- ◆ Location L2 – Modeling Receptor #477
 - Approximately 2,080 feet to the closest proposed wind turbine (#30). This location is representative of residences in the southwest area of the Project.
- ◆ Location L3 – Modeling Receptor #16
 - Approximately 1,950 feet to the closest proposed wind turbine (#78). This location is representative of the modeling receptor with the highest modeled sound level.
- ◆ Location L4 – Modeling Receptor #69
 - Approximately 1,510 feet to the closest proposed wind turbine (#56). This location is representative of the residences in the northeast corner of the Project Area.
- ◆ Location L5 – Modeling Receptor #531
 - Approximately 2,380 feet to the closest proposed wind turbine (#15). This location is representative of the residences in the northern central part of the Project Area.
- ◆ Location L6 – Modeling Receptor #381
 - Approximately 2,590 feet to the closest proposed wind turbine (#72). This location is representative of the residences on the eastern end of the Project Area.

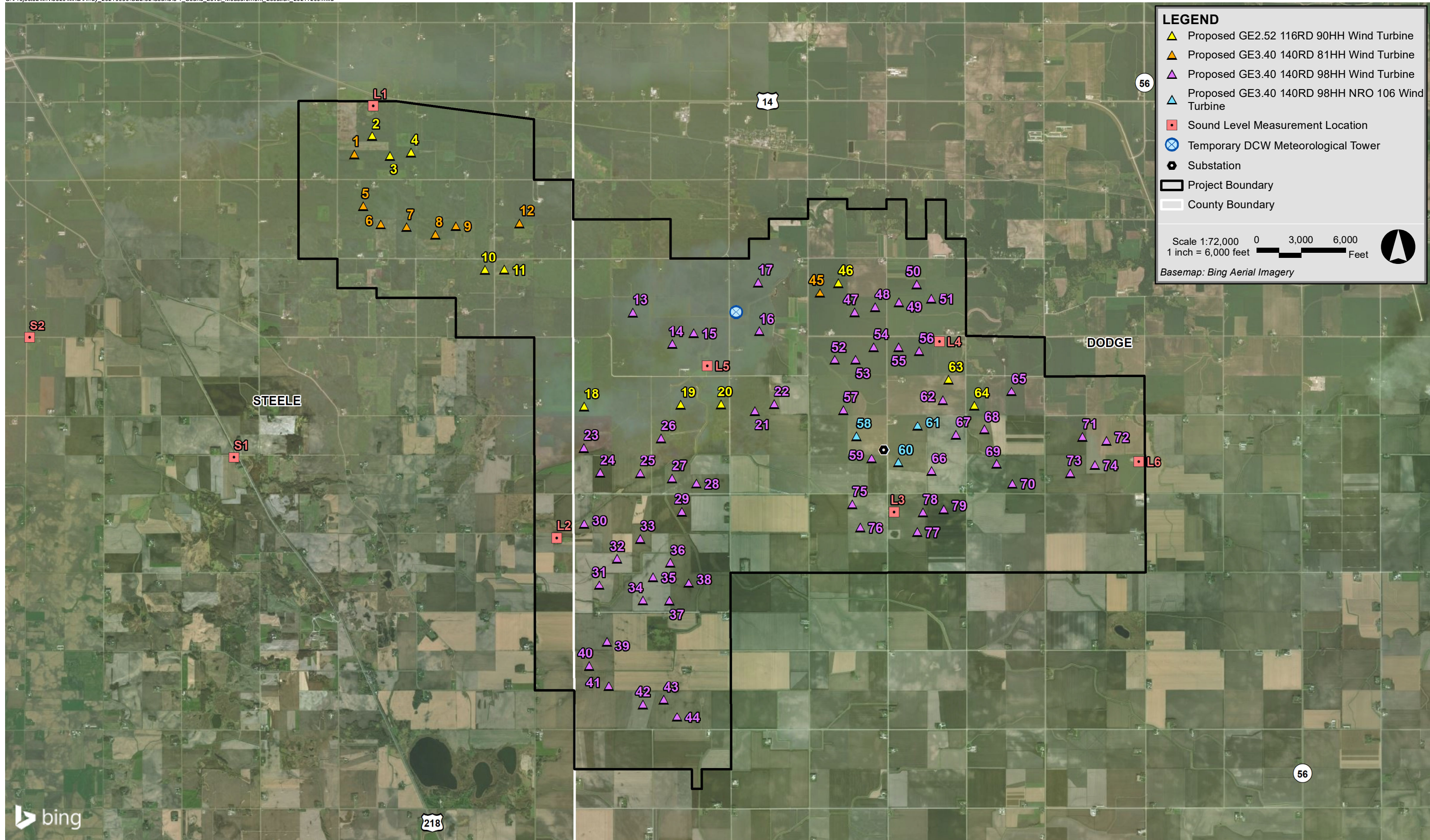


Figure 5-2 Photo of Sound Level Measurement Location L1 (facing north)



Figure 5-3 Photo of Sound Level Measurement Location L2 (facing south)



Figure 5-4 Photo of Sound Level Measurement Location L3 (facing west)



Figure 5-5 Photo of Sound Level Measurement Location L4 (facing north)



Figure 5-6 Photo of Sound Level Measurement Location L5 (facing west)



Figure 5-7 Photo of Sound Level Measurement Location L6 (facing south)



Table 5-1 GPS Coordinates – Long-term Sound Level Measurement Locations

Location	Coordinates	
	Latitude (°)	Longitude (°)
L1	44.05075	93.09703
L2	43.97113	93.04990
L3	43.97566	92.96365
L4	44.00745	92.95164
L5	44.00298	93.01144
L6	43.98523	92.90135

5.3.2 Short-term Locations

A total of two (2) short-term measurement locations were utilized for the program. The specific locations were field-identified by the Epsilon engineer to capture sound levels representative of homes outside the Project Area near Route 218 and at a significant distance from Route 218. The earlier Figure 5-1 shows the actual short-term measurement locations with respect to the Project Area. Each measurement location is described herein. The coordinates for the two short-term locations were obtained by Epsilon staff using Global Positioning System (GPS) instrumentation and are presented in latitude longitude coordinates in reference to the NAD83 datum in Table 5-2. Photographs of the two locations are included in Figures 5-8 and 5-9, respectively.

- ◆ Location S1 – North side of SE 73rd Street approximately 130 feet west of the Highway 218 intersection
 - 3.5 miles from the nearest proposed wind turbine (#6). This location is representative of residences in close vicinity to Highway 218 along the western boundary of the Project Area.
- ◆ Location S2 – South side of SE 58th Street approximately 200 feet east of the SE 24th intersection
 - 4.6 miles from the nearest proposed wind turbine (#5). This location is representative of residences in agricultural areas to the west of the Project Area away from any highway.

Table 5-2 **GPS Coordinates – Short-term Sound Level Measurement Locations**

Location	Coordinates	
	Latitude (°)	Latitude (°)
S1	43.98647	93.13259
S2	44.00808	93.18485

Figure 5-8 **Photo of Sound Level Measurement Location S1 (facing east)**



Figure 5-9 Photo of Sound Level Measurement Location S2 (facing west)



5.4 Sound Measurement Methodology

5.4.1 Long-term Measurement Methodology

Programmable unattended sound level meters were placed at on-site Locations L1, L2, L3, L4, L5, and L6. These monitors continuously measured sound levels from generally Tuesday, March 20, 2018 to Thursday, March 29, 2018. Sound levels were measured at a height of approximately five feet above the ground at locations where there were no large reflective surfaces to affect the measured levels.

In addition to the collection of sound level data, ground-level wind speeds were continuously measured and logged at each location. Only hourly sound levels coupled with hourly-averaged ground level wind speeds have been summarized. Per the 2012 LWECS Guidance, sound levels measured under wind speeds above 11 mph were considered invalid and removed from the analysis.

A NEER on-site meteorological tower located approximately 2,040 feet northwest from proposed wind turbine #16 measured and logged wind speeds during the sound level measurement period. The location of the on-site met tower is identified in Figure 5-1. Meteorological data collected during the measurement period at the Dodge Center Airport National Weather Service (NWS)

station in Dodge Center, MN were also archived from the National Centers for Environmental Information (NCEI). These data are included in Appendix B and were used to determine hourly precipitation periods during the measurement program during which the Guidance requires removal of measured sound levels from the results.

At Location L1, a continuous programmable unattended sound level meter was placed on the property at 6893 SE 28th St in Claremont. This measurement location is a participating residence that is representative of residences in the northwest corner of the Project near Hwy 14. The sound level meter continuously measured and stored A-weighted broadband and Z-weighted one-third octave-band sound level statistics from 12:00 PM Tuesday, March 20 until 2:00 PM Thursday, March 29 for a total of 218 hours.

At Location L2, a continuous programmable unattended sound level meter was placed on the property at 8375 SE 89th Ave in Claremont. This measurement location is a participating residence that is representative of residences in the southwest corner of the Project Area and of the residences near proposed GE 3.4 wind turbines. The sound level meter continuously measured and stored A-weighted broadband and Z-weighted one-third octave-band sound level statistics from 2:00 PM Tuesday, March 20 until 11:00 AM Thursday, March 29 for a total of 213 hours.

At Location L3, a continuous programmable unattended sound level meter was placed on the property at 67214 140th Ave in Claremont. This measurement location is a participating residence that has the highest modeled Project Only broadband sound level at a residence. The sound level meter continuously measured and stored A-weighted broadband and Z-weighted one-third octave-band sound level statistics from 6:00 PM Tuesday, March 20 until 10:00 AM Thursday, March 29 for a total of 208 hours.

At Location L4, a continuous programmable unattended sound level meter was placed on the property 14643 650th St in Claremont. This measurement location is a participating residence and is representative of residences in the northeast corner of the Project. The sound level meter continuously measured and stored A-weighted broadband and Z-weighted one-third octave-band sound level statistics from 9:00 AM Thursday, March 22 until 1:00 PM Thursday, March 29 for a total of 172 hours.

At Location L5, a continuous programmable unattended sound level meter was placed on the property at 11688 655th St in Claremont. This measurement location is a participating residence and is representative of residences around the northern center of the Project site. The sound level meter continuously measured and stored A-weighted broadband and Z-weighted one-third octave-band sound level statistics from 3:00 PM Tuesday, March 20 until 12:00 PM Thursday, March 29 for a total of 214 hours.

At Location L6, a continuous programmable unattended sound level meter was placed on the property at 66583 170th Ave in Dodge Center. This measurement location is a non-participating residence and is representative of residences on the eastern end of the Project site. The sound level meter continuously measured and stored A-weighted broadband and Z-weighted one-third octave-band sound level statistics from 9:00 AM Wednesday, March 21 until 9:00 AM Thursday, March 29 for a total of 192 hours.

In addition to A-weighted and Z-weighted sound levels, broadband equivalent C-weighted sound level data (LC_{eq}) were also collected at each location. Sound observations were made at all six locations during daytime hours generally corresponding to equipment setups on March 20 and March 21. Sound observations were also made during nighttime hours from 10:30 PM to 12:30 AM on the night of March 21 to 22. An Epsilon engineer checked on the integrity of the long-term monitoring equipment no less than one time following the initial setup.

5.4.2 *Short-term Measurement Methodology*

In addition to the long-term data, short-term sound level measurements were made at Locations S1 and S2 at publicly accessible locations. One daytime and one nighttime sound level measurement, each 20-minutes in duration, was taken at each location during conditions when there was no precipitation⁷ and ground-level wind speeds were less than 11 mph as measured by hand-held meteorological equipment. Sound observations were made during both periods at each location by the Epsilon engineer.

Sound levels were measured at a height of approximately five feet above the ground at locations where there were no large reflective surfaces to affect the measured levels. Below is a description of the measurement program for each location.

Short-term measurements were performed at Location S1 on the road edge approximately 100 feet to the west of the intersection of Hwy 218 and SE 73rd St. A tripod-mounted sound level meter measured and stored A-weighted broadband and Z-weighted one-third octave-band sound level statistics for 20 minutes starting at 1:06 PM for the daytime period on Wednesday, March 21 and at 12:34 AM on Thursday, March 22 for the nighttime period. Broadband equivalent C-weighted sound level data (LC_{eq}) were also collected.

Short-term measurements were performed at Location S2 on the road edge approximately 200 feet to the east of the intersection of SE 58th St and SE 24th Ave. A tripod-mounted sound level meter measured and stored A-weighted broadband and Z-weighted one-third octave-band sound level statistics for 20 minutes starting at 12:06 PM for the daytime period on Wednesday, March 21 and at 1:09 AM on Thursday, March 22 for the nighttime period. Broadband equivalent C-weighted sound level data (LC_{eq}) were also collected.

⁷ Negligible snow flurry briefly occurred during daytime measurement at Location S2 with roads remaining dry.

5.5 Measurement Equipment

5.5.1 Sound Level Equipment

Six Larson Davis (LD) model 831 sound level meters, equipped with PCB Piezotronics Type 1 preamplifiers, PCB 377B20 or 377C20 half-inch microphones, and environmental protection kits were used to collect continuous broadband A-weighted (dBA), broadband C-weighted equivalent (LC_{eq}), and Z-weighted one-third octave-band sound pressure level data at Locations L1, L2, L3, L4, L5, and L6. Each microphone was tripod-mounted at a height of five feet above ground with a 7-inch diameter windscreen. The meters utilized fast response and were set to log data every hour along with a one-minute time history for A-weighted parameters including: L_1 , L_{10} , L_{50} , L_{90} , and L_{eq} .

One LD model 831 meter was used to collect short-term broadband A-weighted, LC_{eq} , and Z-weighted one-third octave-band sound pressure level data at Locations S1 and S2 for 20 minutes during daytime and nighttime hours. This meter was tripod-mounted at a height of five feet above ground with a 7-inch diameter windscreen. The meter utilized fast response and was set to log data every 20 minutes along with a one-second time history for the same A-weighted parameters as the long-term meters.

All meters meet Type 1 ANSI S1.4-1983 (R2006) standards for sound level meters and were calibrated and certified as accurate to standards set by the National Institute of Standards and Technology. These calibrations were conducted by an independent laboratory within the prior 12 months of the measurement program. Additionally, all sound level measurement equipment was calibrated in the field before and after the surveys with the manufacturer's acoustical calibrator which meets the standards of IEC 942 Class 1L and ANSI/ASA S1.40-2006 (R2016).

5.5.2 Meteorological Equipment

Wind speed can have a strong influence on ambient sound levels. In order to understand how the existing sound levels are influenced by wind speed and as per the 2012 LWECs Guidance, continuous wind speed data were recorded at each long-term location by Epsilon. A HOBO H21-002 micro-weather station (manufactured by Onset Computer Corporation) was used to continuously measure the ground-level wind speed. The wind sensor was mounted at a height of approximately five feet above the ground (microphone height) and data were logged every hour to be synced with the sound level measurements. These sensors have a measurement range of 0 to 44 m/s (99 mph) and an accuracy of ± 1.1 m/s (2.4 mph), or better. Depending on the model used, the starting threshold was ≤ 1 m/s (2.2 mph) or ≤ 0.5 m/s (1.1 mph). Wind direction data were additionally collected at Location L4 and L5. The wind direction measurement range is 0 to 358 degrees (2-degree dead band), with an accuracy of ± 5 degrees. For the short-term measurements where weather station utilization was not practical, wind speeds were measured with a hand-held Davis Instruments TurboMeter electronic wind speed indicator.

In addition to Epsilon's portable weather stations, Dodge County Wind's on-site meteorological tower measured and logged wind speeds during the measurement program. These data were scaled to a height of 89 meters, to represent hub height wind speeds, and averaged over hourly periods to correlate with the sound data. The location of the meteorological tower is approximately 2,040 feet southwest of proposed wind turbine #16 as shown in Figure 5-1.

Meteorological data collected during the measurement period at the Dodge Center Airport National Weather Service (NWS) station in Dodge Center, MN were also archived from the National Centers for Environmental Information (NCEI) and are included in Appendix B.

5.6 Measured and Calculated Sound Levels

A brief summary of the measured (A-weighted) and measured/calculated (C-weighted) sound levels and sound sources at each long-term and short-term location is provided in this section. Several weather events were notable during the approximately 7-day measurement program, including 47 hours of precipitation, as determined from the NCEI data. These periods were excluded from the analysis as per the 2012 LWECS Guidance but included in the graphical presentations in this section. Short-term measurements were performed during dry periods. Snow cover was either minimal or nonexistent during the entire measurement program. Since this was a pre-construction program for DCW and Epsilon interprets subsection #29 in the 2012 LWECS Guidance to pertain to a post-construction evaluation, no comparison of measured sound levels to the Minnesota limits is provided in this report.

5.6.1 Long-term Sound Levels

5.6.1.1 Location L1

Based on personal observations, sound levels at Location L1 were influenced by vehicular traffic (including trucks) on Hwy 14, wind, occasional trains, and birds. The range of A-weighted sound levels from the continuous measurements, neglecting periods of precipitation (8% of measurements), are summarized below. Ground level wind speeds did not exceed 11 mph at this location during the monitoring period. A complete set of the measured sound levels and meteorological considerations are presented graphically in Figure 5-10 (A-weighted sound levels) and Figure 5-11 (C-weighted sound levels) as per the 2012 LWECS Guidance. Based on the personal observations at the site, the sound levels at this location are primarily controlled by traffic on Hwy 14.

The L_{10} A-weighted sound levels ranged from 41 to 61 dBA;

The L_{50} A-weighted sound levels ranged from 29 to 55 dBA.

5.6.1.2 Location L2

Based on personal observations, sound levels at Location L2 were influenced by farm vehicles, livestock, birds, wind, and some distant vehicles on local roads. The range of A-weighted sound levels from the continuous measurements, neglecting periods of precipitation (7% of measurements), are summarized below. Ground level wind speeds did not exceed 11 mph at this location during the monitoring period. A complete set of the measured sound levels and meteorological considerations are presented graphically in Figure 5-12 (A-weighted sound levels) and Figure 5-13 (C-weighted sound levels) as per the 2012 LWECS Guidance. Based on the personal observations at the site, the sound levels at this location are primarily controlled by farm activity and livestock on the property.

The L₁₀ A-weighted sound levels ranged from 27 to 69 dBA;

The L₅₀ A-weighted sound levels ranged from 20 to 53 dBA.

5.6.1.3 Location L3

Based on personal observations, sound levels at Location L3 were influenced by wind, birds, a mechanical noise to the east (nighttime only), and distant vehicles on local roads and Hwy 14. The range of A-weighted sound levels from the continuous measurements, neglecting periods of precipitation (6% of measurements), are summarized below. Ground level wind speeds did not exceed 11 mph at this location during the monitoring period. A complete set of the measured sound levels and meteorological considerations are presented graphically in Figure 5-14 (A-weighted sound levels) and Figure 5-15 (C-weighted sound levels) as per the 2012 LWECS Guidance. Based on the personal observations at the site, the sound levels at this location are primarily controlled by the unknown and off-property mechanical noise at nighttime and by birds during the daytime.

The L₁₀ A-weighted sound levels ranged from 19 to 58 dBA;

The L₅₀ A-weighted sound levels ranged from 18 to 53 dBA.

In addition to broadband sound levels, one-third octave-band sound levels were collected at this location and are presented in this report. One-third octave-band data from an hourly period during representative wind speed conditions, interpreted by Epsilon as low ground-level wind speed and high hub-height wind speed, are presented for this location in Figure 5-16 for the worst-case modeled receptor⁸ per the 2012 LWECS Guidance. Z-weighted, A-weighted, and C-weighted one-third octave-band frequency levels are included in the figure.

⁸ As identified in the Protocol (Appendix A)

5.6.1.4 Location L4

Based on personal observations, sound levels at Location L4 were influenced by distant vehicles on local roads, wind, birds, and dogs. The range of A-weighted sound levels from the continuous measurements, neglecting periods of precipitation (5% of measurements) and 22 hours when ground level wind speeds exceeded 11 mph (13% of measurements), are summarized below. A complete set of the measured sound levels and meteorological considerations are presented graphically in Figure 5-17 (A-weighted sound levels) and Figure 5-18 (C-weighted sound levels) as per the 2012 LWECS Guidance. Based on the personal observations at the site, the sound levels at this location are primarily controlled by wind conditions in the area.

The L_{10} A-weighted sound levels ranged from 21 to 53 dBA;

The L_{50} A-weighted sound levels ranged from 19 to 49 dBA.

5.6.1.5 Location L5

Based on personal observations, sound levels at Location L5 were influenced by wind, birds, some automotive work at the residence, distant vehicles on Hwy 14, and an off-property mechanical noise (nighttime only). The range of A-weighted sound levels from the continuous measurements, neglecting periods of precipitation (7% of measurements) and 6 hours when ground level wind speeds exceeded 11 mph (3% of measurements), are summarized below. A complete set of the measured sound levels and meteorological considerations are presented graphically in Figure 5-19 (A-weighted sound levels) and Figure 5-20 (C-weighted sound levels) as per the 2012 LWECS Guidance. Based on the personal observations at the site, the sound levels at this location are primarily controlled by a variety of sound sources.

The L_{10} A-weighted sound levels ranged from 26 to 60 dBA;

The L_{50} A-weighted sound levels ranged from 20 to 56 dBA.

5.6.1.6 Location L6

Based on personal observations, sound levels at Location L6 were influenced by wind, distant vehicles, occasional trains, birds, dogs, mechanical noise from manufacturing facilities in various directions from the residence. The range of A-weighted sound levels from the continuous measurements, neglecting periods of precipitation (5% of measurements) and 24 hours when ground level wind speeds exceeded 11 mph (12% of measurements), are summarized below. A complete set of the measured sound levels and meteorological considerations are presented graphically in Figure 5-21 (A-weighted sound levels) and Figure 5-22 (C-weighted sound levels) as per the 2012 LWECS Guidance. Based on the personal observations at the site, the sound levels at this location are primarily controlled by a variety of sound sources.

Figure 5-10: Measured Hourly A-weighted Sound Pressure Levels (dBA) versus Met Data
Location L1

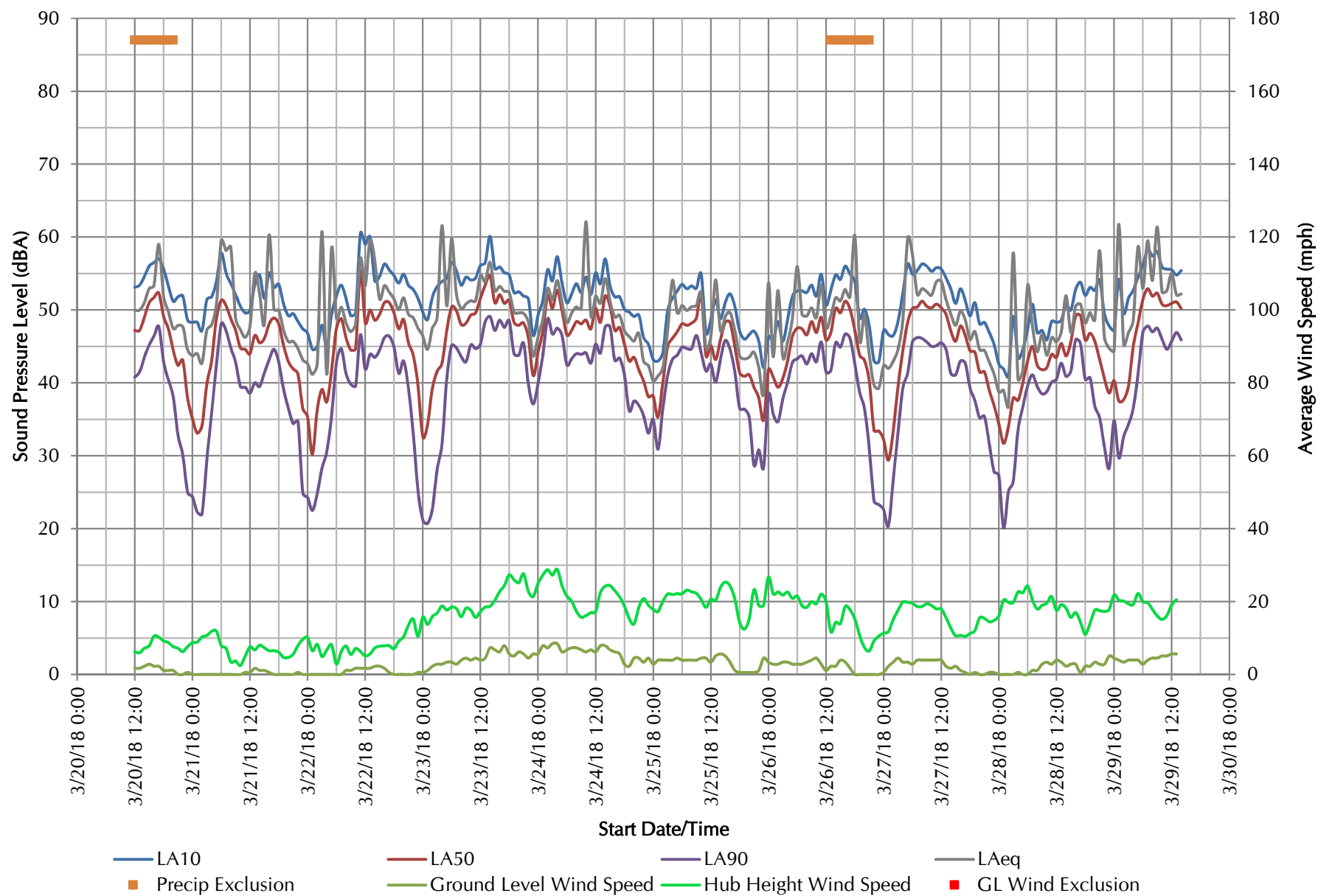


Figure 5-11: Measured / Calculated Hourly C-weighted Sound Pressure Levels (dBC) versus Met Data
Location L1

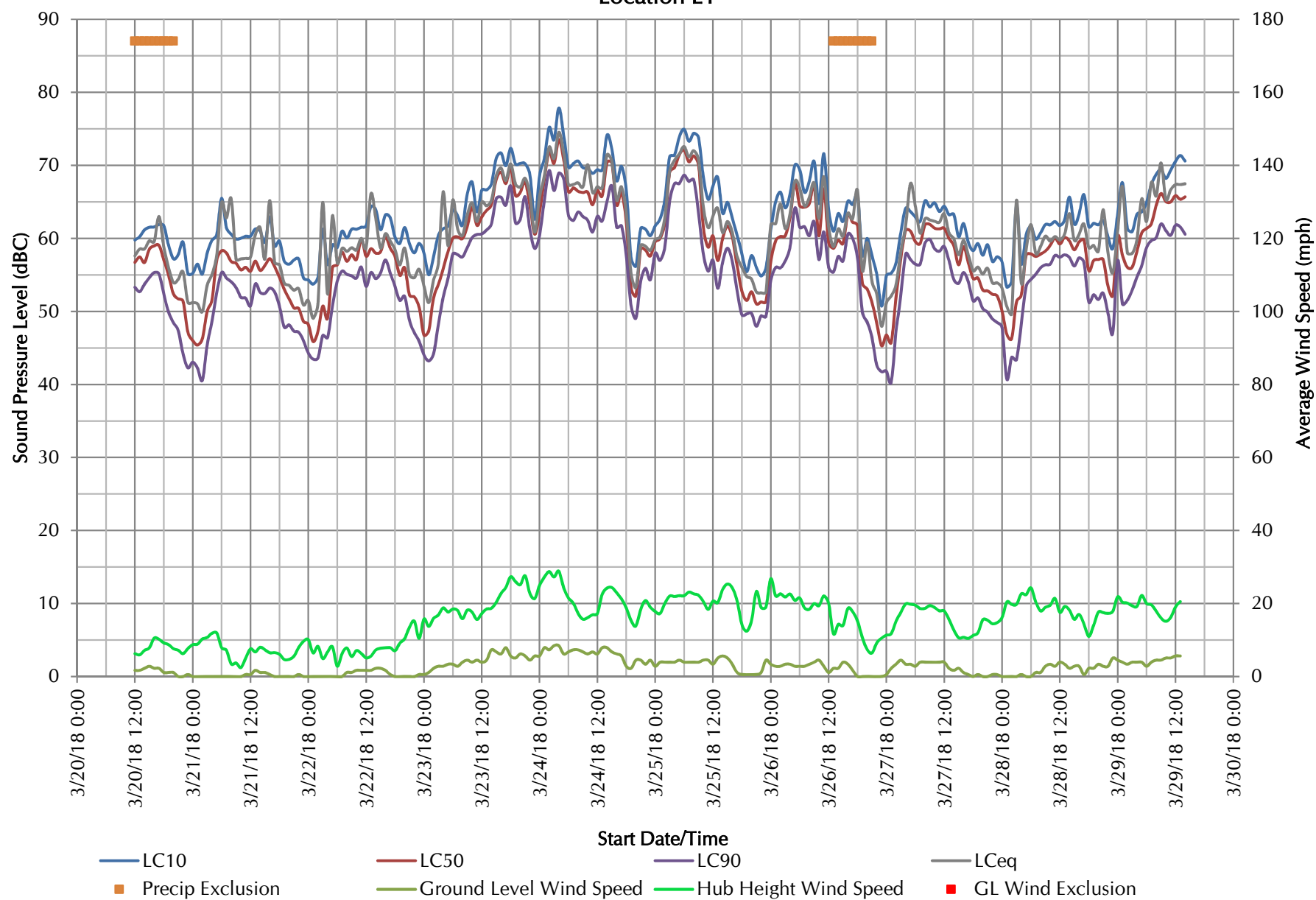


Figure 5-12: Measured Hourly A-weighted Sound Pressure Levels (dBA) versus Met Data
Location L2

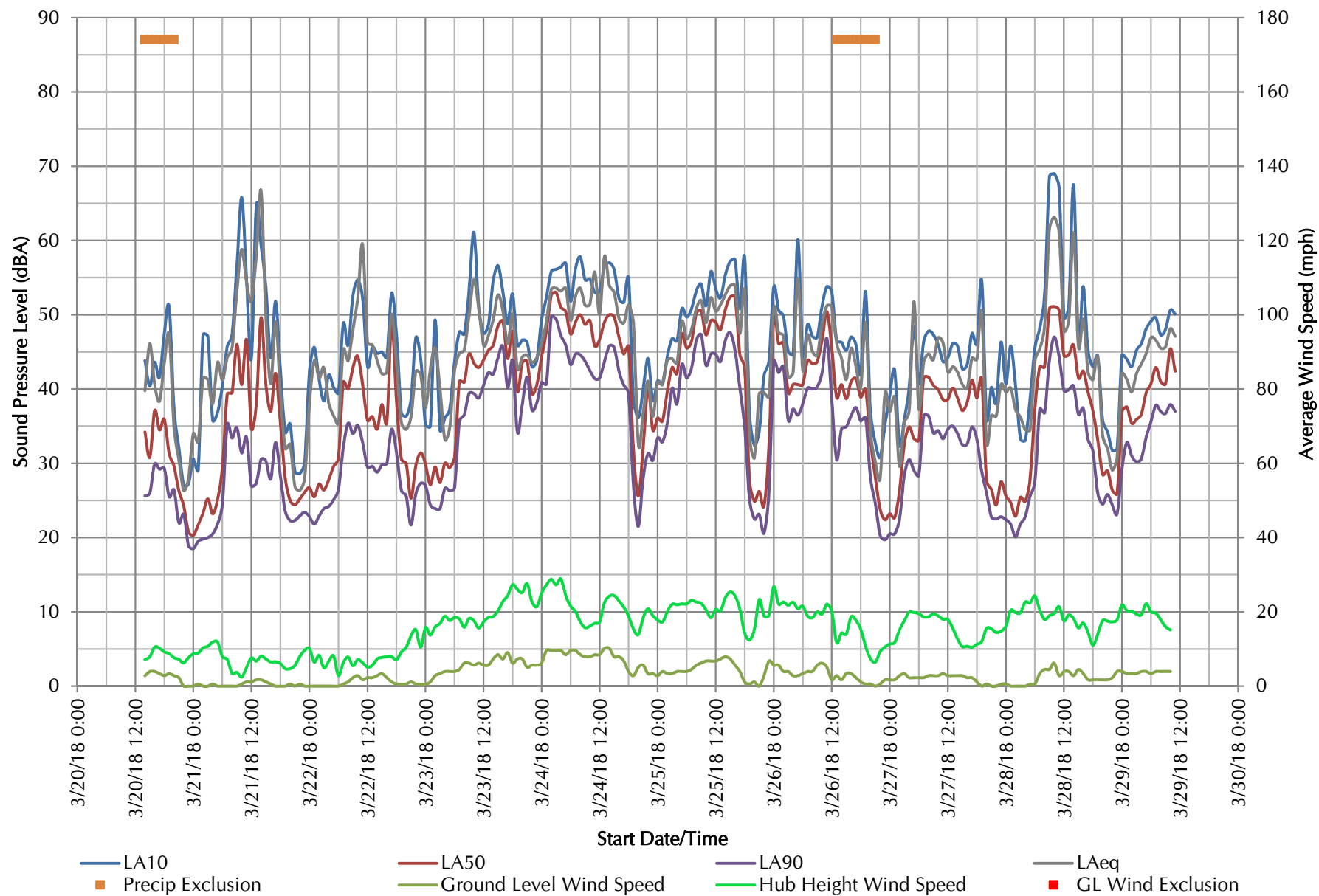


Figure 5-13: Measured / Calculated Hourly C-weighted Sound Pressure Levels (dBC) versus Met Data
Location L2

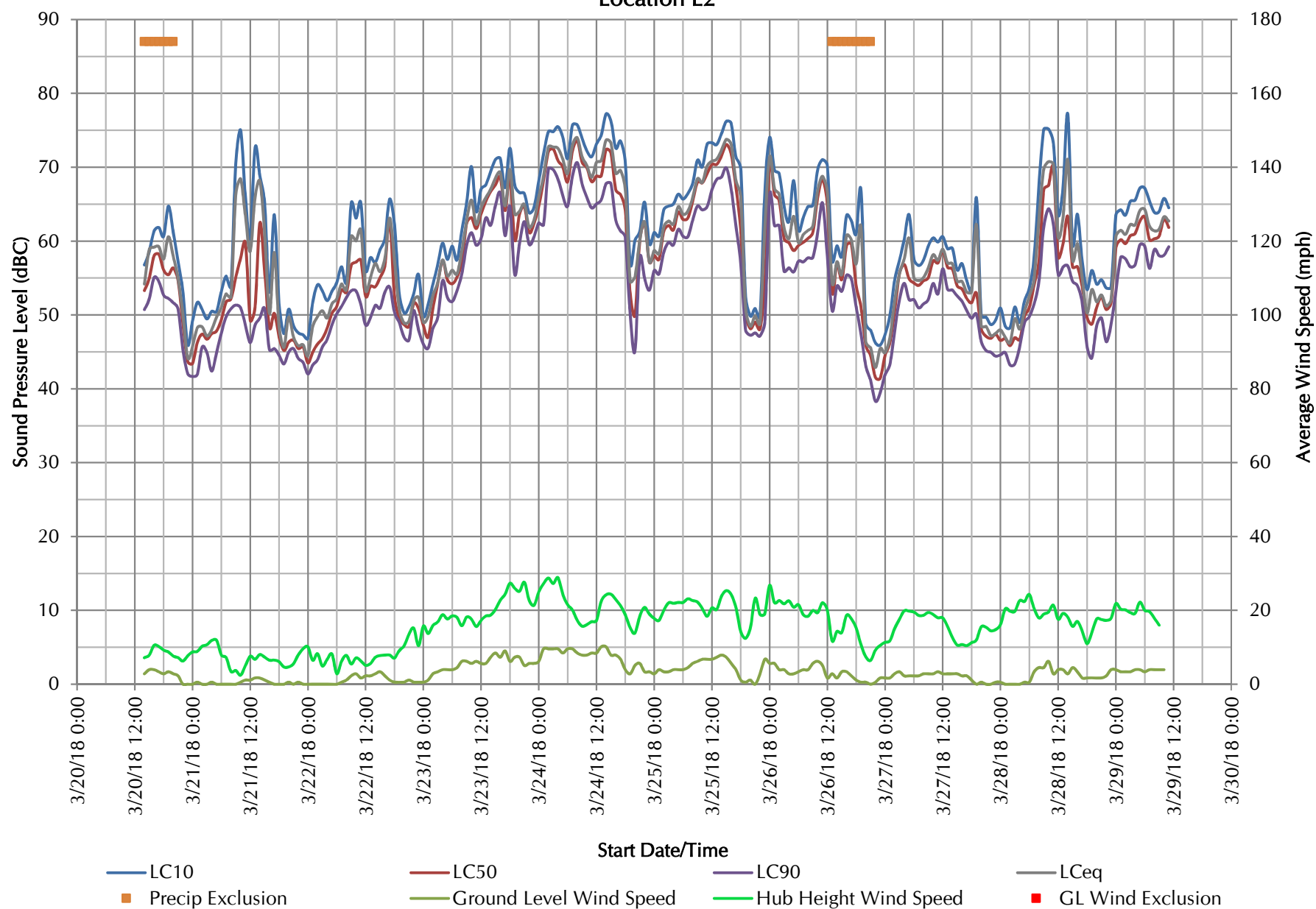


Figure 5-14: Measured Hourly A-weighted Sound Pressure Levels (dBA) versus Met Data
Location L3

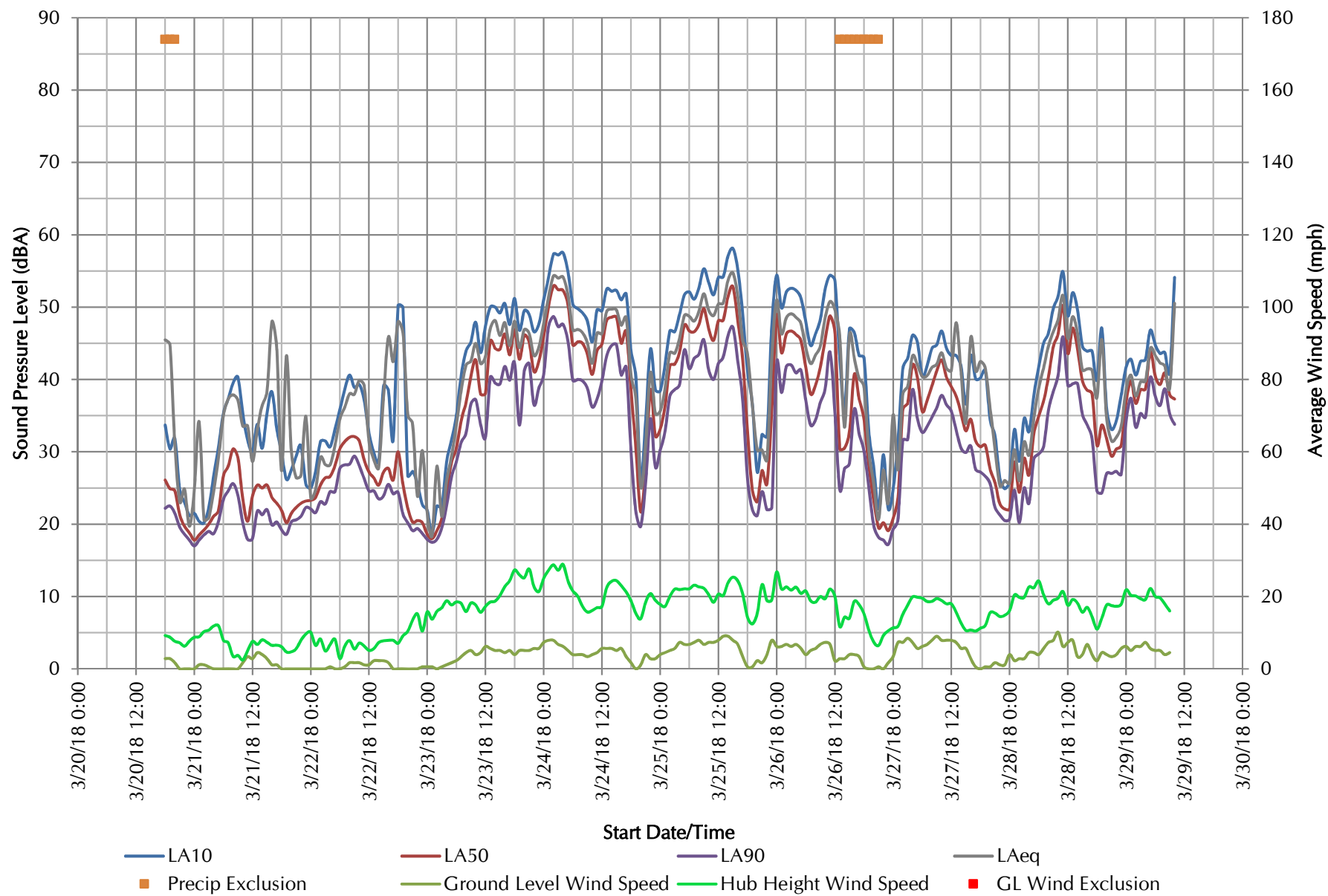


Figure 5-15: Measured / Calculated Hourly C-weighted Sound Pressure Levels (dBC) versus Met Data
Location L3

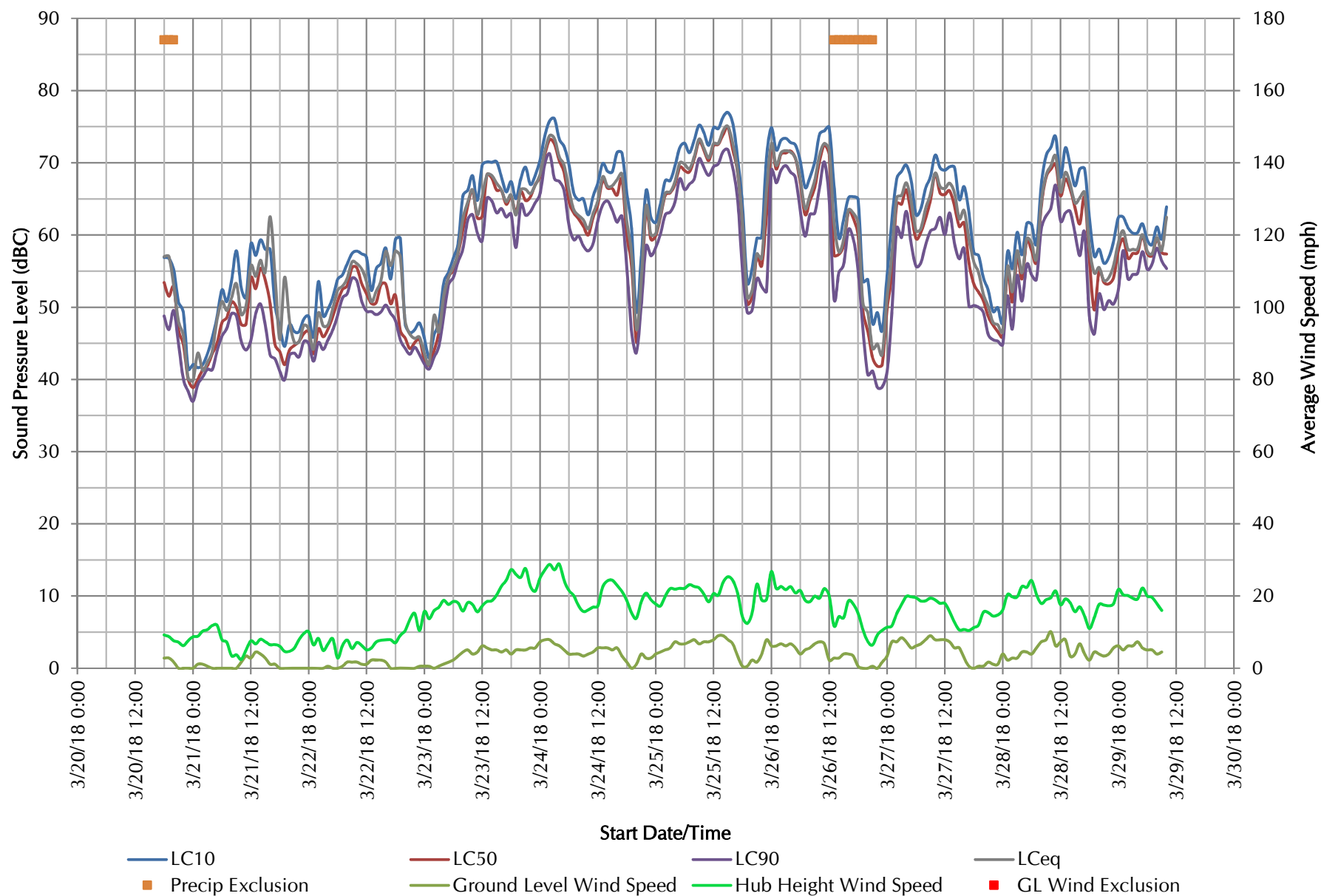


Figure 5-16: Measured One-Third Octave Band Sound Levels During A Representative Hub Height
Wind Speed Period - Location L3

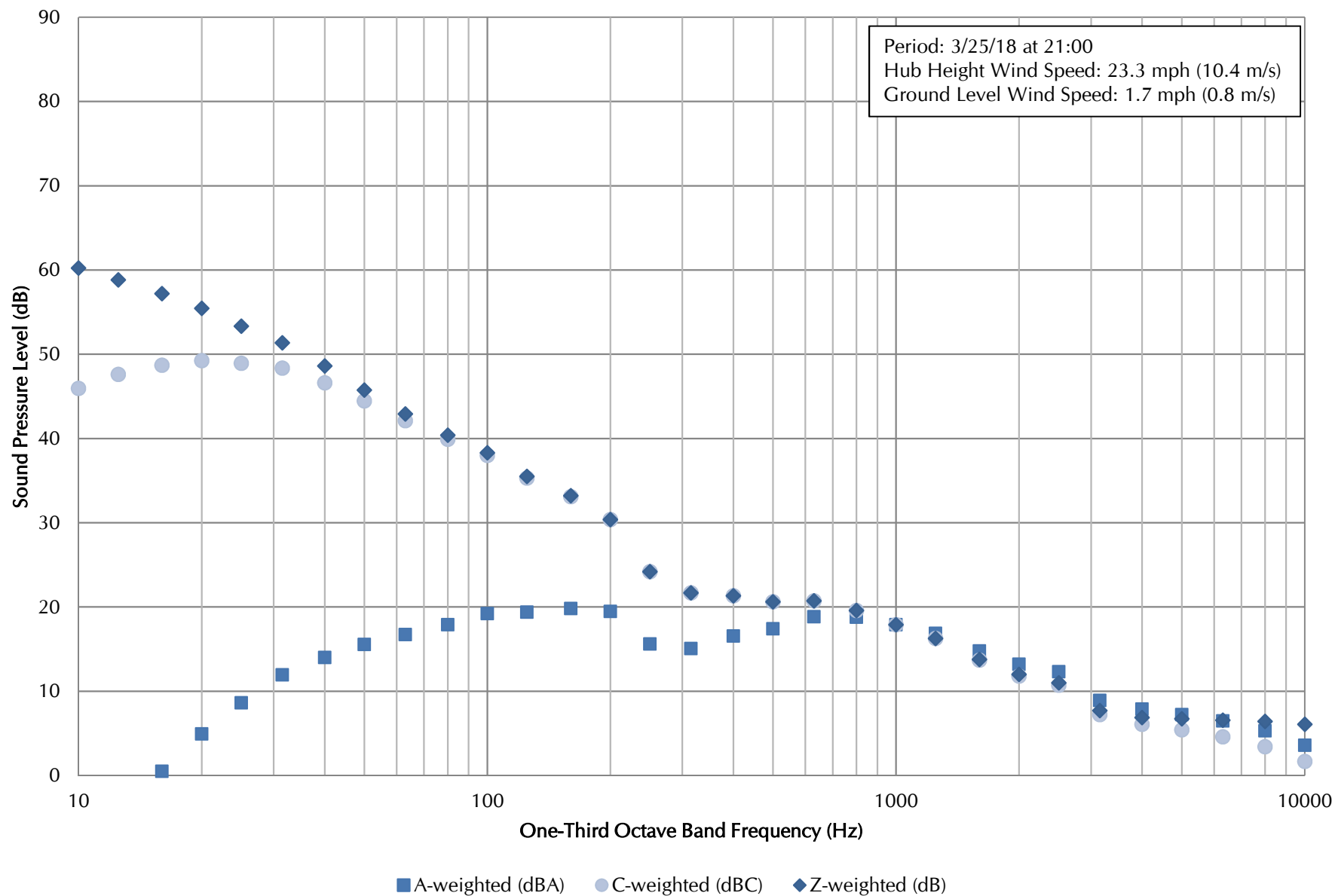


Figure 5-17: Measured Hourly A-weighted Sound Pressure Levels (dBA) versus Met Data
Location L4

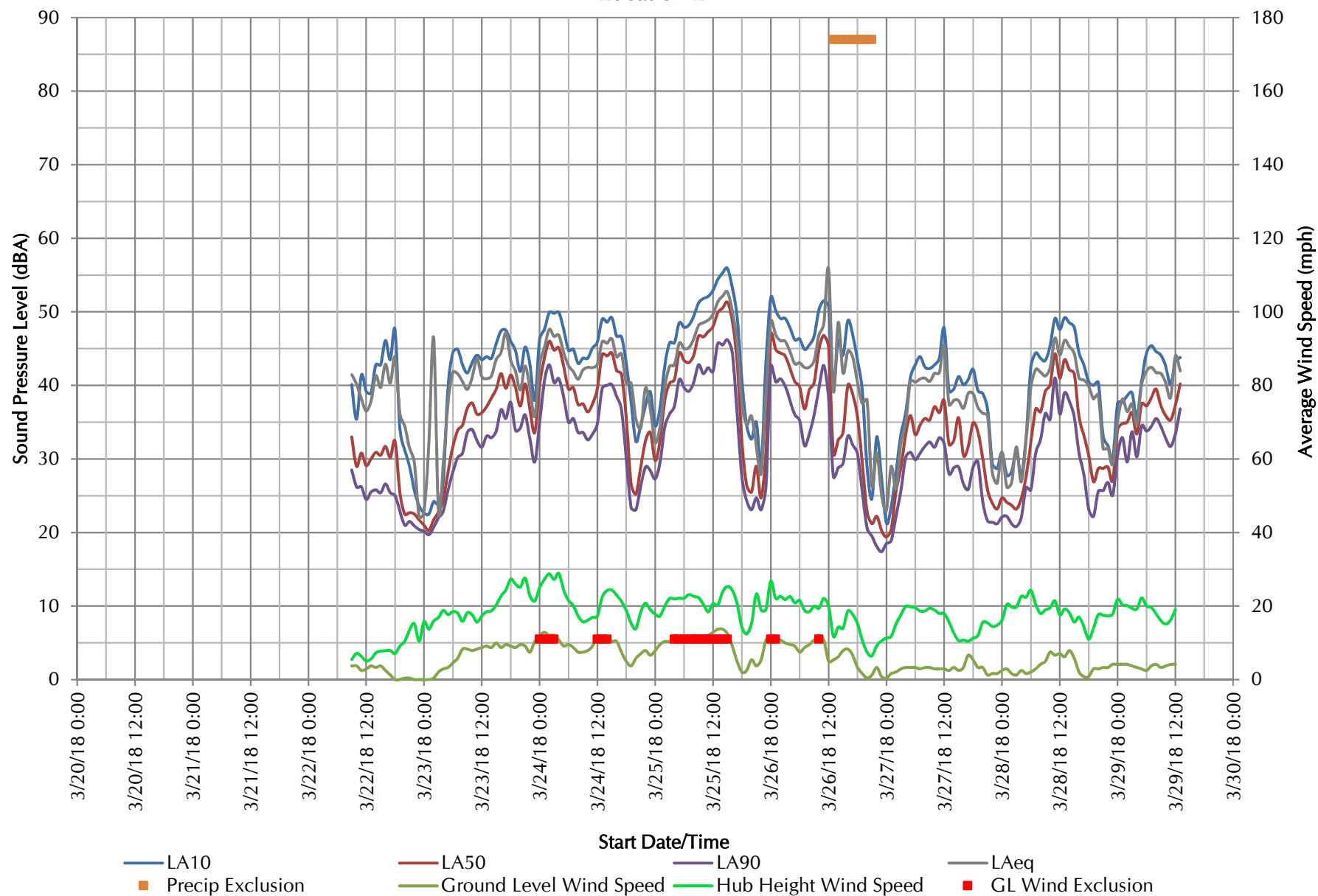


Figure 5-18: Measured / Calculated Hourly C-Weighted Sound Pressure Levels (dBC) versus Met Data
Location L4

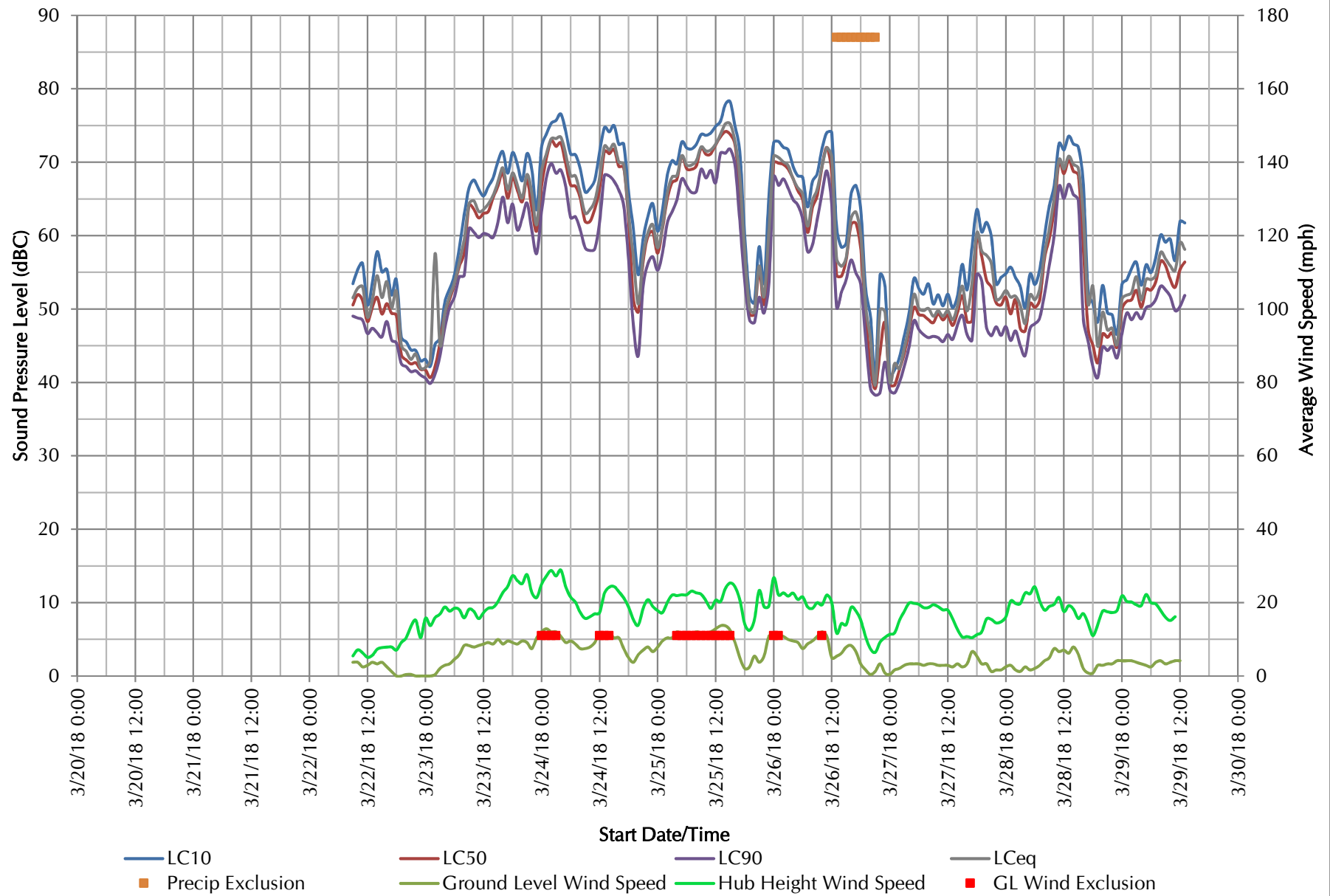


Figure 5-19: Measured Hourly A-weighted Sound Pressure Levels (dBA) versus Met Data
Location L5

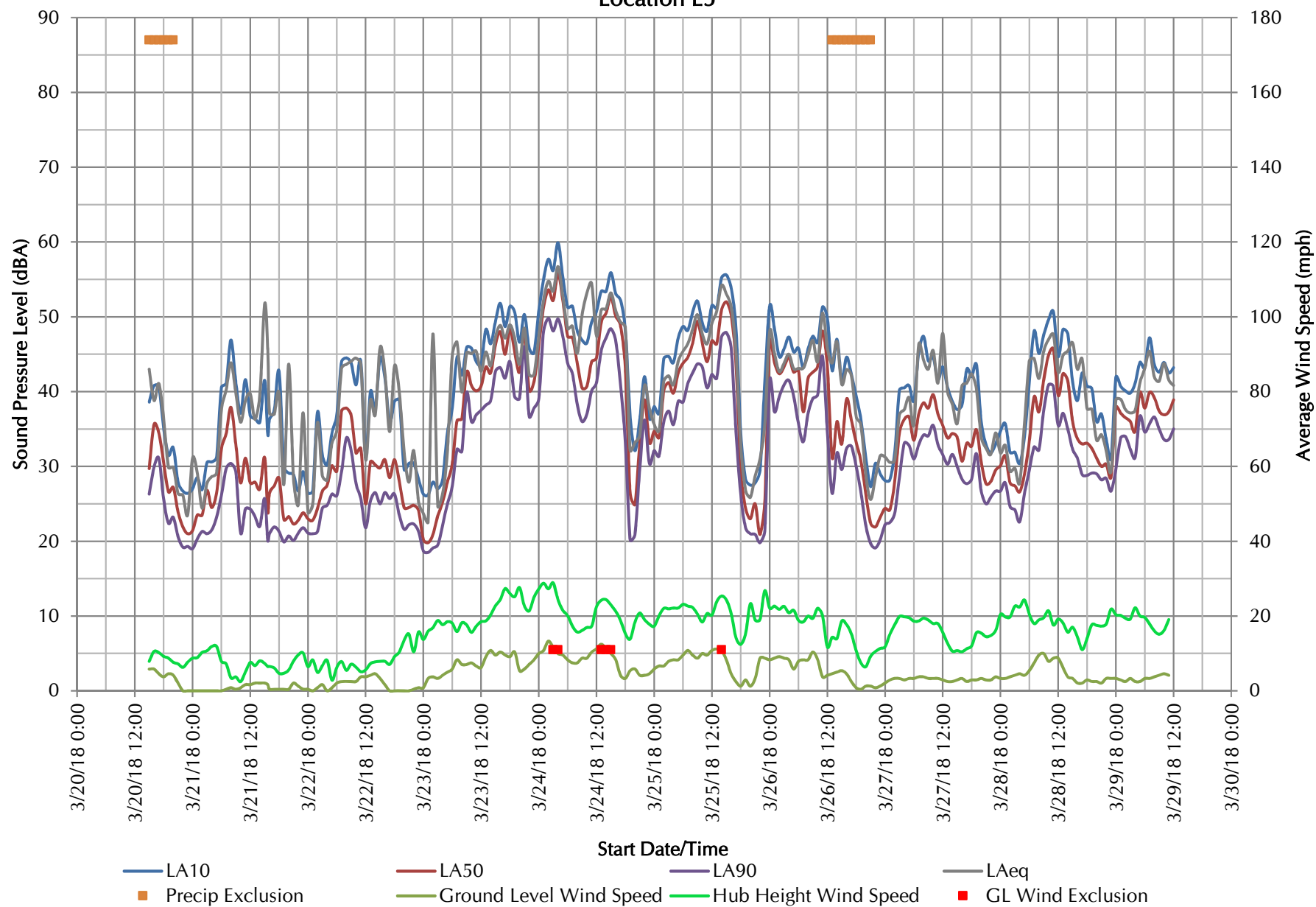


Figure 5-20: Measured / Calculated Hourly C-weighted Sound Pressure Levels (dBC) versus Met Data
Location L5

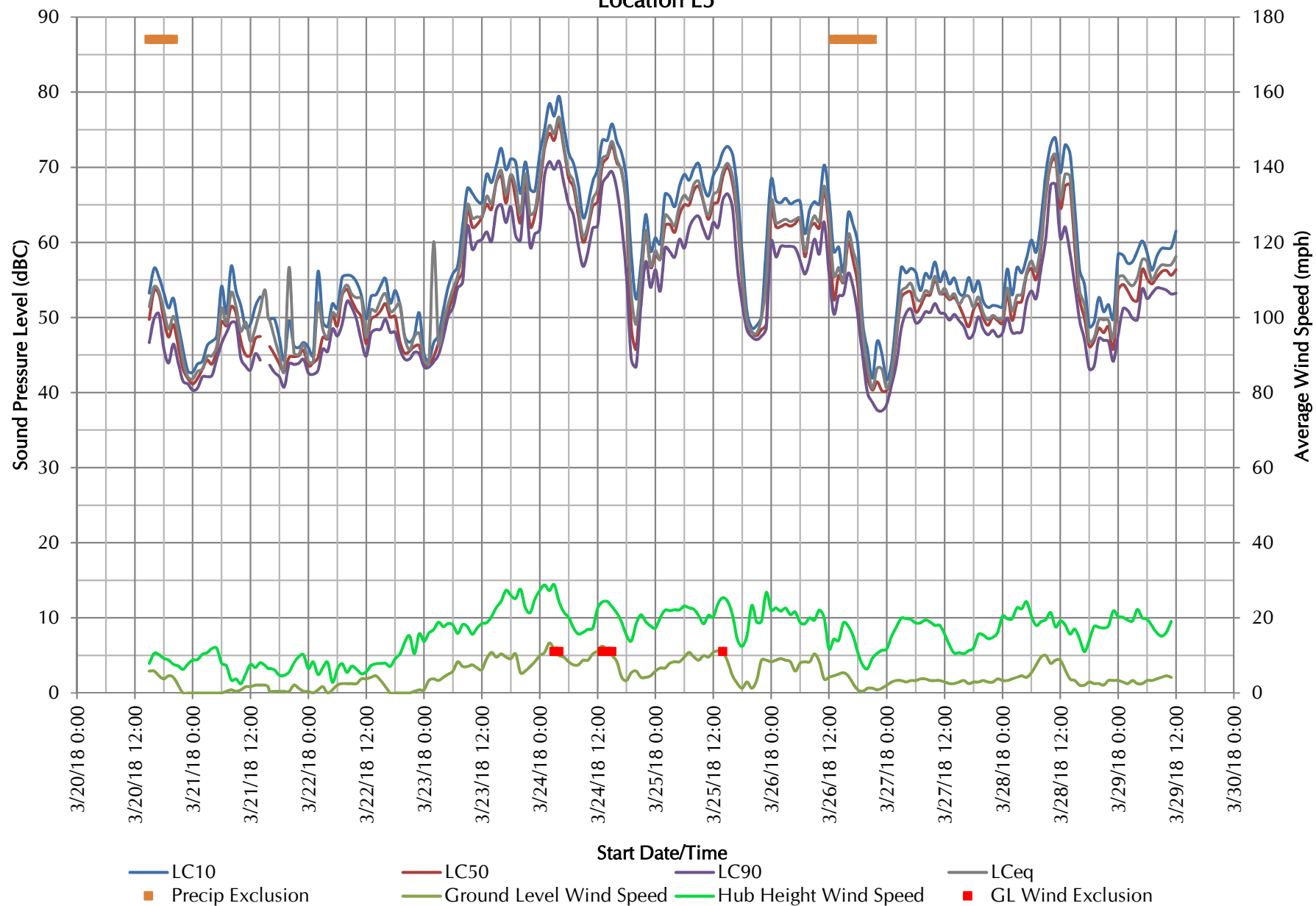


Figure 5-21: Measured Hourly A-weighted Sound Pressure Levels (dBA) versus Met Data
Location L6

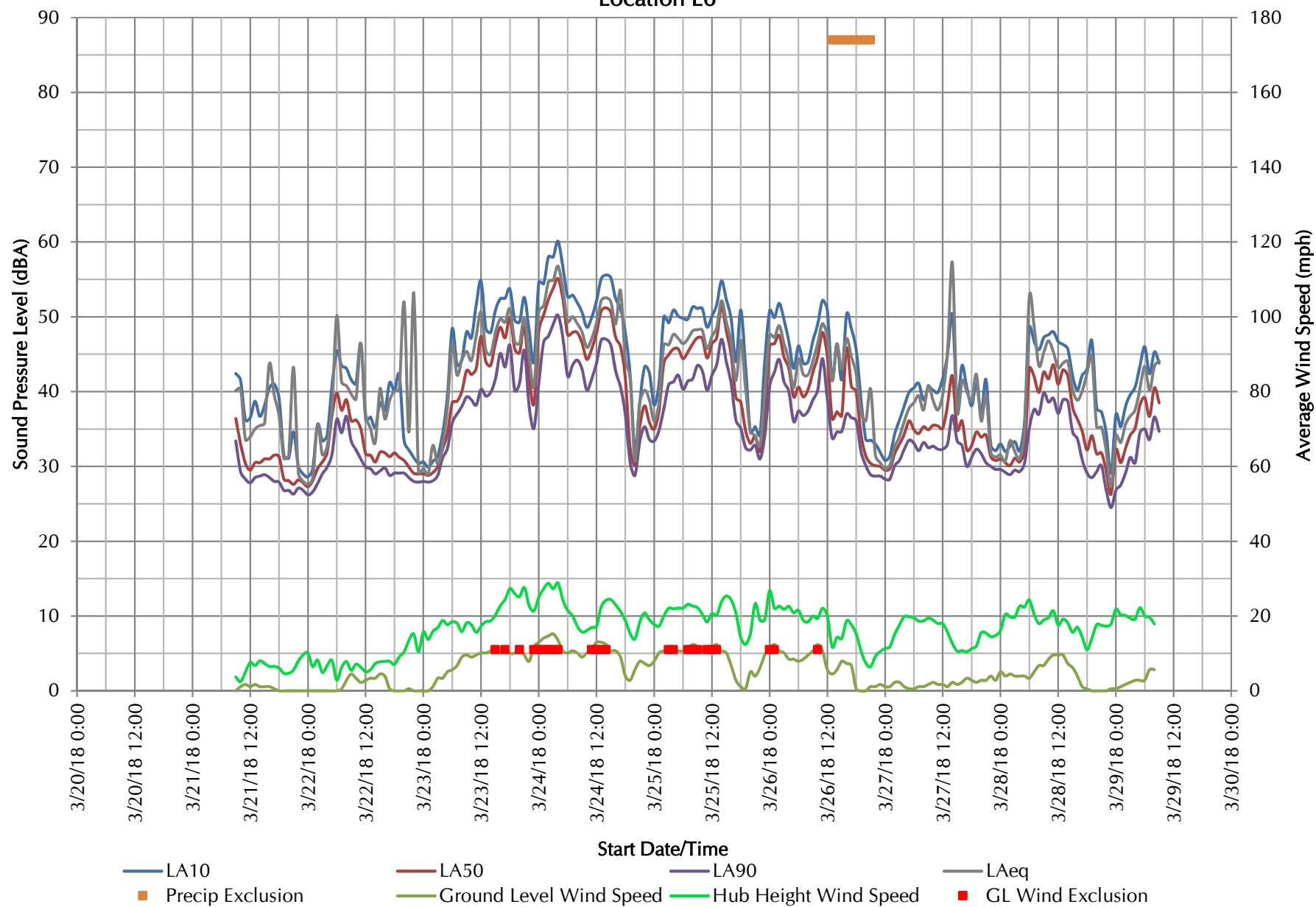
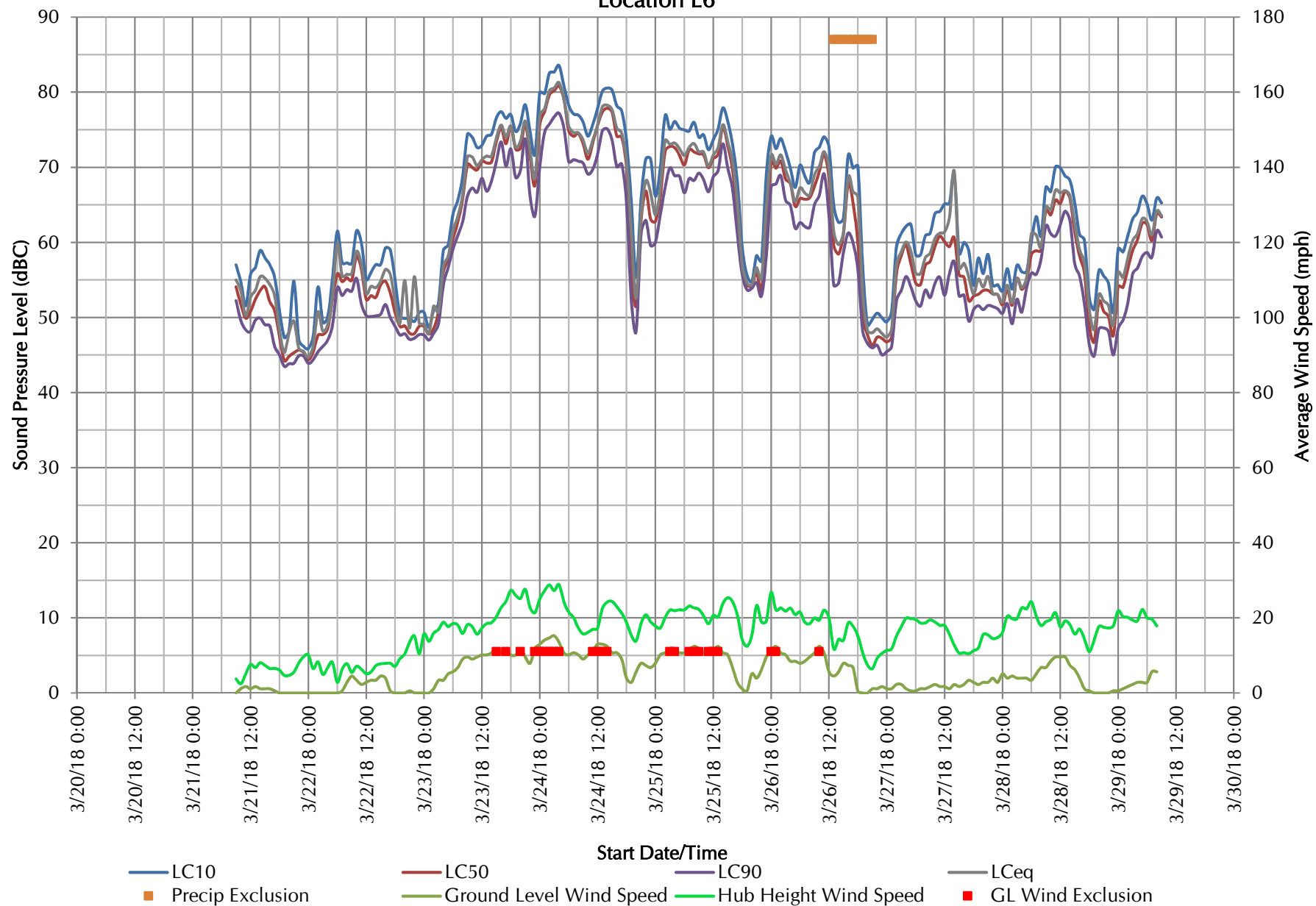


Figure 5-22: Measured / Calculated Hourly C-weighted Sound Pressure Levels (dBC) versus Met Data
Location L6



The L₁₀ A-weighted sound levels ranged from 29 to 57 dBA;

The L₅₀ A-weighted sound levels ranged from 26 to 52 dBA.

5.6.2 *Short-term Sound Levels*

Short-term sound levels were measured during the nighttime and daytime on March 20, 2018 and March 21, 2018, respectively. A brief summary of the measurement results is presented herein.

5.6.2.1 Location S1

Sound levels at Location S1 were influenced by vehicles on Hwy 218, distant vehicles on Hwy 14, occasional distant trains, dogs, and high aircraft. Select results of the 20-minute measurements are shown below and additional details are presented in Appendix C.

The L₁₀ A-weighted sound level was 53 dBA for both the daytime and nighttime measurements;

The L₅₀ A-weighted sound levels were 41 dBA and 28 dBA for the daytime and nighttime measurements, respectively.

5.6.2.2 Location S2

Sound levels at Location S2 were influenced by birds, distant vehicles on local roads, dogs, and high aircraft. Select results of the 20-minute measurements are shown below and additional details are presented in Appendix C.

The L₁₀ A-weighted sound level was 33 dBA for both the daytime and nighttime measurements;

The L₅₀ A-weighted sound levels were 28 dBA and 29 dBA for the daytime and nighttime measurements, respectively.

5.6.3 *Existing Sound Levels Summary*

Existing A-weighted ambient L₅₀ sound pressure levels measured during the program at all locations ranged from 18 to 56 dBA. The existing sound levels measured during nighttime hours (10:00 PM – 7:00 AM) ranged from 18 to 56 dBA. Furthermore, nighttime measurements showed existing ambient L₅₀ sound levels range from 21 to 56 dBA when ground-level wind speeds were at or below 11 mph and winds at hub height corresponded to conditions in the modeling.

In order to calculate ‘total’ sound level (ambient + Project) at the six measurement locations, a single, representative L₅₀ ambient nighttime sound level is assigned to each location. Table 5-3 presents the median nighttime L₅₀ sound pressure level measured at each location when ground-

level wind speeds were at or below 11 mph and winds at hub height⁹ corresponded to conditions in the modeling (Section 6). These sound levels represent the ambient experienced during nighttime hours when the Project would be operating under worse-case sound level conditions. As these are the median sound levels, there will be times under comparable hub height wind speeds when the ambient sound levels at these locations will be lower and other times when the sound levels will be higher.

Table 5-3 Establishment of Ambient Sound Levels at Measurement Locations

Location	Representative (Median) Ambient Nighttime L₅₀ Sound Level (dBA)
L1	44
L2	40
L3	42
L4	35
L5	38
L6	38

⁹ Based on data from a meteorological tower on-site at a height of 89m.

6.0 MODELED SOUND LEVELS

6.1 Sound Sources

6.1.1 *Project Wind Turbines*

The sound level analysis for the Project includes 79 wind turbines. These 79 wind turbines are depicted in Figure 6-1. The array consists of a combination of two (2) potential GE models including the 2.52 MW, 90-meter hub height turbine and the 3.40 MW wind turbine using the 81-meter hub height and 98-meter hub height options. All wind turbines will have Low Noise Trailing Edge (LNTE) blades. Three (3) of the GE 3.40 MW wind turbines at a 98-meter hub height will be operated in NRO Mode 106.

The GE 2.52-116 LNTE wind turbines have a rotor diameter of 116.5 meters. All 11 have a hub height of 90 meters. A technical report from GE¹⁰ was provided to Epsilon which documented the expected sound power levels associated with the GE 2.52-116 LNTE. These sound power levels are defined as “calculated apparent” by the turbine manufacturer and therefore do not include any uncertainty factor.

The GE 3.40-140 wind turbines have a rotor diameter of 140 meters. Eight (8) of these turbines have a hub height of 81 meters, sixty (60) have a hub height of 98 meters. Three (3) of these turbines with a hub height of 98 meters will be operated in NRO Mode 106. A technical report from GE¹¹ was provided to Epsilon which documented the expected sound power levels associated with the GE 3.4-140 (Sierra) LNTE wind turbine. These sound power levels are defined as “calculated apparent” by the turbine manufacturer and therefore do not include any uncertainty factor.

6.1.2 *Project Substation Transformer*

The proposed substation will be located northeast of wind turbine 59 as shown in Figure 6-1. The proposed substation will feature two 150 megavolt-ampere (MVA) transformers. Epsilon estimated octave-band sound power levels using methods outlined in the Electric Power Plant Environmental Noise Guide¹² (EEI Noise Guide) assuming each transformer will have a NEMA noise rating of 74. Table 6-1 summarizes the sound power level data used in the modeling.

¹⁰ General Electric Company, Technical Documentation Wind Turbine Generator Systems 2.5-116 with LNTE – 60 Hz Product Acoustic Specifications, 2016.

¹¹ General Electric Company, Technical Documentation Wind Turbine Generator Systems Sierra 140 – 60 Hz Product Acoustic Specifications, 2021.

¹² Bolt Beranek and Newman Inc. (1984). *Electric Power Plant Environmental Noise Guide* (2nd ed.). Edison Electric Institute.

Table 6-1 Modeled Substation Transformer Sound Power Levels

Maximum Rating	Sound Power Levels per Octave-Band Center Frequency [Hz]									
	Broadband dBA	31.5 dB	63 dB	125 dB	250 dB	500 dB	1k dB	2k dB	4k dB	8k dB
150 MVA	94	90	96	98	93	93	87	82	77	70

6.2 Modeling Methodology

The sound impacts associated with the proposed wind turbines were predicted using the CadnaA sound level calculation software developed by DataKustik GmbH. This software uses the ISO 9613-2 international standard for sound propagation.¹³ The benefits of this software are a more refined set of computations due to the inclusion of topography, ground attenuation, multiple building reflections (if applicable), drop-off with distance, and atmospheric absorption. The CadnaA 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 and summarized in Table 6-2 below.

- ◆ *Project Array:* This analysis is for the wind turbine array dated August 6, 2021. The analysis incorporates a Project boundary provided to Epsilon on June 10, 2021. The proposed Project array is identified in Figure 6-1. The location coordinates and wind turbine types for the array are provided in Appendix D.
- ◆ *Parcel Participation:* A dataset containing participation status information for property parcels in the proximity of the Project was provided by DCW on September 2, 2021. This dataset was utilized to determine participation status for parcels in the vicinity of the Project as shown in Figure 6-1. Color coded shading indicates whether a parcel is participating non-participating.
- ◆ *Modeling Receptor Locations:* A modeling receptor shapefile dataset dated May 5, 2021, was provided by DCW. Epsilon created receptor points of these structures from the centroid of each of these polygons. The resulting 554 receptors were input into the sound level model. All modeling receptors were input as discrete points at a height of 1.5 meters above ground level to mimic the ears of a typical standing person. Participation status for each modeling receptor was assigned as described above. All modeling receptors are

¹³ *Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation*, International Standard ISO 9613-2:1996 (International Organization for Standardization, Geneva, Switzerland, 1996).

identified in Figure 6-2 and receptors are distinguished as either participating or non-participating.

- ◆ *Modeling Grid:* A modeling grid with 20-meter spacing was calculated for the entire Project Area and the surrounding region. The grid was modeled at a height of 1.5 meters above ground level for consistency with the discrete modeling points. This modeling grid allowed for the creation of sound level isolines.
- ◆ *Terrain Elevation:* Elevation contours for the modeling domain were directly imported into CadnaA which allowed for consideration of terrain shielding where appropriate. The terrain height contour elevations for the modeling domain were generated from elevation information derived from the National Elevation Dataset (NED) developed by the U.S. Geological Survey.
- ◆ *Source Sound Levels:* Sound power levels used in the modeling were described in Section 6.1. Documentation from GE provided levels that represent “worst-case” operational sound level emissions for the Project’s proposed wind turbines were applied when available.
- ◆ *Meteorological Conditions:* A temperature of 10°C (50°F) and a relative humidity of 70% was assumed in the model.
- ◆ *Ground Attenuation:* Spectral ground absorption was calculated using a G-factor of 0 which corresponds to “hard ground” consisting of a hard ground surface. The model, consistent with the standard, allows inputs between 0 (hard ground) and 1 (porous ground). This is a conservative approach as the vast majority of the area is actually agricultural.

Octave band sound power levels corresponding to the highest available wind turbine broadband sound power level for each wind turbine type were input into CadnaA to model wind turbine generated L_{eq} sound pressure levels during conditions when worst-case sound power levels are expected. Sound pressure levels were modeled at 554 receptors within the vicinity of the Project. In addition to modeling at discrete points, sound levels were also modeled throughout a large grid of points, each spaced 20 meters apart to allow for the generation of sound level isolines.

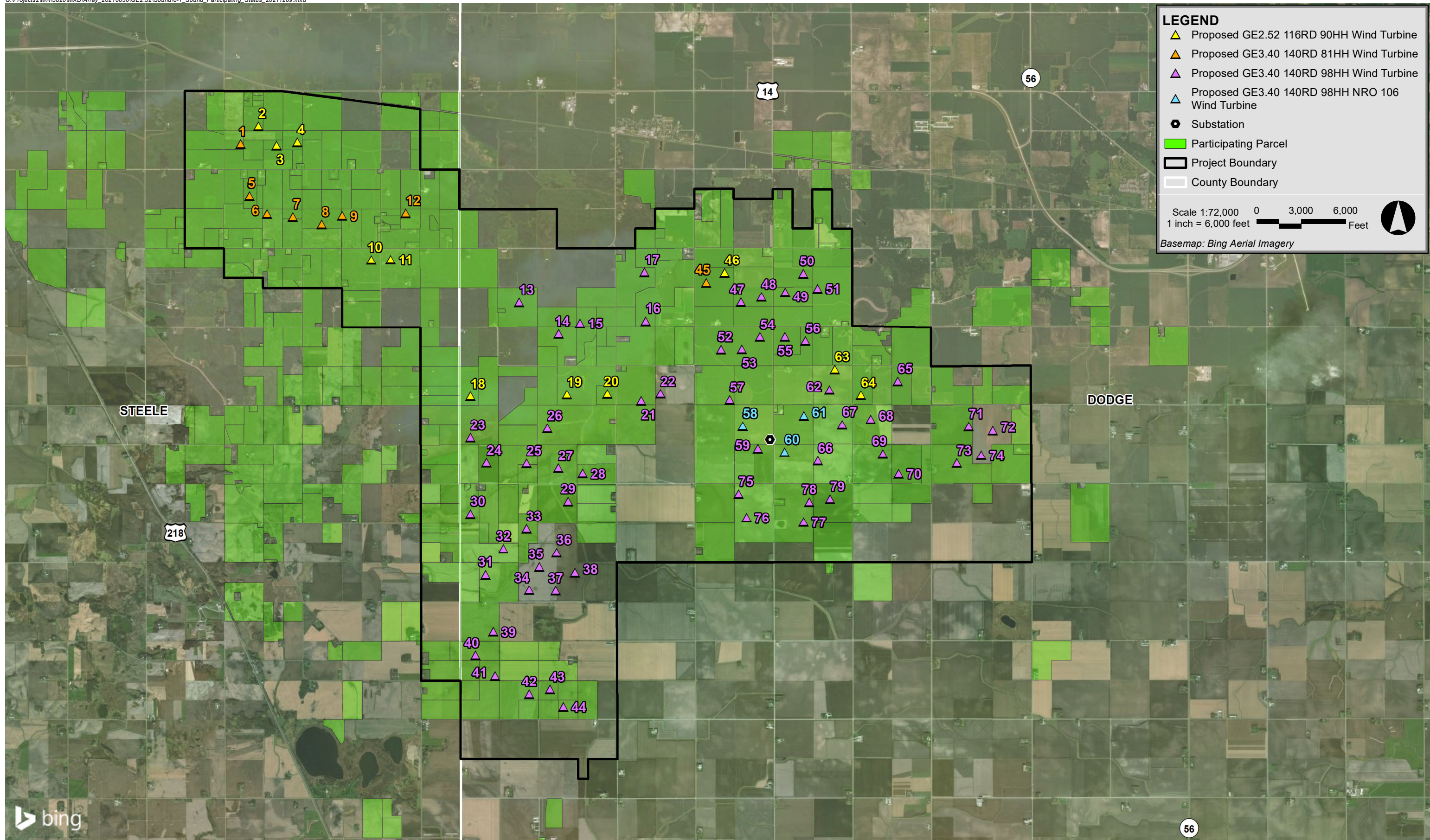
Several modeling assumptions inherent in the ISO 9613-2 calculation methodology, or selected as conditional inputs by Epsilon, were implemented in the CadnaA model to ensure conservative results (i.e., higher sound levels), and are described below:

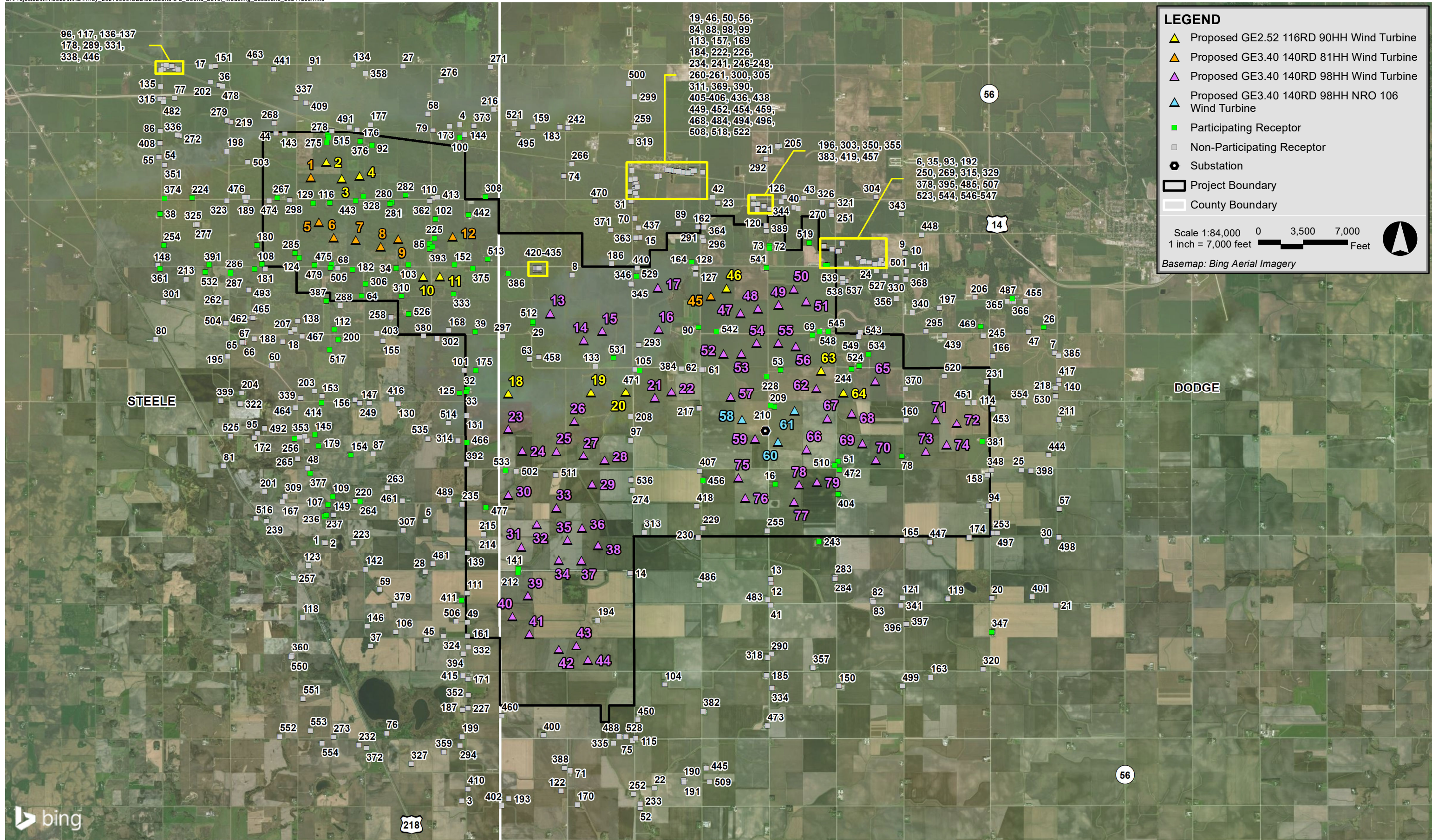
- ◆ All modeled sources were assumed to be operating simultaneously and at the design wind speed corresponding to the greatest sound level impacts.
- ◆ As per ISO 9613-2, the model assumed favorable conditions for sound propagation, corresponding to a moderate, well-developed ground-based temperature inversion, as might occur on a calm, clear night or equivalently downwind propagation.

- ◆ Meteorological conditions assumed in the model (T=10°C/RH=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.

Table 6-2 Summary of Key Sound Level Modeling Inputs

Modeling Parameter	Description / Value
Wind Turbine Array	Provided by DCW
Terrain	U.S.G.S. Data
Wind Turbine Sound Power Levels	GE Specifications Documentation supplemented with alternative GE specifications when data for a particular model were unavailable
Meteorological Conditions	T=10°C / RH=70%
Ground Absorption Factor	0





Dodge County Wind Dodge and Steele Counties, Minnesota

6.3 Sound Level Modeling Results

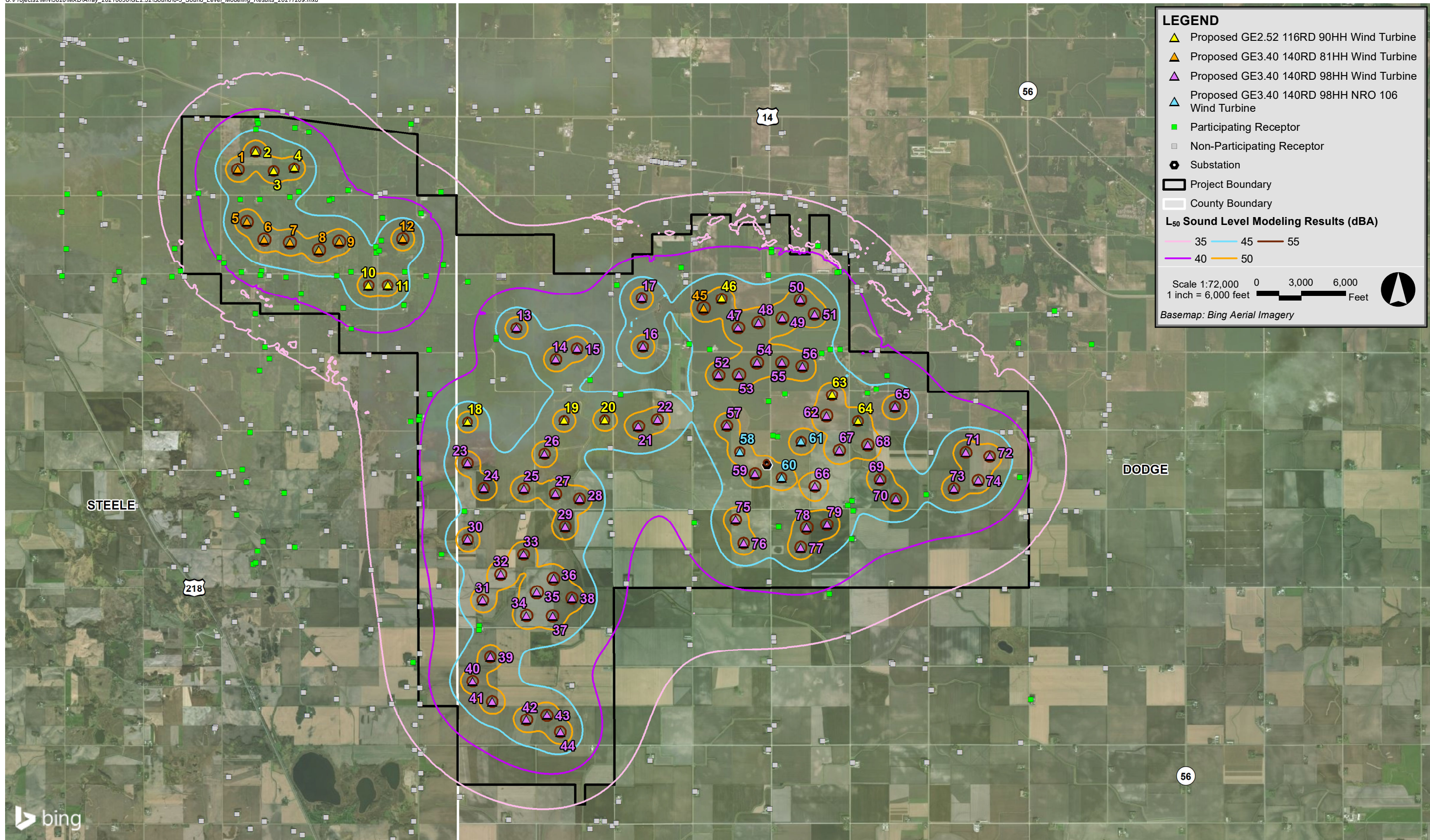
All modeled sound levels, as output from CadnaA are A-weighted equivalent sound levels (L_{eq} , dBA). Based on Epsilon's experience in conducting post-construction sound level measurement programs for wind energy facilities, the equivalent sound level has been comparable to the median (L_{50} , dBA) sound level when the wind turbine sound was prevalent and steady under ideal wind and operational conditions.¹⁴ Therefore, the modeled sound levels may be considered as L_{50} sound levels and directly compared to the Minnesota L_{50} limit.

Table E-1A in Appendix E shows the predicted "Project Only" broadband (dBA) sound levels at the 554 NAC 1 receptors modeled for the Project. The broadband L_{50} sound levels range from 21 to 47 dBA. These sound levels represent the worst-case future L_{50} sound levels produced solely by the Project wind turbines.

The maximum modeled sound level of 47 dBA occurs at 10 receptors, nine (9) of which are participating.

In addition to the discrete modeling points, sound level isolines generated from the modeling grid are presented in Figure 6-3. The sound levels presented in the tables and in the figure do not include any contribution from other existing sound sources in the area. Table E-1B shows the predicted "Project Only" sound levels for sorted from high to low.

¹⁴ Within 0.4 decibels.



7.0 EVALUATION OF SOUND LEVELS

The Project, located within Dodge and Steele Counties, MN, is required to comply with the sound level requirements in Minn. R. Ch. 7030 for Noise Pollution Control. NAC 1 (primarily residential) receptors are protected by the lowest sound level limits of the MPCA. The Project has been designed to comply with the more stringent nighttime limits during both daytime and nighttime periods. The Project does not intend to operate the wind turbines differently between day and night periods. Furthermore, because wind turbine sound is generally steady, the L_{50} (median) sound level is more likely to be affected by wind turbine sound than the L_{10} which is controlled more by unsteady sound. The L_{50} limit is also more restrictive than the L_{10} limit. Therefore, NAC 1 receptors have been evaluated against the L_{50} sound level limit of 50 dBA in this analysis. This is a total sound level limit which includes sound from the Project and existing sound sources.

7.1 Measurement Locations

Table 7-1 below presents an evaluation of total (wind turbine + ambient) sound levels at the six measurement locations utilized in the pre-construction measurement program. The nighttime L_{50} ambient sound levels from Table 5-3 has been reproduced in these tables. These sound levels represent the ambient experienced during nighttime hours when the Project would be operating under worst-case sound level conditions. As these are median sound levels, there will be times under comparable hub height wind speeds when the ambient sound levels will be lower and other times when the sound levels will be higher. Modeled Project Only L_{50} sound levels for the respective modeling receptor locations are provided in the tables. The non-wind-turbine ambient sound levels are logarithmically added to the modeled sound levels to determine a representative total nighttime L_{50} sound level for each measurement location. The values in Tables 7-1 demonstrate compliance with the MPCA L_{50} nighttime total sound level limit of 50 dBA. However, non-wind-turbine ambient sound levels in the Project region may fluctuate due to sound sources such as ground-level winds, vehicular traffic, birds, and vegetation rustle, all of which have the potential to cause total sound levels to exceed the limit at times.

Table 7-1 Evaluation of Total Sound Levels at Measurement Locations

Measurement Location	Representative (Median) Ambient Nighttime L ₅₀ Sound Level (dBA) ¹	Modeled Project Only L ₅₀ Sound Level (dBA) ²	Total L ₅₀ Sound Level (dBA) ³	Meets MPCA Nighttime L ₅₀ Limit?
L1	44	42	46	YES
L2	40	43	45	YES
L3	42	47	48	YES
L4	35	47	47	YES
L5	38	45	46	YES
L6	38	42	43	YES

Notes:

1. As presented in Table 5-3
2. Modeled at receptors #278, 477, 16, 69, 531, and 381 for Locations L1 through L6 respectively.
3. Sound pressure levels rounded to the nearest whole decibel are shown. Sound level addition was performed with greater precision.

7.2 Modeling Locations

Since ambient sound levels in the Project area vary, modeled Project-Only sound levels have been combined with a range of non-wind-turbine ambient sound levels in order to evaluate the Minnesota limit of 50 dBA. These total L₅₀ sound levels are presented in Table F-1 in Appendix F.

A review of Table E-1B in Appendix E shows the highest Project-Only L₅₀ sound level to be 47 dBA at receptor #209. This is a participating receptor. Accordingly, total sound levels (Project + non-wind-turbine ambient) will meet the Minnesota limit of 50 dBA when non-wind-turbine ambient sound levels are less than or equal to 47 dBA.¹⁵ The predicted total sound levels are shown for when ambient (non-wind-turbine) L₅₀ sound levels are 35, 40, 45, 47, and 50 dBA. As shown in Section 5.0, ambient nighttime sound levels can exceed 50 dBA. Non-wind-turbine ambient sound levels can fluctuate due to sound sources such as ground-level winds, vehicular traffic, birds, and vegetation rustle, all of which have the potential to cause ambient sound levels to be equal to or exceed the MPCA L₅₀ nighttime limit of 50 dBA. In these instances, the increase to the non-wind-turbine ambient sound level will be zero to two decibels since the highest modeled Project-Only sound level is 47 dBA. Under conditions where two sound levels have the same or very similar characteristics, a 2-dBA change is imperceptible to the average person.

¹⁵ The maximum modeled Project Only L₅₀ sound level is 47.0 dBA. When the 47.0 dBA is combined with a hypothetical ambient sound level of 47.0 dBA, the resulting sound level is 50.0 dBA (47.0 dBA + 47.0 dBA = 50.0 dBA).

8.0 LOW FREQUENCY AND INFRASOUND

An evaluation of low frequency (LF) and infrasound levels from a wind energy center at receptors is not required by the State of Minnesota. However, a discussion of LF and infrasound, as it pertains to wind turbines, is provided below for informational purposes.

Low frequency (LF) and infrasound are present in the environment due to other sources besides wind turbines. For example, refrigerators, air conditioners, and washing machines generate infrasound and low frequency sound as do natural sources such as ocean waves. The frequency range of low frequency sound is generally from 20 Hz to 200 Hz, and the range below 20 Hz is often described as “*infrasound*”. However, audibility can extend to frequencies below 20 Hz if the energy is high enough. Since there is no sharp change in hearing at 20 Hz, the division between “low-frequency sound” and “infrasound” should only be considered “practical and conventional.” The threshold of hearing is standardized for frequencies down to 20 Hz.¹⁶ Based on extensive research and data, Watanabe and Moeller have proposed normal hearing thresholds for frequencies below 20 Hz.¹⁷ These sound levels are so high that infrasound is generally considered inaudible. For example, the sound level at 8 Hz would need to be 100 dB to be audible.

A detailed infrasound and low frequency noise measurement program of wind turbines was conducted from 2013-2015 by the Ministry for the Environment, Climate and Energy of the Federal State of Baden-Wuerttemberg, Germany.¹⁸ The conclusions of the German study were:

“Infrasound and low-frequency noise are an everyday part of our technical and natural environment. Compared with other technical and natural sources, the level of infrasound caused by wind turbines is low. Already at a distance of 150 m (~500 ft), it is well below the human limits of perception. Accordingly, it is even lower at the usual distances from residential areas. Effects on health caused by infrasound below the perception thresholds have not been scientifically proven. Together with the health authorities, we in Baden-Württemberg have come to the conclusion that adverse effects relating to infrasound from wind turbines cannot be expected on the basis of the evidence at hand.”

¹⁶ Acoustics - Normal equal-loudness-level contours, International Standard ISO 226:2003, International Organization for Standardization, Geneva, Switzerland, (2003).

¹⁷ T. Watanabe, and H. Moeller, “Low Frequency Hearing Thresholds in Pressure Field and in Free Field”, J. Low Frequency Noise and Vibration, 9(3), 106-115, (1990).

¹⁸ *Low frequency noise incl. infrasound from wind turbines and other sources*, LUBW, Baden-Wuerttemberg, Germany, September 2016.

The Massachusetts Department of Environmental Protection (MA DEP) and the Massachusetts Department of Public Health commissioned an expert panel who found that: “Claims infrasound from wind turbines directly impacts the vestibular system have not been demonstrated scientifically. Available evidence shows that the infrasound levels near wind turbines cannot impact the vestibular system.”¹⁹

Health Canada, in collaboration with Statistics Canada, conducted one of the most extensive studies to understand the impacts of wind turbine noise to-date.²⁰ A cross-section epidemiological study was carried out in 2013 in the provinces of Ontario and Prince Edward Island on randomly selected participants living near and far from operating wind turbines. Many peer-reviewed publications have been written based on the Health Canada research, including an analysis of low frequency and infrasound data. For example, Keith et al concluded that there was no advantage of using C-weighting to measure low frequency sound since the relationship between A-weighting and C-weighting are so highly correlated.²¹ In other words, acceptable A-weighted limits also eliminate low frequency and infrasound impacts.

Low frequency and infrasound have also been studied extensively in Japan. Tachibana et al conducted extensive measurements of 34 wind farms nationwide and concluded that infrasound from wind turbines is not audible/sensible, and that wind turbine noise is not a problem in the infrasound region.²²

As noted in the 2011 NARUC report, “the widespread belief that wind turbines produce elevated or even harmful levels of low frequency and infrasonic sound is utterly untrue as proven repeatedly and independently by numerous investigators.”²³

¹⁹ *Wind Turbine Health Impact Study: Review of Independent Expert Panel*, Massachusetts Department of Environmental Protection and Massachusetts Department of Public Health, January 2012.

²⁰ Health Canada website: <http://www.hc-sc.gc.ca/ewh-semt/noise-bruit/turbine-eoliennes/summary-resume-eng.php>

²¹ *Wind turbine sound pressure level calculations at dwellings*, S. E. Keith et al, J. Acoustical Society of America, 139(3), March 2016.

²² *Nationwide field measurements of wind turbine noise in Japan*, H. Tachibana et al, Noise Control Engineering Journal, 62(2), March-April 2014.

²³ *Assessing Sound Emissions from Proposed Wind Farms & Measuring the Performance of Completed Projects*, NARUC, prepared by Hessler Associates, Inc., October 2011.

9.0 CONCLUSIONS

A comprehensive sound level modeling assessment was conducted for the Project. In addition, ambient sound levels were measured to characterize the existing background sound levels within the area.

Under conditions resulting in non-wind-turbine ambient sound levels of 47 dBA or less, total sound levels (Project + non-wind-turbine ambient) will meet the MPCA limit of 50 dBA. As shown in Section 5.0, ambient nighttime sound levels can exceed 50 dBA. Non-wind-turbine ambient sound levels can fluctuate due to sound sources such as ground-level winds, vehicular traffic, birds, and vegetation rustle, all of which have the potential to cause non-wind turbine ambient sound levels to be equal to or exceed the MPCA L_{50} nighttime limit of 50 dBA. In these instances, the increase to the non-wind turbine ambient sound level due to the Project will be zero to two decibels since the highest modeled Project-Only sound level is 47 dBA. Under conditions where two sound levels have the same or very similar characteristics, a 2-dBA change is imperceptible to the average person.

Appendix A

DCW Sound Level Measurement Protocol

Dodge County Wind Project Dodge and Steele Counties, MN

Sound Level Measurement Protocol

March 9, 2018

Introduction

This protocol describes the methodology involved in measuring the ambient sound levels for the Dodge County Wind (“DCW”) Project. This Project is currently being developed by NextEra Energy Resources, LLC (NEER). DCW will be a wind power generation facility consisting of approximately 70 wind turbines located within Dodge and Steele Counties, Minnesota. Based on a preliminary 170MW layout dated December 12, 2017, the proposed wind turbines will be a combination of GE 1.7 and GE 2.5 megawatt (MW) wind turbines. The GE 1.7 MW wind turbines have a hub height of 80 meters and a rotor diameter of 103 meters. The GE 2.5 MW wind turbines have a hub height of 89 meters and a rotor diameter of 127 meters. Locations of the proposed wind turbines in the 170MW layout dated December 12, 2017 are presented in Figure 1.

As part of this effort, Epsilon will conduct a sound level measurement program to document existing ambient sound levels in the vicinity of the DCW Project. The purpose of this protocol is to describe the measurement methodology, identify acoustical and meteorological equipment proposed, and provide a schedule. Procedures identified in the Guidance for Large Wind Energy Conversion System, Noise Study Protocol and Report (“LWECS Guidance”) published by the Minnesota Department of Commerce (“DOC”), Energy Facility Permitting, dated October 8, 2012 were used in the development of this measurement protocol.

Sound Level Measurement Methodology

The Guidance advises measurement at a minimum of three (3) locations within the Project area where wind turbines are either not constructed or not operating to represent ambient sound level conditions. Broadband A-weighted (dBA) and one-third octave-band (dB) sound levels will be measured at a total of 8 locations in Dodge and Steele Counties to collect pre-construction sound level data. Six (6) of these locations will be long-term measurement locations within the Project Boundary. The long-term sound level measurement locations were selected based on LWECS Guidance, modeled sound levels, proximity of residential locations to the wind turbines, wind turbine types, and proximity to other measurement locations in the measurement program. Per the LWECS Guidance document, one (1) location has been selected to represent the receptor with the worst-case modeled sound level based on a preliminary modeling analysis.

The six (6) preferred long-term locations¹ and eight (8) alternate locations² in Dodge and Steele Counties are shown in Figure 1 and briefly described below. All long-term locations are proposed to be at a residence (exterior) with some on participating parcels and others on non-participating parcels. Non-participating homeowners may be unwilling to grant permission at a particular location; if permission is not granted, measurements will be conducted at an alternate location when practical. In addition, the alternate location may be selected if site conditions realized during setup warrant relocation. At the time of this Protocol, permission has not been obtained at the measurement locations. Additional alternative locations may be selected and/or the number of measurement locations reduced if permission cannot be obtained prior to the commencement of the measurement program.

Preferred Locations:

- ◆ **Location L1P:** Steele Co – One of three non-participating residences highlighted on the figure
- ◆ **Location L2P:** Steele Co – Participating Residence
- ◆ **Location L3P:** Dodge Co – Participating Residence
 - Highest modeled sound level at a participating residence
- ◆ **Location L4P:** Dodge Co – Non-participating Residence
 - Highest modeled sound level
- ◆ **Location L5P:** Dodge Co – Participating Residence
- ◆ **Location L6P:** Dodge Co – One of two non-participating residences highlighted on the figure

Alternate Locations:

- ◆ **Location L1A1:** Steele Co – Participating Residence
- ◆ **Location L1A2:** Steele Co – Participating Residence
- ◆ **Location L2A:** Steele Co – Participating Residence
- ◆ **Location L3A:** Steele Co – Participating Residence
- ◆ **Location L4A:** Dodge Co – Participating Residence
- ◆ **Location L5A:** Dodge Co – Participating Residence
- ◆ **Location L6A1:** Dodge Co – Participating Residence
- ◆ **Location L6A2:** Dodge Co – Participating Residence

Long-term measurements will be supplemented with short-term measurements at two (2) locations west of the Project Boundary. One daytime and one nighttime measurement will be taken for 20-minutes during environmental conditions with no precipitation and with ground-level wind speeds less than 11 mph (5 m/s). Sound observations will be made during both periods at each location by Epsilon staff. Publically accessible locations will be utilized and are briefly described below and shown on Figure 1.

- ◆ **Location S1:** Steele Co

¹ Preferred long-term measurement locations are identified with a “P” in their ID.

² Alternate long-term measurement locations are identified with an “A” in their ID.

- o Intersection of US Highway 218 and ST 73rd St
- ◆ **Location S2: Steele Co**
 - o Intersection of SE 34th St and SE 58th St

Measurement Equipment

The sound level measurements will be made using Larson Davis (LD) model 831 sound level meters (or equivalent). The model meets “Type 1 Precision” requirements set forth in American National Standards Institute (ANSI) S1.4-1983 standard for sound level meters. The meters will log values of various broadband A-weighted (dBA) sound level measurement parameters including the L_{eq} , L_{max} , L_{10} , L_{50} , and L_{90} . Long-term meters will be programmed to log this statistical data on an hourly basis and short-term meters will log the complete 20-minute measurements. The LWECs Guidance also requires C-weighted data collection. This will be calculated through post-processing analysis since simultaneous A-weighted and C-weighted collection is not possible with commonly available commercial instrumentation. One-minute time history data will be collected by the long-term meters and 1-second time history data will be collected by the short-term meter. The microphones will be tripod-mounted at a height of 1.5 meters (5 feet) above ground. A 7-inch windscreen will be placed on all microphones.

The measurement equipment will be calibrated in the field before and after the survey with the manufacturer’s acoustical calibrator which meets the standards of IEC 942 Class 1L and ANSI S1.40-1984. All calibrations will be within ± 1.0 dB from the most recent calibration otherwise the data collected during that period will be discarded. The meters are calibrated and certified as accurate to standards set by the National Institute of Standards and Technology by an independent laboratory within the past 12 months.

Since this is a wind turbine project, the wind speed during the noise study is significant in importance. The ground-level wind speed has a direct influence on the ambient sound levels. Ground-level wind speed data will be continuously measured at all long-term sound level measurement locations for the duration of the study per the LWECs Guidance. A HOBO H21-002 micro-weather station (or similar) will be used at the monitoring locations. The wind sensors will be mounted at microphone height (1.5 meters) per the LWECs Guidance and log data every hour. This wind instrument has a measurement range of 0 to 45 m/s (100 mph) and an accuracy of ± 1.1 m/s (2.4 mph). The starting threshold is ≤ 1 m/s (2.2 mph). For the short-term measurements where micro-weather station utilization is not practical, wind speeds will be measured for a subset of the measurement period with a hand-held Davis Instruments TurboMeter electronic wind speed indicator.

Additional meteorological parameters, e.g. temperature, precipitation, etc., will be collected through additional instrumentation deployed by Epsilon and/or will be downloaded from the closest National Weather Service station for the entire program.

In order to allow for the characterization of background sound levels during different wind regimes, which may be useful once the wind energy facility is operational, it would be necessary to know the wind speeds at higher heights (hub height, if possible) during the background sound level measurement program. If these data are available during the program, they will be incorporated into the report.

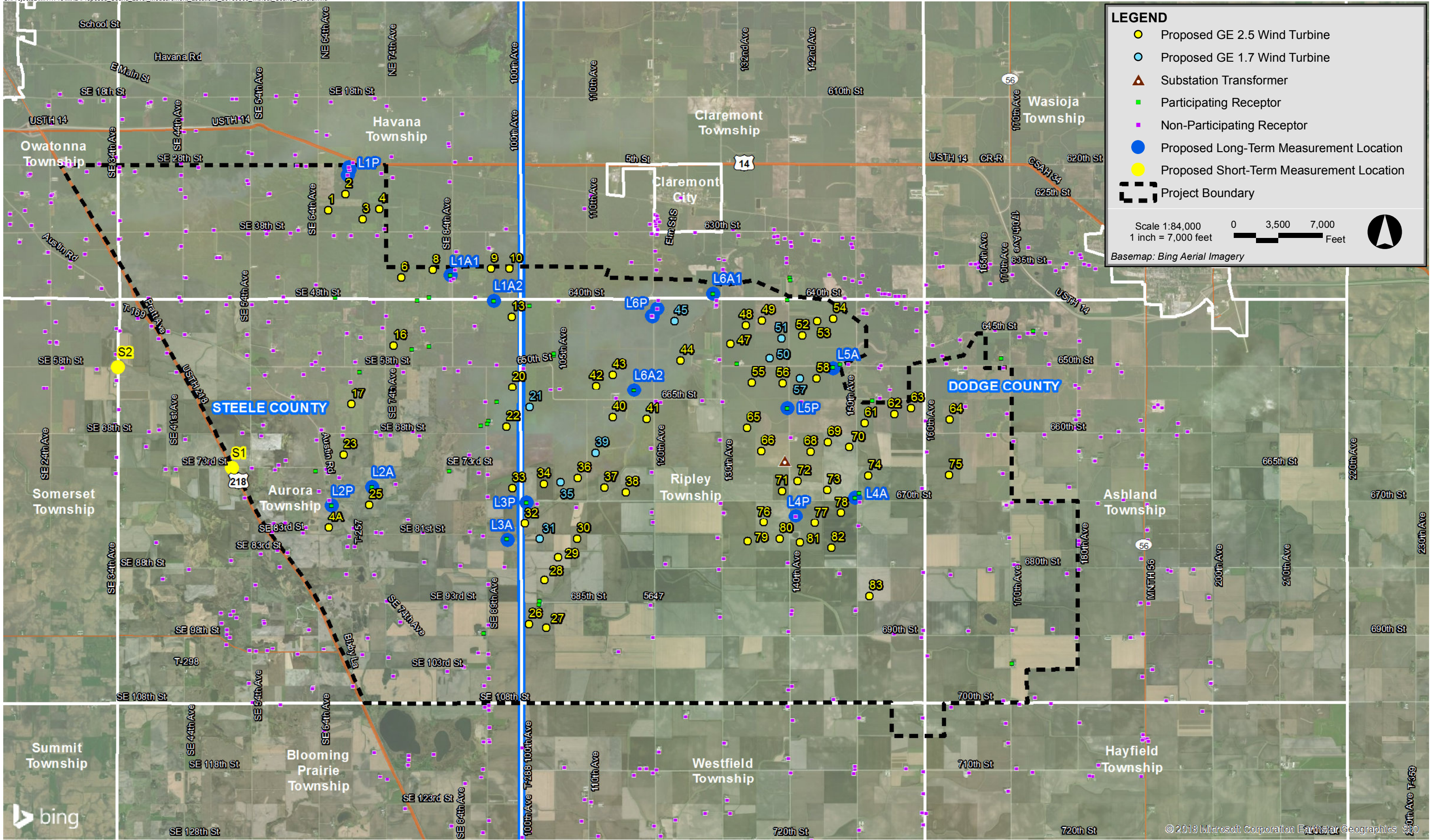
Schedule

The sound level measurement program is planned to commence on Monday, March, 19, 2018. All equipment is expected to be operating by no later than Wednesday, March 21. Following the approach outlined in the Guidance document, the long-term measurements will last for at least 1 week. The equipment will not be staffed continuously; however, observations at the long-term locations will be made four times during the program (see below). The field technician will leave the site on March 21 or March 22 and return on March 28 or March 29. Continuous A-weighted measurements (24 hours/day) will be made concurrently at all long-term measurement locations over the approximately 7-day period. The observation periods will be as follows:

- ◆ Upon deployment (daytime),
- ◆ During the 1st night when all monitors are running (nighttime),
- ◆ During the day after the setup and/or night observations, and
- ◆ During the pick-up (daytime).

Results/Report

The LWECS document will be used as a guide for sound level data processing, result summaries, and the report structure. No extraneous noise events will be excluded from the data. Hourly periods of recorded precipitation and periods with high wind speeds will be removed from the datasets. The percentage of the excluded data will be presented. Sound levels will be presented in graphical format as they were measured in relation to wind speed over the measurement duration. The report will include various figures and tables to effectively summarize the results of the measurement program.



Dodge County Wind Dodge & Steele Counties, MN

Appendix B

NCEI Meteorological Data: NWS Station – Dodge Center Airport, Dodge Center, MN

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMPF	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMPF	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 0:15	FM-15	OVC:08 80	10		34	1	31	-0.8	25	-4	70	6	20		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 0:35	FM-15	OVC:08 80	10		32	0	29	-1.4	25	-4	75	5	20		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 0:55	FM-15	OVC:08 80	10		34	1	31	-0.8	25	-4	70	6	30		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 1:15	FM-15	OVC:08 80	10		34	1	31	-0.8	25	-4	70	6	40		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 1:35	FM-15	OVC:08 80	10		34	1	31	-0.8	25	-4	70	6	30		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 1:55	FM-15	SCT:04 70 OVC:08 80	10		32	0	29	-1.4	25	-4	75	3	360		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 2:15	FM-15	BKN:07 70 OVC:08 80	10		32	0	29	-1.4	25	-4	75	6	20		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 2:35	FM-15	BKN:07 70 OVC:08 80	10		32	0	29	-1.4	25	-4	75	7	30		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 2:55	FM-15	SCT:04 70 OVC:08 80	10		32	0	29	-1.4	25	-4	75	5	40		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 3:15	FM-15	OVC:08 80	10		32	0	30	-1	27	-3	80	6	60		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 3:35	FM-15	SCT:04 90	10		32	0	28	-2.2	21	-6	64	8	80		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 3:55	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	10	80		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 4:15	FM-15	CLR:00	10		30	-1	26	-3.2	19	-7	64	9	80		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 4:35	FM-15	CLR:00	10		30	-1	26	-3.2	19	-7	64	8	70		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 4:55	FM-15	CLR:00	10		30	-1	26	-3.2	19	-7	64	9	80		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 5:15	FM-15	CLR:00	10		30	-1	26	-3.2	19	-7	64	9	80		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 5:35	FM-15	CLR:00	10		30	-1	26	-3.2	19	-7	64	10	80		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 5:55	FM-15	SCT:04 50	10		30	-1	26	-3.2	19	-7	64	8	80		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 6:15	FM-15	SCT:04 50	10		28	-2	24	-4.4	16	-9	59	10	70		28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 6:35	FM-15	CLR:00	10		28	-2	24	-4.4	16	-9	59	9	90		28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 6:55	FM-15	CLR:00	10		28	-2	24	-4.4	16	-9	59	8	90		28.62					30.01
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 7:15	FM-15	CLR:00	10		28	-2	24	-4.4	16	-9	59	7	80		28.62					30.01
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 7:35	FM-15	CLR:00	10		28	-2	24	-4.4	16	-9	59	9	60		28.62					30.01
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 7:55	FM-15	SCT:04 46 BKN:07 50	10		28	-2	24	-4.4	16	-9	59	8	70		28.62					30.01
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 8:15	FM-15	BKN:07 35 OVC:08 43	10		28	-2	24	-4.4	16	-9	59	8	80		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 8:35	FM-15	OVC:08 35	10		28	-2	24	-4.4	16	-9	59	7	70		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 8:55	FM-15	SCT:04 22 BKN:07 28 OVC:08 35	5	-SN:03 SN:71	28	-2	25	-4	18	-8	64	7	40		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 9:15	FM-15	OVC:08 26	10	-SN:03 SN:71	27	-3	24	-4.4	18	-8	69	7	50		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 9:35	FM-15	BKN:07 26	7		28	-2	24	-4.4	16	-9	59	9	60		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 9:55	FM-15	SCT:04 24	7		28	-2	25	-4	18	-8	64	7	110		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 10:15	FM-15	SCT:04 20	7	-SN:03 SN:71	28	-2	25	-4	18	-8	64	3	90		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 10:35	FM-15	SCT:04 20	7		28	-2	25	-4	18	-8	64	7	80		28.64					30.03
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 10:55	FM-15	SCT:04 14	7		28	-2	25	-4	18	-8	64	7	60		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 11:15	FM-15	SCT:04 14	10		28	-2	25	-3.9	19	-7	69	8	60		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 11:35	FM-15	CLR:00	7	UP:09	28	-2	25	-3.9	19	-7	69	5	20		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 11:55	FM-15	SCT:04 10	4	-SN:03 SN:71	28	-2	25	-3.9	19	-7	69	6	50		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 12:15	FM-15	SCT:04 8 SCT:04 13	4	-SN:03 SN:71	28	-2	26	-3.5	21	-6	74	6	60		28.62					30.01
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 12:35	FM-15	SCT:04 15	5	-SN:03 SN:71	28	-2	26	-3.5	21	-6	74	5	10		28.62					30.01
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 12:55	FM-15	SCT:04 15	7	-SN:03 SN:71	28	-2	26	-3.2	23	-5	80	5	20		28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 13:15	FM-15	SCT:04 15	10		28	-2	26	-3.5	21	-6	74	6	30		28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 13:35	FM-15	SCT:04 17	5	-SN:03 SN:71	28	-2	26	-3.2	23	-5	80	7	30		28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 13:55	FM-15	SCT:04 15	4	-SN:03 SN:71	28	-2	26	-3.2	23	-5	80	7	10		28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 14:15	FM-15	BKN:07 15	3	UP:09	28	-2	27	-2.8	25	-4	86	7	20		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 14:35	FM-15	BKN:07 15	3	UP:09	28	-2	27	-2.8	25	-4	86	7	10		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 14:55	FM-15	SCT:04 11 BKN:07 17	4	UP:09	28	-2	27	-2.8	25	-4	86	7	30		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 15:15	FM-15	SCT:04 15 BKN:07 19	4	UP:09	28	-2	27	-2.8	25	-4	86	9	20		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 15:35	FM-15	BKN:07 15	4	UP:09	28	-2	27	-2.8	25	-4	86	8	40		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 15:55	FM-15	SCT:04 15 SCT:04 20	4	UP:09	28	-2	27	-2.8	25	-4	86	10	30		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92																					

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMP	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMP	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 16:55	FM-15	SCT:04 19	10	UP:09	28	-2	26	-3.2	23	-5	80	8	20	28.61					29.99	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 17:15	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	9	10	28.61					29.99	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 17:35	FM-15	CLR:00	10	UP:09	28	-2	25	-3.9	19	-7	69	9	30	28.61					29.99	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 17:55	FM-15	CLR:00	10	UP:09	28	-2	25	-3.9	19	-7	69	9	20	28.61					30	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 18:15	FM-15	CLR:00	10	UP:09	28	-2	25	-3.9	19	-7	69	8	30	28.61					30	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 18:35	FM-15	CLR:00	10	UP:09	28	-2	25	-3.9	19	-7	69	8	30	28.61					30	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 18:55	FM-15	CLR:00	10	UP:09	28	-2	26	-3.5	21	-6	74	9	20	28.62					30.01	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 19:15	FM-15	SCT:04 36 SCT:04 42	10	UP:09	28	-2	26	-3.5	21	-6	74	7	40	28.62					30.01	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 19:35	FM-15	SCT:04 27 BKN:07 34 OVC:08 42	7	SN:03 SN:71	27	-3	25	-3.9	21	-6	80	6	30	28.63					30.02	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 19:55	FM-15	BKN:07 23 BKN:07 29 OVC:08 40	7	UP:09	27	-3	25	-3.9	21	-6	80	6	20	28.63					30.02	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 20:15	FM-15	SCT:04 23 SCT:04 30 BKN:07 40	10	UP:09	27	-3	25	-3.9	21	-6	80	6	20	28.63					30.02	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 20:36	FM-15	SCT:04 35	10		27	-3	25	-3.9	21	-6	80	6	10	28.63					30.02	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 20:55	FM-15	CLR:00	10		27	-3	24	-4.2	19	-7	74	0	0	28.63					30.02	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 21:15	FM-15	CLR:00	10		27	-3	25	-3.9	21	-6	80	0	0	28.64					30.03	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 21:35	FM-15	CLR:00	10		27	-3	24	-4.2	19	-7	74	3	330	28.64					30.03	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 21:55	FM-15	CLR:00	10		27	-3	24	-4.2	19	-7	74	3	330	28.64					30.03	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 22:15	FM-15	CLR:00	10		27	-3	24	-4.2	19	-7	74	5	330	28.64					30.03	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 22:35	FM-15	CLR:00	10		27	-3	24	-4.2	19	-7	74	3	330	28.64					30.03	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 22:55	FM-15	CLR:00	10		27	-3	24	-4.2	19	-7	74	3	340	28.65					30.04	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 23:15	FM-15	CLR:00	10		27	-3	24	-4.2	19	-7	74	5	350	28.65					30.04	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 23:35	FM-15	CLR:00	10		27	-3	24	-4.2	19	-7	74	5	350	28.65					30.04	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 23:55	FM-15	CLR:00	10		27	-3	25	-3.9	21	-6	80	5	340	28.66					30.05	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/20/2018 23:59	SOD																			
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 0:15	FM-15	SCT:04 65	10		25	-4	23	-5	19	-7	80	5	340	28.66					30.05	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 0:35	FM-15	OVC:08 65	10		27	-3	25	-3.9	21	-6	80	5	350	28.66					30.05	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 0:55	FM-15	BKN:07 65	10		25	-4	23	-5	19	-7	80	5	340	28.66					30.05	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 1:15	FM-15	CLR:00	10		25	-4	24	-4.6	21	-6	86	5	340	28.66					30.05	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 1:35	FM-15	CLR:00	10		25	-4	23	-5	19	-7	80	5	340	28.67					30.06	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 1:55	FM-15	CLR:00	10		25	-4	23	-5	19	-7	80	3	360	28.66					30.05	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 2:15	FM-15	CLR:00	10		25	-4	24	-4.6	21	-6	86	5	340	28.66					30.05	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 2:35	FM-15	CLR:00	10		23	-5	22	-5.7	19	-7	86	5	330	28.66					30.05	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 2:55	FM-15	CLR:00	10		23	-5	22	-5.7	19	-7	86	6	340	28.67					30.06	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 3:15	FM-15	CLR:00	10		23	-5	22	-5.7	19	-7	86	3	350	28.67					30.06	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 3:35	FM-15	CLR:00	10		23	-5	22	-5.7	19	-7	86	5	340	28.67					30.06	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 3:55	FM-15	CLR:00	10		23	-5	22	-5.7	19	-7	86	5	340	28.67					30.06	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 4:15	FM-15	CLR:00	10		23	-5	22	-5.7	19	-7	86	3	360	28.68					30.07	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 4:35	FM-15	CLR:00	10		21	-6	20	-6.5	19	-7	93	5	330	28.69					30.08	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 4:55	FM-15	CLR:00	10		21	-6	20	-6.5	19	-7	93	5	330	28.7					30.09	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 5:15	FM-15	CLR:00	10		21	-6	20	-6.5	19	-7	93	5	330	28.7					30.09	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 5:35	FM-15	CLR:00	10		21	-6	20	-6.5	19	-7	93	5	340	28.71					30.1	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 5:55	FM-15	CLR:00	10		21	-6	20	-6.5	19	-7	93	3	350	28.71					30.1	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 6:15	FM-15	CLR:00	10		21	-6	20	-6.5	19	-7	93	3	330	28.72					30.11	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 6:35	FM-15	CLR:00	10		23	-5	22	-5.7	19	-7	86	0	0	28.72					30.11	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 6:55	FM-15	CLR:00	10		25	-4	23	-5	19	-7	80	0	0	28.73					30.12	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 7:15	FM-15	BKN:07 50	10		25	-4	24	-4.6	21	-6	86	3	340	28.73					30.12	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 7:35	FM-15	OVC:08 50	10		25	-4	23	-5	19	-7	80	0	0	28.73					30.12	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 7:55	FM-15	OVC:08 50	10		25	-4	24	-4.6	21	-6	86	0	0	28.74					30.13	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 8:15	FM-15	OVC:08 50	10		27	-3	25	-3.9	21	-6	80	0	0	28.74					30.13	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 8:35	FM-15	OVC:08 50	10		27	-3	25	-3.9	21	-6	80	0	0	28.74					30.13	
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 8:55	FM-15	OVC:08 50	10		28	-2	26	-3.5	21	-6	74	0	0	28.74					30.13	

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMPF	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMPF	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 9:15	FM-15	OVC:08 50	10		28	-2	25	-3.9	19	-7	69	0	0	28.75						30.14
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 9:35	FM-15	OVC:08 50	10		30	-1	26	-3.3	18	-8	59	0	0	28.75						30.14
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 9:55	FM-15	OVC:08 50	10		30	-1	26	-3.3	18	-8	59	0	0	28.76						30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 10:15	FM-15	OVC:08 50	10		30	-1	26	-3.3	18	-8	59	0	0	28.76						30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 10:35	FM-15	OVC:08 50	10		30	-1	25	-3.6	16	-9	55	3	280	28.77						30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 10:55	FM-15	OVC:08 60	10		30	-1	26	-3.3	18	-8	59	7	280	28.77						30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 11:15	FM-15	OVC:08 60	10		30	-1	26	-3.2	19	-7	64	6	270	28.77						30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 11:35	FM-15	OVC:08 60	10		30	-1	26	-3.3	18	-8	59	8	250	28.77						30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 11:55	FM-15	BKN:07 60	10		30	-1	26	-3.2	19	-7	64	8	240	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 12:15	FM-15	BKN:07 60	10		30	-1	26	-3.2	19	-7	64	6	240	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 12:35	FM-15	SCT:04 60	10		32	0	28	-2.5	19	-7	60	6	260	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 12:55	FM-15	BKN:07 60	10		34	1	29	-1.5	21	-6	60	6	280	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 13:15	FM-15	BKN:07 60	10		34	1	30	-1.1	23	-5	65	7	300	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 13:35	FM-15	SCT:04 41 BKN:07 60	10		34	1	30	-1.1	23	-5	65	10	290	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 13:55	FM-15	BKN:07 41	10		34	1	31	-0.8	25	-4	70	8	310	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 14:15	FM-15	SCT:04 25 SCT:04 43	10		34	1	31	-0.8	25	-4	70	6	260	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 14:35	FM-15	BKN:07 25	10		36	2	32	-0.1	25	-4	65	3	310	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 14:55	FM-15	SCT:04 25	10		36	2	33	0.3	27	-3	70	7	310	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 15:15	FM-15	CLR:00	10		36	2	33	0.3	27	-3	70	8	320	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 15:35	FM-15	SCT:04 25	10		36	2	33	0.3	27	-3	70	7	320	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 15:55	FM-15	SCT:04 23	10		36	2	33	0.3	27	-3	70	8	350	28.78						30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 16:15	FM-15	SCT:04 23	10		34	1	31	-0.4	27	-3	75	7	330	28.79						30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 16:35	FM-15	SCT:04 23	10		34	1	31	-0.4	27	-3	75	6	340	28.79						30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 16:55	FM-15	SCT:04 23	10		34	1	31	-0.4	27	-3	75	8	340	28.8						30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 17:15	FM-15	CLR:00	10		34	1	31	-0.4	27	-3	75	7	350	28.8						30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 17:35	FM-15	CLR:00	10		34	1	31	-0.4	27	-3	75	5	330	28.81						30.2
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 17:55	FM-15	CLR:00	10		34	1	31	-0.4	27	-3	75	5	350	28.82						30.21
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 18:15	FM-15	CLR:00	10		32	0	30	-1	27	-3	80	5	340	28.82						30.21
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 18:35	FM-15	SCT:04 95	10		32	0	29	-1.4	25	-4	75	0	0	28.82						30.21
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 18:55	FM-15	SCT:04 27	10		30	-1	29	-1.7	27	-3	86	0	0	28.82						30.21
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 19:15	FM-15	SCT:04 27	10		32	0	29	-1.4	25	-4	75	0	0	28.82						30.21
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 19:35	FM-15	BKN:07 27	10		30	-1	28	-2.1	25	-4	80	0	0	28.82						30.22
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 19:55	FM-15	BKN:07 29	10		30	-1	28	-2.1	25	-4	80	0	0	28.84						30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 20:15	FM-15	OVC:08 29	10		32	0	30	-1	27	-3	80	0	0	28.84						30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 20:35	FM-15	OVC:08 29	10		32	0	30	-1	27	-3	80	3	80	28.84						30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 20:55	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	0	0	28.84						30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 21:15	FM-15	BKN:07 29	10		30	-1	29	-1.7	27	-3	86	3	70	28.85						30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 21:35	FM-15	BKN:07 29	10		30	-1	29	-1.7	27	-3	86	0	0	28.85						30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 21:55	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	0	0	28.85						30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 22:15	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	0	0	28.85						30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 22:35	FM-15	OVC:08 29	10		30	-1	29	-1.5	28	-2	93	0	0	28.85						30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 22:55	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	3	110	28.85						30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 23:15	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	3	110	28.85						30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 23:35	FM-15	OVC:08 31	10		30	-1	29	-1.7	27	-3	86	5	90	28.87						30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/21/2018 23:55	FM-15	OVC:08 31	10		30	-1	29	-1.7	27	-3	86	0	0	28.87						30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 0:15	FM-15	OVC:08 31	10		30	-1	29	-1.7	27	-3	86	0	0	28.87						30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 0:35	FM-15	OVC:08 31	10		30	-1	29	-1.7	27	-3	86	5	70	28.87						30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 0:55	FM-15	OVC:08 31	10		30	-1	29	-1.7	27	-3	86	0	0	28.87						30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 1:15	FM-15	BKN:07 31	10		30	-1	29	-1.7	27	-3	86	3	50	28.87						30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 1:35	FM-15	SCT:04 31	10		30	-1	28	-2.1	25	-4	80	3	80	28.87						30.27

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMPF	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMPF	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 1:55	FM-15	SCT:04 31 SCT:04 100	10		28	-2	28	-2.4	27	-3	93	3	140	28.87						30.27
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 2:15	FM-15	BKN:07 31	10		28	-2	28	-2.4	27	-3	93	0	0	28.87						30.27
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 2:35	FM-15	OVC:08 31	10		30	-1	29	-1.7	27	-3	86	0	0	28.87						30.27
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 2:55	FM-15	OVC:08 31	10		30	-1	29	-1.7	27	-3	86	0	0	28.87						30.27
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 3:15	FM-15	OVC:08 31	10		30	-1	29	-1.7	27	-3	86	0	0	28.88						30.28
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 3:35	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	0	0	28.88						30.28
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 3:55	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	0	0	28.88						30.28
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 4:15	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	5	80	28.88						30.28
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 4:35	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	0	0	28.89						30.29
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 4:55	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	3	110	28.89						30.29
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 5:15	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	0	0	28.9						30.3
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 5:35	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	0	0	28.91						30.31
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 5:55	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	0	0	28.91						30.31
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 6:15	FM-15	OVC:08 29	10		30	-1	29	-1.7	27	-3	86	0	0	28.92						30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 6:35	FM-15	OVC:08 29	7		30	-1	29	-1.5	28	-2	93	0	0	28.93						30.33
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 6:55	FM-15	OVC:08 29	7		30	-1	29	-1.5	28	-2	93	0	0	28.93						30.33
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 7:15	FM-15	OVC:08 27	7		30	-1	29	-1.5	28	-2	93	0	0	28.93						30.33
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 7:35	FM-15	BKN:07 27	7		32	0	30	-0.8	28	-2	87	0	0	28.93						30.33
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 7:55	FM-15	CLR:00	10		34	1	31	-0.4	27	-3	75	0	0	28.93						30.33
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 8:15	FM-15	SCT:04 29	10		34	1	31	-0.7	25	-4	70	3	110	28.94						30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 8:35	FM-15	SCT:04 29	7		34	1	31	-0.4	27	-3	75	6	100	28.94						30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 8:55	FM-15	CLR:00	7		34	1	31	-0.4	27	-3	75	5	120	28.95						30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 9:15	FM-15	CLR:00	10		34	1	31	-0.4	27	-3	75	6	110	28.95						30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 9:35	FM-15	CLR:00	7		36	2	33	0.3	27	-3	70	6	90	28.95						30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 9:55	FM-15	CLR:00	10		36	2	33	0.3	27	-3	70	6	80	28.95						30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 10:15	FM-15	CLR:00	10		36	2	33	0.3	27	-3	70	5	60	28.95						30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 10:35	FM-15	CLR:00	10		37	3	33	0.8	28	-2	70	7	70	28.95						30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 10:55	FM-15	CLR:00	10		37	3	33	0.6	27	-3	65	6	20	28.95						30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 11:15	FM-15	CLR:00	10		37	3	33	0.6	27	-3	65	5	40	28.94						30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 11:35	FM-15	CLR:00	10		39	4	35	1.5	28	-2	65	6	60	28.94						30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 11:55	FM-15	CLR:00	10		39	4	35	1.5	28	-2	65	6	40	28.94						30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 12:15	FM-15	SCT:04 25	10		39	4	35	1.5	28	-2	65	6	10	28.93						30.33
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 12:35	FM-15	SCT:04 25	10		39	4	35	1.5	28	-2	65	5	40	28.93						30.33
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 12:55	FM-15	SCT:04 25	10		39	4	35	1.5	28	-2	65	8	360	28.92						30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 13:15	FM-15	SCT:04 25	10		39	4	35	1.5	28	-2	65	5	350	28.92						30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 13:35	FM-15	SCT:04 25	10		39	4	35	1.5	28	-2	65	6	10	28.92						30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 13:55	FM-15	SCT:04 25	10		39	4	35	1.5	28	-2	65	3	340	28.92						30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 14:15	FM-15	CLR:00	10		39	4	35	1.5	28	-2	65	8	350	28.92						30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 14:35	FM-15	CLR:00	10		39	4	35	1.9	30	-1	70	9	350	28.92						30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 14:55	FM-15	CLR:00	10		39	4	35	1.5	28	-2	65	7	350	28.91						30.31
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 15:15	FM-15	CLR:00	10		39	4	35	1.5	28	-2	65	9	20	28.91						30.31
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 15:35	FM-15	CLR:00	10		39	4	35	1.5	28	-2	65	9	360	28.9						30.3
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 15:55	FM-15	CLR:00	10		39	4	35	1.5	28	-2	65	8	50	28.89						30.29
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 16:15	FM-15	CLR:00	10		39	4	35	1.5	28	-2	65	8	30	28.9						30.3
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 16:35	FM-15	CLR:00	10		39	4	35	1.5	28	-2	65	7	20	28.9						30.3
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 16:55	FM-15	CLR:00	10		39	4	35	1.5	28	-2	65	8	10	28.9						30.3
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 17:15	FM-15	CLR:00	10		39	4	35	1.5	28	-2	65	3	10	28.91						30.31
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 17:35	FM-15	SCT:04 55	10		39	4	35	1.5	28	-2	65	5	20	28.92						30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 17:55	FM-15	BKN:07 50	10		37	3	33	0.8	28	-2	70	3	20	28.92						30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 18:15	FM-15	BKN:07 50	10		37	3	33	0.8	28	-2	70	0	0	28.92						30.32

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMPF	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMPF	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 18:35	FM-15	SCT:04 50	10		36	2	33	0.5	28	-2	75	3	350		28.92					30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 18:55	FM-15	SCT:04 100	10		36	2	33	0.5	28	-2	75	0	0		28.91					30.31
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 19:15	FM-15	CLR:00	10		36	2	33	0.5	28	-2	75	3	350		28.92					30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 19:35	FM-15	CLR:00	10		34	1	32	-0.2	28	-2	81	3	350		28.92					30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 19:55	FM-15	CLR:00	10		34	1	31	-0.4	27	-3	75	3	340		28.93					30.33
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 20:15	FM-15	CLR:00	10		34	1	31	-0.4	27	-3	75	3	350		28.94					30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 20:35	FM-15	CLR:00	10		34	1	31	-0.4	27	-3	75	5	360		28.94					30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 20:55	FM-15	CLR:00	10		32	0	30	-1	27	-3	80	5	360		28.94					30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 21:15	FM-15	CLR:00	10		32	0	30	-1	27	-3	80	5	10		28.94					30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 21:35	FM-15	CLR:00	10		30	-1	29	-1.7	27	-3	86	3	10		28.95					30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 21:55	FM-15	CLR:00	10		32	0	30	-1	27	-3	80	3	10		28.95					30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 22:15	FM-15	CLR:00	10		32	0	29	-1.4	25	-4	75	0	0		28.95					30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 22:35	FM-15	CLR:00	10		30	-1	28	-2.1	25	-4	80	6	20		28.95					30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 22:55	FM-15	CLR:00	10		30	-1	28	-2.1	25	-4	80	3	10		28.95					30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 23:15	FM-15	CLR:00	10		30	-1	28	-2.1	25	-4	80	3	10		28.95					30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 23:35	FM-15	SCT:04 100	10		30	-1	28	-2.1	25	-4	80	5	20		28.94					30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/22/2018 23:55	FM-15	SCT:04 100	10		30	-1	28	-2.1	25	-4	80	5	20		28.95					30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 0:15	FM-15	CLR:00	10		30	-1	28	-2.1	25	-4	80	5	30		28.94					30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 0:35	FM-15	CLR:00	10		28	-2	27	-2.8	25	-4	86	3	20		28.95					30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 0:55	FM-15	CLR:00	10		30	-1	28	-2.5	23	-5	75	5	10		28.95					30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 1:15	FM-15	CLR:00	10		28	-2	26	-3.2	23	-5	80	5	10		28.95					30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 1:35	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	6	30		28.95					30.35
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 1:55	FM-15	SCT:04 110	10		30	-1	27	-2.8	21	-6	69	3	30		28.94					30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 2:15	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	5	50		28.94					30.34
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 2:35	FM-15	CLR:00	10		30	-1	28	-2.5	23	-5	75	5	40		28.93					30.33
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 2:55	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	5	50		28.92					30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 3:15	FM-15	CLR:00	10		28	-2	26	-3.2	23	-5	80	5	70		28.93					30.33
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 3:35	FM-15	CLR:00	10		28	-2	26	-3.2	23	-5	80	6	70		28.92					30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 3:55	FM-15	CLR:00	10		28	-2	26	-3.2	23	-5	80	7	60		28.92					30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 4:15	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	6	60		28.92					30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 4:35	FM-15	CLR:00	10		28	-2	26	-3.2	23	-5	80	5	80		28.92					30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 4:55	FM-15	SCT:04 90	10		28	-2	26	-3.5	21	-6	74	3	80		28.92					30.32
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 5:15	FM-15	SCT:04 90	10		28	-2	26	-3.5	21	-6	74	7	80		28.91					30.31
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 5:35	FM-15	SCT:04 90	10		28	-2	26	-3.5	21	-6	74	7	80		28.91					30.31
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 5:55	FM-15	SCT:04 90	10		28	-2	26	-3.5	21	-6	74	7	70		28.91					30.31
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 6:15	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	8	70		28.9					30.3
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 6:35	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	8	80		28.9					30.3
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 6:55	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	9	80		28.91					30.31
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 7:15	FM-15	CLR:00	10		28	-2	25	-3.9	19	-7	69	9	90		28.91					30.31
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 7:35	FM-15	CLR:00	10		30	-1	26	-3.2	19	-7	64	8	100		28.91					30.31
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 7:55	FM-15	CLR:00	10		30	-1	26	-3.2	19	-7	64	10	90		28.9					30.3
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 8:15	FM-15	CLR:00	10		32	0	28	-2.5	19	-7	60	14	90		28.9					30.3
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 8:35	FM-15	CLR:00	10		32	0	28	-2.1	21	-6	64	13	100		28.89					30.29
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 8:55	FM-15	CLR:00	10		32	0	28	-2.1	21	-6	64	14	90		28.89					30.29
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 9:15	FM-15	CLR:00	10		34	1	29	-1.8	19	-7	56	15	80		28.89					30.29
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 9:35	FM-15	CLR:00	10		34	1	29	-1.8	19	-7	56	13	90		28.89					30.29
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 9:55	FM-15	CLR:00	10		34	1	29	-1.8	19	-7	56	10	80		28.9					30.3
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 10:15	FM-15	CLR:00	10		36	2	31	-0.8	21	-6	56	9	90		28.9					30.3
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 10:35	FM-15	CLR:00	10		36	2	31	-0.8	21	-6	56	11	100		28.9					30.3
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 10:55	FM-15	CLR:00	10		36	2	30	-1.1	19	-7	52	13	80		28.89					30.29

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMPF	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMPF	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 11:15	FM-15	CLR:00	10		37	3	32	-0.1	23	-5	56	13	80		28.88					30.28
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 11:35	FM-15	CLR:00	10		37	3	31	-0.5	21	-6	52	15	90		28.88					30.28
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 11:55	FM-15	CLR:00	10		37	3	32	-0.1	23	-5	56	13	90		28.87					30.27
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 12:15	FM-15	CLR:00	10		39	4	34	0.9	25	-4	56	13	90		28.87					30.27
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 12:35	FM-15	CLR:00	10		39	4	34	0.9	25	-4	56	16	90		28.85					30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 12:55	FM-15	CLR:00	10		39	4	34	0.9	25	-4	56	14	100		28.85					30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 13:15	FM-15	CLR:00	10		39	4	34	0.9	25	-4	56	14	90		28.85					30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 13:35	FM-15	CLR:00	10		39	4	34	0.9	25	-4	56	15	80		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 13:55	FM-15	CLR:00	10		39	4	33	0.5	23	-5	52	14	80		28.82					30.22
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 14:15	FM-15	CLR:00	10		41	5	35	1.5	25	-4	53	15	80		28.82					30.21
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 14:35	FM-15	CLR:00	10		39	4	34	0.9	25	-4	56	18	70		28.81					30.2
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 14:55	FM-15	CLR:00	10		39	4	33	0.5	23	-5	52	17	90		28.8					30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 15:15	FM-15	CLR:00	10		39	4	33	0.5	23	-5	52	18	80		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 15:35	FM-15	CLR:00	10		39	4	34	0.9	25	-4	56	18	80	22	28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 15:55	FM-15	CLR:00	10		39	4	34	0.9	25	-4	56	18	80	24	28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 16:15	FM-15	SCT:04 120	10		39	4	34	0.9	25	-4	56	20	90	23	28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 16:35	FM-15	SCT:04 110	10		39	4	34	0.9	25	-4	56	15	80		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 16:55	FM-15	BKN:07 110	10		39	4	34	0.9	25	-4	56	16	90	22	28.75					30.14
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 17:15	FM-15	OVC:08 110	10		37	3	32	0.2	25	-4	60	17	80		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 17:35	FM-15	OVC:08 100	10		37	3	32	0.2	25	-4	60	18	80	24	28.72					30.11
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 17:55	FM-15	BKN:07 100	10		37	3	32	-0.1	23	-5	56	20	80		28.72					30.11
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 18:15	FM-15	SCT:04s 100s	10		37	3	32	-0.1	23	-5	56	18	80		28.73					30.12
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 18:35	FM-15	SCT:04 100	10		37	3	31	-0.5	21	-6	52	20	90	23	28.71					30.1
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 18:55	FM-15	SCT:04 100	10		37	3	31	-0.5	21	-6	52	14	90		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 19:15	FM-15	SCT:04 100	10		37	3	31	-0.5	21	-6	52	15	90		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 19:35	FM-15	SCT:04 100	10		36	2	31	-0.8	21	-6	56	15	90		28.73					30.12
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 19:56	FM-15	SCT:04 90	10		36	2	31	-0.8	21	-6	56	15	80		28.73					30.12
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 20:15	FM-15	SCT:04 90	10		36	2	31	-0.8	21	-6	56	17	90		28.73					30.12
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 20:35	FM-15	SCT:04 80	10		36	2	31	-0.8	21	-6	56	17	90		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 20:56	FM-15	SCT:04s 95s	10		36	2	31	-0.8	21	-6	56	16	100		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 21:15	FM-15	SCT:04 95	10		36	2	31	-0.8	21	-6	56	18	100		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 21:35	FM-15	SCT:04 80 BKN:07 95	10		36	2	31	-0.8	21	-6	56	13	100		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 21:56	FM-15	SCT:04 95	10		36	2	31	-0.8	21	-6	56	11	90		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 22:15	FM-15	SCT:04 80 BKN:07 95	10		36	2	31	-0.8	21	-6	56	11	90		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 22:35	FM-15	SCT:04 80	10		36	2	31	-0.8	21	-6	56	13	90	18	28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 22:55	FM-15	SCT:04 90	10		34	1	29	-1.5	21	-6	60	14	100		28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 23:15	FM-15	SCT:04 90	10		36	2	30	-1.1	19	-7	52	17	100		28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 23:35	FM-15	SCT:04 90	10		34	1	29	-1.5	21	-6	60	17	100		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/23/2018 23:55	FM-15	SCT:04 80 SCT:04 90	10		34	1	29	-1.5	21	-6	60	17	100	23	28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 0:15	FM-15	SCT:04 90	10		34	1	29	-1.5	21	-6	60	17	100		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 0:35	FM-15	SCT:04 90	10		34	1	29	-1.5	21	-6	60	16	100	23	28.75					30.14
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 0:55	FM-15	SCT:04 90	10		34	1	29	-1.5	21	-6	60	20	100	25	28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 1:15	FM-15	SCT:04 90	10		34	1	29	-1.5	21	-6	60	20	100	26	28.73					30.12
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 1:35	FM-15	SCT:04 90	10		34	1	30	-1.1	23	-5	65	22	90	25	28.73					30.12
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 1:55	FM-15	SCT:04 80 SCT:04 90	10		32	0	28	-2.1	21	-6	64	17	90	28	28.72					30.11
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 2:15	FM-15	SCT:04 80	10		32	0	28	-2.5	19	-7	60	22	90		28.7					30.09
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 2:35	FM-15	SCT:04 80	10		32	0	27	-2.6	18	-8	55	23	90	30	28.69					30.08
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 2:55	FM-15	OVC:08 80	10		32	0	27	-2.6	18	-8	55	22	90	28	28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 3:15	FM-15	OVC:08 80	10		30	-1	26	-3.3	18	-8	59	23</								

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMP	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMP	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 3:55	FM-15	OVC:08 70	10		30	-1	26	-3.3	18	-8	59	22	80	26	28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 4:15	FM-15	BKN:07 70 BKN:07 85	10		30	-1	25	-3.6	16	-9	55	18	80		28.68					30.07
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 4:35	FM-15	SCT:04 60 SCT:04 85	10		28	-2	25	-4	18	-8	64	16	80	24	28.7					30.09
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 4:55	FM-15	BKN:07 60	10		28	-2	25	-4	18	-8	64	20	80	26	28.71					30.1
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 5:15	FM-15	BKN:07 60	10		28	-2	25	-3.9	19	-7	69	21	80		28.72					30.11
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 5:35	FM-15	SCT:04 70	10		28	-2	25	-3.9	19	-7	69	18	80	26	28.72					30.11
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 5:55	FM-15	SCT:04 70	10		28	-2	25	-3.9	19	-7	69	20	80	26	28.73					30.12
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 6:15	FM-15	SCT:04 80 SCT:04 95	10		28	-2	25	-3.9	19	-7	69	22	70		28.73					30.12
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 6:35	FM-15	SCT:04 90	10		28	-2	25	-3.9	19	-7	69	21	70	25	28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 6:55	FM-15	SCT:04 90	10		28	-2	25	-3.9	19	-7	69	17	60	21	28.75					30.14
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 7:15	FM-15	SCT:04 90	10		28	-2	25	-3.9	19	-7	69	17	60	24	28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 7:35	FM-15	SCT:04 80	10		28	-2	25	-3.9	19	-7	69	22	70	25	28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 7:55	FM-15	SCT:04 80	10		28	-2	26	-3.5	21	-6	74	13	70	23	28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 8:15	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	14	60		28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 8:35	FM-15	SCT:04 80	10		28	-2	26	-3.5	21	-6	74	16	60	20	28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 8:55	FM-15	SCT:04 80	10		28	-2	26	-3.5	21	-6	74	16	70		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 9:15	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	16	60		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 9:35	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	17	70	22	28.8					30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 9:55	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	18	70		28.8					30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 10:15	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	17	80		28.8					30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 10:35	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	17	70		28.8					30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 10:55	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	15	80		28.8					30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 11:15	FM-15	CLR:00	10		32	0	28	-2.1	21	-6	64	16	70		28.8					30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 11:35	FM-15	CLR:00	10		34	1	29	-1.5	21	-6	60	15	80		28.8					30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 11:55	FM-15	CLR:00	10		34	1	29	-1.5	21	-6	60	18	90	24	28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 12:15	FM-15	CLR:00	10		34	1	29	-1.5	21	-6	60	18	90	26	28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 12:35	FM-15	SCT:04 80	10		36	2	31	-0.8	21	-6	56	23	90	26	28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 12:55	FM-15	CLR:00	10		36	2	31	-0.8	21	-6	56	18	80	25	28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 13:15	FM-15	CLR:00	10		36	2	31	-0.4	23	-5	60	20	90		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 13:35	FM-15	CLR:00	10		37	3	32	-0.1	23	-5	56	15	80	24	28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 13:55	FM-15	CLR:00	10		37	3	32	-0.1	23	-5	56	22	80	25	28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 14:15	FM-15	CLR:00	10		37	3	31	-0.5	21	-6	52	18	90	24	28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 14:35	FM-15	CLR:00	10		37	3	31	-0.5	21	-6	52	21	80	25	28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 14:55	FM-15	CLR:00	10		37	3	31	-0.5	21	-6	52	18	80		28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 15:15	FM-15	CLR:00	10		37	3	32	-0.1	23	-5	56	15	80		28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 15:35	FM-15	CLR:00	10		37	3	32	-0.1	23	-5	56	17	80	22	28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 15:55	FM-15	CLR:00	10		37	3	31	-0.5	21	-6	52	21	80	26	28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 16:15	FM-15	CLR:00	10		39	4	34	0.9	25	-4	56	17	80	23	28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 16:35	FM-15	CLR:00	10		39	4	33	0.5	23	-5	52	21	80		28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 16:55	FM-15	SCT:04 90	10		39	4	33	0.5	23	-5	52	17	80		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 17:15	FM-15	BKN:07 90	10		37	3	32	-0.1	23	-5	56	16	80		28.8					30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 17:35	FM-15	BKN:07 90	10		37	3	32	0.2	25	-4	60	9	90		28.81					30.2
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 17:55	FM-15	OVC:08 90	10		37	3	31	-0.5	21	-6	52	11	90		28.81					30.2
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 18:15	FM-15	OVC:08 90	10		36	2	31	-0.8	21	-6	56	9	90		28.82					30.21
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 18:35	FM-15	OVC:08 90	10		36	2	32	-0.1	25	-4	65	7	80		28.82					30.22
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 18:55	FM-15	OVC:08 90	10		34	1	31	-0.8	25	-4	70	7	80		28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 19:16	FM-15	BKN:07 90	10		34	1	30	-1.1	23	-5	65	5	40		28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 19:35	FM-15	SCT:04 90	10		34	1	29	-1.5	21	-6	60	6	40		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 19:55	FM-15	SCT:04 90	10		34	1	31	-0.8	25	-4	70	9	60		28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 20:15	FM-15	SCT:04 90	10		34	1	31	-0.8	25	-4	70	10	70		28.84					30.23

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMPF	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMPF	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 20:35	FM-15	BKN:07 80	10		34	1	31	-0.8	25	-4	70	9	70		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 20:55	FM-15	SCT:04 80	10		32	0	29	-1.4	25	-4	75	8	80		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 21:15	FM-15	SCT:04 90	10		32	0	29	-1.4	25	-4	75	9	90		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 21:35	FM-15	SCT:04 90	10		32	0	29	-1.8	23	-5	69	11	100		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 21:55	FM-15	BKN:07 90	10		32	0	28	-2.1	21	-6	64	13	100		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 22:15	FM-15	OVC:08 90	10		32	0	28	-2.1	21	-6	64	13	100		28.85					30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 22:35	FM-15	OVC:08 90	10		32	0	28	-2.1	21	-6	64	13	100		28.85					30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 22:55	FM-15	SCT:04 90	10		30	-1	27	-2.8	21	-6	69	11	100	17	28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 23:15	FM-15	BKN:07 80 BKN:07 90	10		30	-1	27	-2.8	21	-6	69	11	100		28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 23:35	FM-15	OVC:08 80	10		30	-1	27	-2.8	21	-6	69	11	100		28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/24/2018 23:56	FM-15	OVC:08 80	10		30	-1	28	-2.5	23	-5	75	13	90		28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 0:15	FM-15	OVC:08 80	10		30	-1	27	-2.8	21	-6	69	14	100		28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 0:35	FM-15	OVC:08 80	10		30	-1	27	-2.8	21	-6	69	14	100		28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 0:55	FM-15	OVC:08 80	10		30	-1	27	-2.8	21	-6	69	10	100		28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 1:15	FM-15	OVC:08 80	10		30	-1	27	-2.8	21	-6	69	13	100		28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 1:35	FM-15	OVC:08 80	10		30	-1	27	-2.8	21	-6	69	13	100	17	28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 1:55	FM-15	OVC:08 80	10		30	-1	27	-2.8	21	-6	69	13	110	20	28.85					30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 2:15	FM-15	OVC:08 80	10		30	-1	26	-3.2	19	-7	64	17	110	22	28.85					30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 2:35	FM-15	OVC:08 80	10		30	-1	26	-3.2	19	-7	64	15	110	22	28.85					30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 2:55	FM-15	OVC:08 80	10		30	-1	26	-3.2	19	-7	64	16	110	22	28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 3:15	FM-15	BKN:07 70 OVC:08 80	10		28	-2	25	-3.9	19	-7	69	14	110		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 3:35	FM-15	OVC:08 70	10		28	-2	25	-3.9	19	-7	69	14	110	20	28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 3:55	FM-15	OVC:08 70	10		28	-2	25	-3.9	19	-7	69	14	110	18	28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 4:15	FM-15	OVC:08 70	10		28	-2	25	-3.9	19	-7	69	16	110		28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 4:35	FM-15	SCT:04 70	10		28	-2	25	-3.9	19	-7	69	15	120		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 4:55	FM-15	BKN:07 80	10		28	-2	25	-4	18	-8	64	18	120		28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 5:15	FM-15	SCT:04 80	10		28	-2	25	-4	18	-8	64	15	110		28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 5:35	FM-15	CLR:00	10		27	-3	24	-4.4	18	-8	69	17	110		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 5:55	FM-15	CLR:00	10		27	-3	24	-4.4	18	-8	69	16	110		28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 6:15	FM-15	CLR:00	10		27	-3	24	-4.4	18	-8	69	21	120	25	28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 6:35	FM-15	SCT:04 80	10		27	-3	24	-4.7	16	-9	64	20	110	23	28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 6:55	FM-15	SCT:04 80	10		27	-3	24	-4.7	16	-9	64	18	110		28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 7:15	FM-15	CLR:00	10		27	-3	24	-4.4	18	-8	69	15	110		28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 7:35	FM-15	CLR:00	10		27	-3	24	-4.7	16	-9	64	15	110		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 7:55	FM-15	CLR:00	10		28	-2	24	-4.4	16	-9	59	17	110		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 8:15	FM-15	CLR:00	10		28	-2	24	-4.4	16	-9	59	20	120	24	28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 8:35	FM-15	CLR:00	10		28	-2	25	-4	18	-8	64	16	110		28.85					30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 8:55	FM-15	CLR:00	10		30	-1	26	-3.3	18	-8	59	15	120		28.85					30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 9:15	FM-15	CLR:00	10		30	-1	26	-3.3	18	-8	59	15	140		28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 9:35	FM-15	SCT:04 90	10		32	0	27	-2.6	18	-8	55	16	130	20	28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 9:55	FM-15	CLR:00	10		34	1	29	-1.9	18	-8	51	16	140	20	28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 10:15	FM-15	SCT:04 100	10		34	1	29	-1.9	18	-8	51	17	130		28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 10:35	FM-15	SCT:04 100	10		34	1	29	-1.9	18	-8	51	14	120		28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 10:55	FM-15	SCT:04 100	10		36	2	30	-1.3	18	-8	48	11	120		28.87					30.26
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 11:15	FM-15	SCT:04 100	10		36	2	30	-1.3	18	-8	48	15	140		28.85					30.25
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 11:35	FM-15	CLR:00	10		37	3	31	-0.8	19	-7	48	14	110		28.85					30.24
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 11:55	FM-15	CLR:00	10		37	3	31	-0.5	21	-6	52	15	120		28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 12:15	FM-15	SCT:04 90	10		39	4	32	-0.1	19	-7	45	17	130	23	28.84					30.23
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 12:35	FM-15	SCT:04 90	10		39	4	32	-0.3	18	-8	42	16								

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMP	HOURLYDRYBULBTEMP	HOURLYWETBULBTEMP	HOURLYWETBULBTEMP	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 13:15	FM-15	SCT:04 90	10		39	4	32	0.2	21	-6	48	15	130		28.82					30.21
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 13:35	FM-15	SCT:04 90	10		39	4	32	-0.1	19	-7	45	17	130	21	28.81					30.2
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 13:55	FM-15	SCT:04 90	10		39	4	32	-0.3	18	-8	42	18	140	24	28.8					30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 14:15	FM-15	BKN:07 80	10		39	4	32	-0.3	18	-8	42	17	140		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 14:35	FM-15	BKN:07 80	10		39	4	32	0.2	21	-6	48	17	140		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 14:55	FM-15	BKN:07 80	10		39	4	32	-0.1	19	-7	45	16	140		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 15:15	FM-15	OVC:08 80	10		39	4	33	0.5	23	-5	52	14	140		28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 15:35	FM-15	OVC:08 80	10		39	4	33	0.5	23	-5	52	15	150		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 15:55	FM-15	BKN:07 80	10		41	5	35	1.5	25	-4	53	14	140	20	28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 16:15	FM-15	OVC:08 80	10		41	5	35	1.5	25	-4	53	13	140		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 16:35	FM-15	OVC:08 80	10		41	5	35	1.5	25	-4	53	9	140		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 16:55	FM-15	OVC:08 80	10		41	5	35	1.5	25	-4	53	10	140		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 17:15	FM-15	OVC:08 80	10		41	5	35	1.5	25	-4	53	8	150		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 17:35	FM-15	OVC:08 80	10		39	4	34	0.9	25	-4	56	8	150		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 17:55	FM-15	OVC:08 70	10		39	4	34	1.3	27	-3	61	6	160		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 18:15	FM-15	OVC:08 70	10		39	4	34	1.3	27	-3	61	6	150		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 18:35	FM-15	OVC:08 70	10		37	3	33	0.8	28	-2	70	5	150		28.75					30.14
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 18:55	FM-15	OVC:08 70	10		37	3	33	0.8	28	-2	70	5	140		28.75					30.14
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 19:15	FM-15	OVC:08 70	10		37	3	33	0.8	28	-2	70	6	140		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 19:35	FM-15	OVC:08 70	10		37	3	33	0.8	28	-2	70	6	130		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 19:55	FM-15	OVC:08 70	10		37	3	33	0.8	28	-2	70	7	130		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 20:15	FM-15	BKN:07 70 OVC:08 75	10		37	3	33	0.6	27	-3	65	7	130		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 20:35	FM-15	SCT:04 60 OVC:08 70	10		36	2	33	0.3	27	-3	70	8	120		28.75					30.14
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 20:55	FM-15	SCT:04 60 SCT:04 70	10		36	2	33	0.3	27	-3	70	8	120		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 21:15	FM-15	CLR:00	10		36	2	31	-0.4	23	-5	60	9	120		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 21:35	FM-15	CLR:00	10		36	2	32	-0.1	25	-4	65	9	120		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 21:55	FM-15	CLR:00	10		36	2	31	-0.8	21	-6	56	11	130		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 22:15	FM-15	CLR:00	10		36	2	31	-0.8	21	-6	56	11	140		28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 22:35	FM-15	SCT:04 60	10		36	2	31	-0.8	21	-6	56	9	140		28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 22:55	FM-15	CLR:00	10		34	1	31	-0.8	25	-4	70	6	150		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 23:15	FM-15	SCT:04 100	10		34	1	31	-0.8	25	-4	70	9	140		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 23:35	FM-15	SCT:04 90	10		34	1	29	-1.5	21	-6	60	18	140		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/25/2018 23:55	FM-15	SCT:04 43 SCT:04 50 BKN:07 65	10		34	1	29	-1.5	21	-6	60	15	140		28.8					30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 0:15	FM-15	SCT:04 47 SCT:04 60 OVC:08 80	10		34	1	29	-1.5	21	-6	60	16	140	22	28.8					30.19
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 0:35	FM-15	OVC:08 80	10		34	1	29	-1.5	21	-6	60	11	130		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 0:55	FM-15	OVC:08 80	10		34	1	29	-1.5	21	-6	60	17	130	21	28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 1:15	FM-15	OVC:08 80	10		34	1	29	-1.5	21	-6	60	16	130		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 2:35	FM-15	SCT:04 90	10		32	0	28	-2.1	21	-6	64	13	120		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 2:55	FM-15	SCT:04 110	10		32	0	28	-2.1	21	-6	64	10	120		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 3:15	FM-15	CLR:00	10		32	0	28	-2.1	21	-6	64	9	120		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 3:35	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	10	120		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 3:55	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	9	110		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 4:15	FM-15	BKN:07 100	10		30	-1	27	-2.8	21	-6	69	9	110		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 4:35	FM-15	OVC:08 100	10		30	-1	26	-3.2	19	-7	64	10	120		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 4:55	FM-15	OVC:08 100	10		30	-1	26	-3.2	19	-7	64	11	110		28.75					30.14
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 5:15	FM-15	OVC:08 100	10		30	-1	26	-3.2	19	-7	64	11	120		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 5:35	FM-15	BKN:07 100	10		30	-1	27	-2.8	21	-6	69	13	120		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 5:55	FM-15	BKN:07 100	10		30	-1	27	-2.8	21	-6	69	13	110		28.72					30.11
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 6:15	FM-15	BKN:07 100	10		30	-1	27	-2.8	21	-6	69	11	100		28.72					30.11
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 6:35	FM-15	BKN:07 100	10		30	-1	27	-2.8	21	-6	69	10	100		28.72					30.11

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMP	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMP	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 6:55	FM-15	BKN:07 90	10		30	-1	27	-2.8	21	-6	69	13	110		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 7:15	FM-15	SCT:04 30 BKN:07 36 BKN:07 90	10		32	0	28	-2.1	21	-6	64	13	120		28.75					30.14
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 7:35	FM-15	SCT:04 30 OVC:08 36	10		32	0	28	-2.1	21	-6	64	13	120		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 7:55	FM-15	BKN:07 36	10		32	0	28	-2.1	21	-6	64	13	120		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 8:15	FM-15	BKN:07 32	10		32	0	28	-2.1	21	-6	64	13	120		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 8:35	FM-15	OVC:08 39	10		34	1	30	-1.1	23	-5	65	13	120		28.73					30.12
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 8:55	FM-15	SCT:04 39 SCT:04 100	10		34	1	29	-1.5	21	-6	60	14	110		28.71					30.1
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 9:15	FM-15	SCT:04 100	10		34	1	30	-1.1	23	-5	65	11	120		28.72					30.11
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 9:35	FM-15	SCT:04 38	10		34	1	29	-1.5	21	-6	60	15	140		28.72					30.11
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 9:55	FM-15	BKN:07 36	10		34	1	31	-0.8	25	-4	70	16	130		28.7					30.09
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 10:15	FM-15	BKN:07 36	10		34	1	30	-1.1	23	-5	65	16	130	20	28.68					30.07
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 10:35	FM-15	SCT:04 36	10		36	2	32	-0.1	25	-4	65	17	130	22	28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 10:55	FM-15	CLR:00	10		36	2	31	-0.5	23	-5	60	17	120		28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 11:15	FM-15	SCT:04 70	10		36	2	32	-0.1	25	-4	65	16	130		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 11:35	FM-15	SCT:04 29 BKN:07 70	10		37	3	32	0.2	25	-4	60	15	130		28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 11:55	FM-15	BKN:07 29 OVC:08 70	10		36	2	32	-0.1	25	-4	65	11	140		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 12:15	FM-15	OVC:08 31	10		37	3	32	0.2	25	-4	60	10	120		28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 12:35	FM-15	OVC:08 31	10		37	3	32	0.2	25	-4	60	6	100		28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 12:55	FM-15	OVC:08 29	10		37	3	32	0.2	25	-4	60	8	100		28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 13:15	FM-15	OVC:08 29	7	-RA:02 RA:61	37	3	33	0.6	27	-3	65	8	130		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 13:35	FM-15	OVC:08 33	3	-RA:02 RA:61	36	2	33	0.5	28	-2	75	7	100		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 13:55	FM-15	OVC:08 33	10		37	3	34	1.2	30	-1	75	8	90		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 14:15	FM-15	OVC:08 33	10		37	3	33	0.8	28	-2	70	11	100		28.62					30.01
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 14:35	FM-15	OVC:08 33	10		37	3	33	0.8	28	-2	70	11	110		28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 14:55	FM-15	OVC:08 29	10	-RA:02 RA:61	37	3	34	1.2	30	-1	75	8	110		28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 15:15	FM-15	OVC:08 29	10	-RA:02 RA:61	37	3	33	0.8	28	-2	70	11	110		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 15:36	FM-15	BKN:07 27 OVC:08 44	3	RA:02 RA:62	36	2	34	0.9	30	-1	81	15	100		28.58					29.96
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 15:55	FM-15	BKN:07 27 OVC:08 35	4	-RA:02 RA:61	36	2	34	0.9	30	-1	81	14	100		28.58					29.96
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 16:15	FM-15	OVC:08 25	2.50V	-SN:03 SN:71	36	2	34	0.9	30	-1	81	10	110		28.59					29.97
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 16:35	FM-15	OVC:08 23	10	UP:09	36	2	34	0.9	30	-1	81	10	100		28.59					29.97
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 16:55	FM-15	BKN:07 16 OVC:08 21	7	-DZ:01 DZ:51	36	2	34	0.9	30	-1	81	13	110	16	28.58					29.96
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 17:15	FM-15	OVC:08 14	2.5	UP:09	34	1	33	0.7	32	0	93	13	110	16	28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 17:35	FM-15	OVC:08 12	2	UP:09	34	1	33	0.7	32	0	93	9	110		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 17:55	FM-15	OVC:08 7	1.25	UP:09	34	1	34	1.1	34	1	100	6	110		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 18:15	FM-15	OVC:08 7	2	UP:09	34	1	34	1.1	34	1	100	7	100		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 18:35	FM-15	OVC:08 7	2.5	UP:09	34	1	34	1.1	34	1	100	6	180		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 18:55	FM-15	OVC:08 7	2	UP:09	34	1	34	1.1	34	1	100	3	150		28.59					29.97
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 19:15	FM-15	SCT:04 7 OVC:08 15	2	UP:09	34	1	34	1.1	34	1	100	5	110		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 19:35	FM-15	BKN:07 3 BKN:07 7 OVC:08 14	2	UP:09	34	1	34	1.1	34	1	100	3	110		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 19:55	FM-15	OVC:08 3	1.75	BR:1	34	1	34	1.1	34	1	100	0	0		28.58					29.96
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 20:15	FM-15	OVC:08 3	1.5	BR:1	34	1	34	1.1	34	1	100	0	0		28.58					29.96
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 20:35	FM-15	OVC:08 3	1.5	UP:09	34	1	34	1.1	34	1	100	3	120		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 20:55	FM-15	OVC:08 5	2.5	BR:1	34	1	34	1.1	34	1	100	3	140		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 21:15	FM-15	OVC:08 7	3	BR:1	34	1	34	1.1	34	1	100	6	180		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 21:35	FM-15	OVC:08 7	5	UP:09	34	1	34	1.1	34	1	100	5	190		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 21:55	FM-15	OVC:08 7	5	BR:1	34	1	34	1.1	34	1	100	8	200		28.56					29.94
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 22:15	FM-15	OVC:08 7	2.5	BR:1	34	1	34	1.1	34	1	100	7	230		28.56					29.94
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 22:35	FM-15	OVC:08 5	2	BR:1	34	1	33	0.7	32	0	93	7	220		28.55					29.93
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 22:55	FM-15	OVC:08 5	1.75	BR:1	34	1	33	0.7	32	0	93	6	240		28.55					29.93
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 23:15	FM-15	OVC:08 3	2	BR:1	32	0	32	0	32	0	100	7	250		28.55					29.93

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMPF	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMPF	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 23:35	FM-15	OVC:08 5	2	BR:1	32	0	32	0	32	0	100	7	250		28.54					29.92
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 23:55	FM-15	OVC:08 3	2.5	BR:1	32	0	32	0	32	0	100	7	260		28.54					29.92
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/26/2018 23:59	SOD																			
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 0:15	FM-15	OVC:08 3	2.5	BR:1	32	0	32	0	32	0	100	7	250		28.54					29.92
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 0:35	FM-15	OVC:08 3	3	BR:1	32	0	31	-0.4	30	-1	93	7	260		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 0:55	FM-15	OVC:08 3	3	BR:1	32	0	31	-0.4	30	-1	93	7	280		28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 1:15	FM-15	OVC:08 3	3	BR:1	32	0	31	-0.4	30	-1	93	8	280		28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 1:35	FM-15	OVC:08 3	3	BR:1	32	0	31	-0.4	30	-1	93	9	290		28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 1:55	FM-15	OVC:08 3	2.5	BR:1	32	0	31	-0.4	30	-1	93	8	290		28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 2:15	FM-15	OVC:08 3	3	BR:1	32	0	31	-0.4	30	-1	93	10	290		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 2:35	FM-15	OVC:08 3	3	BR:1	32	0	31	-0.4	30	-1	93	11	280		28.54					29.92
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 2:55	FM-15	OVC:08 3	2	BR:1	32	0	31	-0.4	30	-1	93	11	280		28.55					29.93
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 3:15	FM-15	OVC:08 3	2	BR:1	32	0	31	-0.4	30	-1	93	13	280	16	28.56					29.94
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 3:35	FM-15	OVC:08 3	3	BR:1	32	0	31	-0.4	30	-1	93	10	290		28.56					29.94
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 3:55	FM-15	OVC:08 3	3	BR:1	32	0	31	-0.4	30	-1	93	14	300		28.56					29.94
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 4:15	FM-15	OVC:08 3	3	BR:1	32	0	31	-0.4	30	-1	93	15	300		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 4:35	FM-15	OVC:08 3	3	BR:1	32	0	31	-0.4	30	-1	93	13	310	18	28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 4:55	FM-15	OVC:08 5	3	BR:1	32	0	31	-0.4	30	-1	93	9	310		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 5:15	FM-15	OVC:08 5	4	BR:1	32	0	31	-0.4	30	-1	93	10	300		28.58					29.96
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 5:35	FM-15	OVC:08 7	4	BR:1	32	0	31	-0.4	30	-1	93	8	320		28.58					29.96
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 5:55	FM-15	OVC:08 7	5	BR:1	32	0	31	-0.4	30	-1	93	15	310		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 6:15	FM-15	OVC:08 7	5	BR:1	32	0	31	-0.4	30	-1	93	11	300		28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 6:35	FM-15	OVC:08 9	5	BR:1	32	0	31	-0.4	30	-1	93	11	300	16	28.62					30.01
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 6:55	FM-15	BKN:07 9 OVC:08 13	4	BR:1	32	0	31	-0.4	30	-1	93	10	300		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 7:15	FM-15	BKN:07 7 OVC:08 11	3	BR:1	32	0	31	-0.4	30	-1	93	8	290		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 7:35	FM-15	OVC:08 7	3	BR:1	32	0	31	-0.4	30	-1	93	13	310		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 7:55	FM-15	OVC:08 7	4	BR:1	32	0	31	-0.4	30	-1	93	13	300		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 8:15	FM-15	OVC:08 9	5	BR:1	32	0	31	-0.4	30	-1	93	13	320	17	28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 8:35	FM-15	OVC:08 9	4	BR:1	32	0	31	-0.4	30	-1	93	13	310		28.64					30.03
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 8:55	FM-15	OVC:08 7	4	BR:1	32	0	31	-0.4	30	-1	93	11	300		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 9:15	FM-15	OVC:08 7	5	BR:1	32	0	31	-0.4	30	-1	93	15	310		28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 9:35	FM-15	OVC:08 7	5	BR:1	32	0	31	-0.4	30	-1	93	11	290	17	28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 9:55	FM-15	OVC:08 7	5	BR:1	32	0	31	-0.4	30	-1	93	10	280		28.68					30.07
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 10:15	FM-15	OVC:08 7	5	BR:1	32	0	31	-0.4	30	-1	93	11	290		28.69					30.08
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 10:35	FM-15	OVC:08 7	5	BR:1	34	1	32	0.2	30	-1	87	13	300		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 10:55	FM-15	OVC:08 7	4	BR:1	34	1	32	0.2	30	-1	87	10	300		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 11:15	FM-15	OVC:08 7	5	BR:1	34	1	32	0.2	30	-1	87	8	310		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 11:35	FM-15	OVC:08 7	7		34	1	32	0.2	30	-1	87	11	300		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 11:55	FM-15	OVC:08 7	7		34	1	32	0.2	30	-1	87	13	280	16	28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 12:15	FM-15	OVC:08 9	10		34	1	32	0.2	30	-1	87	11	270		28.68					30.07
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 12:35	FM-15	OVC:08 11	10		36	2	34	0.9	30	-1	81	9	290		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 12:55	FM-15	OVC:08 11	10		36	2	34	0.9	30	-1	81	9	290		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 13:15	FM-15	OVC:08 13	10		37	3	35	1.6	32	0	81	11	310		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 13:35	FM-15	OVC:08 13	10		37	3	35	1.6	32	0	81	10	310		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 13:55	FM-15	OVC:08 13	10		37	3	35	1.6	32	0	81	9	270		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 14:15	FM-15	BKN:07 13	10		37	3	35	1.6	32	0	81	7	280		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 14:35	FM-15	SCT:04 15	10		39	4	36	2.3	32	0	75	8	260		28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 14:55	FM-15	CLR:00	10		41	5	38	3.3	34	1	76	7	240		28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 15:15	FM-15	CLR:00	1																	

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMP	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMP	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 15:55	FM-15	CLR:00	10		43	6	39	3.9	34	1	71	6	270		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 16:15	FM-15	CLR:00	10		43	6	39	3.9	34	1	71	9	240		28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 16:35	FM-15	CLR:00	10		43	6	39	3.9	34	1	71	6	260		28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 16:55	FM-15	CLR:00	10		43	6	39	3.9	34	1	71	6	270		28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 17:15	FM-15	CLR:00	10		43	6	39	3.9	34	1	71	8	250		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 17:35	FM-15	CLR:00	10		43	6	40	4.4	36	2	76	9	220		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 17:55	FM-15	CLR:00	10		41	5	39	3.8	36	2	81	10	230		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 18:15	FM-15	CLR:00	10		39	4	37	2.7	34	1	81	8	240		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 18:35	FM-15	CLR:00	10		37	3	36	2.1	34	1	87	7	230		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 18:55	FM-15	CLR:00	10		36	2	34	1.3	32	0	87	9	220		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 19:15	FM-15	CLR:00	7		34	1	33	0.7	32	0	93	9	220		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 19:35	FM-15	CLR:00	10		34	1	32	0.2	30	-1	87	10	220		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 19:55	FM-15	SCT:04 85	7		34	1	32	0.2	30	-1	87	10	220		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 20:15	FM-15	SCT:04 85	7		34	1	32	0.2	30	-1	87	9	220		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 20:35	FM-15	CLR:00	7		32	0	30	-0.8	28	-2	87	9	230		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 20:55	FM-15	CLR:00	7		32	0	31	-0.4	30	-1	93	8	220		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 21:15	FM-15	CLR:00	7		32	0	31	-0.4	30	-1	93	7	210		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 21:35	FM-15	CLR:00	7		32	0	31	-0.4	30	-1	93	9	220		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 21:55	FM-15	CLR:00	7		32	0	31	-0.4	30	-1	93	8	210		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 22:35	FM-15	CLR:00	7		32	0	30	-0.8	28	-2	87	7	220		28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 22:55	FM-15	SCT:04 85	7		30	-1	30	-1.1	30	-1	100	7	220		28.64					30.03
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 23:15	FM-15	CLR:00	7		30	-1	30	-1.1	30	-1	100	7	210		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 23:35	FM-15	CLR:00	7		30	-1	29	-1.5	28	-2	93	6	210		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 23:55	FM-15	CLR:00	5	BR:1	30	-1	30	-1.1	30	-1	100	7	200		28.62					30.01
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/27/2018 23:59	SOD																			
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 0:15	FM-15	CLR:00	7		30	-1	30	-1.1	30	-1	100	10	200		28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 0:35	FM-15	CLR:00	5	BR:1	30	-1	29	-1.5	28	-2	93	7	200		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 0:55	FM-15	CLR:00	5	BR:1	30	-1	29	-1.5	28	-2	93	6	200		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 1:15	FM-15	CLR:00	7		30	-1	29	-1.5	28	-2	93	7	220		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 1:35	FM-15	CLR:00	7		30	-1	30	-1.1	30	-1	100	7	210		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 1:55	FM-15	CLR:00	7		30	-1	29	-1.5	28	-2	93	7	210		28.59					29.97
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 2:15	FM-15	SCT:04 90	7		30	-1	29	-1.5	28	-2	93	7	200		28.58					29.96
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 2:35	FM-15	SCT:04 90	7		30	-1	29	-1.5	28	-2	93	6	200		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 2:55	FM-15	CLR:00	7		30	-1	29	-1.5	28	-2	93	9	180		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 3:15	FM-15	CLR:00	10		30	-1	29	-1.5	28	-2	93	7	180		28.56					29.94
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 3:35	FM-15	CLR:00	10		30	-1	29	-1.5	28	-2	93	8	180		28.56					29.94
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 3:55	FM-15	CLR:00	10		30	-1	29	-1.5	28	-2	93	9	180		28.56					29.94
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 4:15	FM-15	CLR:00	7		30	-1	29	-1.5	28	-2	93	9	170		28.55					29.93
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 4:35	FM-15	CLR:00	7		30	-1	29	-1.5	28	-2	93	9	180		28.54					29.92
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 4:55	FM-15	SCT:04 90	7		30	-1	29	-1.7	27	-3	86	8	180		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 5:15	FM-15	SCT:04 90	7		30	-1	29	-1.7	27	-3	86	6	190		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 5:35	FM-15	CLR:00	7		30	-1	29	-1.7	27	-3	86	9	180		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 5:55	FM-15	CLR:00	10		30	-1	29	-1.7	27	-3	86	8	180		28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 6:15	FM-15	CLR:00	7		28	-2	28	-2.4	27	-3	93	9	170		28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 6:35	FM-15	CLR:00	7		30	-1	29	-1.7	27	-3	86	8	180		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 6:55	FM-15	SCT:04 100	7		30	-1	29	-1.5	28	-2	93	8	180		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 7:15	FM-15	CLR:00	10		32	0	30	-0.8	28	-2	87	10	190		28.54					29.92
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 7:35	FM-15	CLR:00	10		34	1	32	-0.2	28	-2	81	13	180		28.54					29.92
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 7:55	FM-15	CLR:00	10		36	2	33	0.5	28	-2	75	11	180		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 8:15	FM-15	CLR:00	10		34	1	32	-0.2	28	-2	81	16	170		28.53					29.91

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMP	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMP	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 8:35	FM-15	CLR:00	10		36	2	33	0.5	28	-2	75	15	180		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 8:55	FM-15	CLR:00	10		36	2	34	0.9	30	-1	81	17	170		28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 9:15	FM-15	CLR:00	10		36	2	34	0.9	30	-1	81	15	180		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 9:35	FM-15	CLR:00	10		36	2	34	0.9	30	-1	81	18	180		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 9:55	FM-15	CLR:00	10		36	2	34	0.9	30	-1	81	13	200		28.54					29.92
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 10:15	FM-15	CLR:00	10		36	2	34	0.9	30	-1	81	21	190		28.54					29.92
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 10:35	FM-15	SCT:04 100	10		37	3	36	2.1	34	1	87	16	180		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 10:55	FM-15	CLR:00	10		37	3	36	2.1	34	1	87	14	190		28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 11:15	FM-15	CLR:00	10		39	4	37	2.7	34	1	81	11	190	20	28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 11:35	FM-15	CLR:00	10		43	6	39	3.9	34	1	71	16	210	22	28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 11:55	FM-15	CLR:00	10		43	6	39	3.9	34	1	71	17	210		28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 12:15	FM-15	CLR:00	10		43	6	38	3.1	30	-1	61	16	200		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 12:35	FM-15	CLR:00	10		43	6	39	3.9	34	1	71	20	190	23	28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 12:55	FM-15	CLR:00	10		43	6	40	4.4	36	2	76	18	190	23	28.51					29.89
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 13:15	FM-15	CLR:00	10		45	7	41	5	36	2	71	18	190		28.51					29.89
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 13:35	FM-15	CLR:00	10		45	7	41	5	36	2	71	18	200	23	28.49					29.87
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 13:55	FM-15	CLR:00	10		45	7	41	5	36	2	71	16	210	20	28.48					29.86
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 14:15	FM-15	CLR:00	10		45	7	41	5	36	2	71	13	210	20	28.48					29.86
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 14:35	FM-15	CLR:00	10		46	8	41	5.3	36	2	66	14	220		28.48					29.86
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 14:42	FM-15				46	8			36	2	66	11	230							29.85
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 14:49	FM-15				46	8			37	3	71	10	210							29.85
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 14:55	FM-15	CLR:00	10		46	8	41	5.3	36	2	66	13	220	17	28.47					29.85
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 15:15	FM-15	CLR:00	10		46	8	42	5.5	37	3	71	14	230		28.46					29.84
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 15:35	FM-15	CLR:00	10		48	9	43	5.8	36	2	62	13	240		28.46					29.84
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 15:55	FM-15	CLR:00	10		48	9	43	6.1	37	3	66	16	250	20	28.46					29.84
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 16:15	FM-15	SCT:04 24	10		46	8	42	5.5	37	3	71	13	260		28.47					29.85
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 16:35	FM-15	SCT:04 24	10		46	8	42	5.5	37	3	71	13	280		28.47					29.85
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 16:55	FM-15	CLR:00	10		46	8	42	5.5	37	3	71	9	270		28.47					29.85
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 17:15	FM-15	CLR:00	10		46	8	41	5.3	36	2	66	8	270		28.47					29.85
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 17:35	FM-15	CLR:00	10		45	7	41	5	36	2	71	8	270		28.48					29.86
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 17:55	FM-15	CLR:00	10		45	7	41	5	36	2	71	7	280		28.48					29.86
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 18:15	FM-15	BKN:07 27	10		45	7	41	5	36	2	71	6	260		28.49					29.87
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 18:35	FM-15	OVC:08 25	10		43	6	40	4.6	37	3	81	5	250		28.49					29.87
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 18:55	FM-15	OVC:08 23	10		43	6	40	4.6	37	3	81	7	260		28.5					29.88
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 19:15	FM-15	OVC:08 23	10		43	6	40	4.6	37	3	81	5	290		28.5					29.88
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 19:35	FM-15	SCT:04 17 OVC:08 24	10		43	6	40	4.6	37	3	81	11	310		28.51					29.89
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 19:55	FM-15	BKN:07 27 BKN:07 85	10		43	6	40	4.6	37	3	81	9	300		28.51					29.89
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 20:15	FM-15	SCT:04 24 SCT:04 29 BKN:07 85	10		41	5	39	4	37	3	87	8	300		28.52					29.9
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 20:35	FM-15	OVC:08 22	10		41	5	39	4	37	3	87	9	310		28.53					29.91
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 20:55	FM-15	OVC:08 22	10		39	4	38	3.2	36	2	87	11	320		28.54					29.92
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 21:15	FM-15	OVC:08 24	10		39	4	38	3.2	36	2	87	10	320		28.55					29.93
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 21:35	FM-15	OVC:08 24	10		39	4	38	3.2	36	2	87	9	320		28.55					29.93
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 21:55	FM-15	OVC:08 26	10		39	4	37	2.7	34	1	81	8	320		28.56					29.94
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 22:15	FM-15	OVC:08 26	10		39	4	37	2.7	34	1	81	8	320		28.56					29.94
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 22:35	FM-15	OVC:08 24	10		37	3	36	2.1	34	1	87	8	330		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 22:55	FM-15	OVC:08 24	10		37	3	35	1.6	32	0	81	9	320		28.56					29.95
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 23:15	FM-15	OVC:08 24	10		37	3	34	1.2	30	-1	75	11	330		28.58					29.96
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 23:35	FM-15	BKN:07 24	10		36	2	33	0.5	28	-2	75	15	330		28.58					29.96
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 23:55	FM-15	CLR:00	10		34	1	32	-0.2	28	-2	81	13	320		28.59					29.97
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/28/2018 23:59	SOD																			

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMP	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMP	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 0:15	FM-15	CLR:00	10		32	0	30	-0.8	28	-2	87	9	320		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 0:35	FM-15	CLR:00	10		30	-1	29	-1.7	27	-3	86	10	320		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 0:55	FM-15	SCT:04 95	10		30	-1	29	-1.7	27	-3	86	13	320		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 1:15	FM-15	SCT:04 95	10		30	-1	28	-2.1	25	-4	80	10	330	16	28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 1:35	FM-15	CLR:00	10		28	-2	27	-2.8	25	-4	86	10	330		28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 1:55	FM-15	CLR:00	10		28	-2	27	-2.8	25	-4	86	14	330	22	28.59					29.98
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 2:15	FM-15	CLR:00	10		28	-2	27	-2.8	25	-4	86	11	330	17	28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 2:35	FM-15	CLR:00	10		28	-2	26	-3.2	23	-5	80	14	330		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 2:55	FM-15	CLR:00	10		27	-3	26	-3.5	23	-5	86	15	340	21	28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 3:15	FM-15	SCT:04 95	10		27	-3	25	-3.9	21	-6	80	14	340	18	28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 3:35	FM-15	SCT:04 85	10		27	-3	25	-3.9	21	-6	80	11	340		28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 3:55	FM-15	CLR:00	10		27	-3	25	-3.9	21	-6	80	14	340		28.61					29.99
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 4:15	FM-15	CLR:00	10		27	-3	25	-3.9	21	-6	80	15	340	24	28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 4:35	FM-15	SCT:04 85	10		27	-3	25	-3.9	21	-6	80	15	340		28.61					30
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 4:55	FM-15	CLR:00	10		25	-4	23	-5	19	-7	80	15	330		28.63					30.02
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 5:15	FM-15	CLR:00	10		25	-4	23	-5	19	-7	80	11	340		28.64					30.03
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 5:35	FM-15	SCT:04 85	10		25	-4	23	-5	19	-7	80	13	340	18	28.65					30.04
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 5:55	FM-15	SCT:04 85	10		25	-4	23	-5	19	-7	80	11	340	17	28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 6:15	FM-15	SCT:04 85	10		25	-4	23	-5	19	-7	80	13	340		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 6:35	FM-15	CLR:00	10		25	-4	23	-5	19	-7	80	14	340		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 6:55	FM-15	CLR:00	10		25	-4	23	-5	19	-7	80	14	340		28.68					30.07
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 7:35	FM-15	CLR:00	10		25	-4	23	-5	19	-7	80	16	340		28.69					30.08
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 7:55	FM-15	CLR:00	10		25	-4	23	-5	19	-7	80	14	350		28.69					30.08
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 8:15	FM-15	CLR:00	10		27	-3	25	-3.9	21	-6	80	13	340		28.69					30.08
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 8:35	FM-15	CLR:00	10		27	-3	24	-4.2	19	-7	74	13	340		28.69					30.08
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 8:55	FM-15	CLR:00	10		27	-3	25	-3.9	21	-6	80	13	350		28.7					30.09
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 9:15	FM-15	CLR:00	10		27	-3	24	-4.2	19	-7	74	13	350		28.71					30.1
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 9:35	FM-15	CLR:00	10		28	-2	25	-3.9	19	-7	69	13	360		28.7					30.09
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 9:55	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	13	340		28.71					30.1
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 10:15	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	14	330	18	28.7					30.09
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 10:35	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	13	330	18	28.7					30.09
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 10:55	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	15	340		28.69					30.08
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 11:15	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	14	340		28.68					30.07
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 12:15	FM-15	CLR:00	10		34	1	30	-1.1	23	-5	65	15	340	18	28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 12:35	FM-15	CLR:00	10		34	1	30	-1.1	23	-5	65	15	350		28.66					30.05
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 12:55	FM-15	CLR:00	10		36	2	31	-0.5	23	-5	60	15	330	21	28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 13:15	FM-15	CLR:00	10		36	2	31	-0.5	23	-5	60	18	360	23	28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 13:35	FM-15	CLR:00	10		36	2	31	-0.8	21	-6	56	17	330	24	28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 13:55	FM-15	CLR:00	10		36	2	31	-0.5	23	-5	60	17	350	22	28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 14:15	FM-15	CLR:00	10		36	2	31	-0.8	21	-6	56	17	350	24	28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 14:35	FM-15	CLR:00	10		37	3	31	-0.5	21	-6	52	16	340		28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 14:55	FM-15	CLR:00	10		37	3	31	-0.8	19	-7	48	16	340	23	28.67					30.06
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 15:15	FM-15	CLR:00	10		37	3	31	-0.8	19	-7	48	15	330	22	28.68					30.07
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 15:35	FM-15	CLR:00	10		37	3	31	-0.8	19	-7	48	15	340		28.69					30.08
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 15:55	FM-15	CLR:00	10		37	3	31	-0.8	19	-7	48	16	340	21	28.69					30.08
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 16:15	FM-15	CLR:00	10		37	3	31	-0.8	19	-7	48	16	VRB	22	28.7					30.09
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 16:35	FM-15	CLR:00	10		37	3	30	-0.9	18	-8	45	14	330		28.71					30.1
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 16:55	FM-15	CLR:00	10		37	3	31	-0.8	19	-7	48	15	340	20	28.72					30.11
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 17:15	FM-15	CLR:00	10		37	3	31	-0.8	19	-7	48	14	330		28.72					30.11
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 17:35	FM-15	CLR:00	10		37	3	31	-0.8	19	-7	48	11	330	16	28.72					30.11

Table B-1

STATION	STATION_NAME	ELEVATION	LATITUDE	LONGITUDE	DATE	REPORTTYPE	HOURLYSKYCONDITIONS	HOURLYVISIBILITY	HOURLYPRESENTWEATHERTYPE	HOURLYDRYBULBTEMPF	HOURLYDRYBULBTEMPC	HOURLYWETBULBTEMPF	HOURLYWETBULBTEMPC	HOURLYDewPointTempF	HOURLYDewPointTempC	HOURLYRelativeHumidity	HOURLYWindSpeed	HOURLYWindDirection	HOURLYWindGustSpeed	HOURLYStationPressure	HOURLYPressureTendency	HOURLYPressureChange	HOURLYSeaLevelPressure	HOURLYPrecip	HOURLYAltimeterSetting
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 17:55	FM-15	CLR:00	10		36	2	30	-1.1	19	-7	52	9	340		28.73					30.12
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 18:15	FM-15	CLR:00	10		36	2	30	-1.1	19	-7	52	8	330		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 18:35	FM-15	CLR:00	10		34	1	29	-1.5	21	-6	60	7	330		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 18:55	FM-15	SCT:04 90	10		32	0	28	-2.1	21	-6	64	7	320		28.74					30.13
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 19:15	FM-15	CLR:00	10		32	0	28	-2.1	21	-6	64	5	310		28.75					30.14
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 19:35	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	6	300		28.75					30.14
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 19:55	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	6	290		28.76					30.15
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 20:15	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	7	310		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 20:35	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	7	310		28.77					30.16
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 20:55	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	7	310		28.78					30.17
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 21:15	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	8	310		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 21:35	FM-15	CLR:00	10		30	-1	27	-2.8	21	-6	69	7	310		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 21:55	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	6	310		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 22:15	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	5	290		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 22:35	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	3	300		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 22:55	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	3	300		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 23:15	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	3	300		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 23:35	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	5	300		28.79					30.18
WBAN:04978	DODGE CENTER AIRPORT MN US	397.8	44.01778	-92.83139	3/29/2018 23:55	FM-15	CLR:00	10		28	-2	26	-3.5	21	-6	74	6	300		28.8					30.19

Appendix C

Short-term Sound Level Measurement Data

Table C-1: Short-term Sound Level Measurement Results

S1	Sound Pressure Level							
	Leq	L10	L50	L90	Leq	L10	L50	L90
	dBA	dBA	dBA	dBA	dBC	dBC	dBC	dBC
Daytime	52	53	41	31	63	64	55	50
Nighttime	50	53	28	23	58	59	47	44
S2	Sound Pressure Level							
	Leq	L10	L50	L90	Leq	L10	L50	L90
	dBA	dBA	dBA	dBA	dBC	dBC	dBC	dBC
Daytime	30	33	28	24	48	49	47	46
Nighttime	30	33	29	26	47	49	47	46

Notes:

1. Daytime and nighttime measurements were on March 20, 2018 and March 21, 2018, respectively

Appendix D

DCW Wind Turbine Coordinates

Table D-1: Wind Turbine Coordinates

Wind Turbine ID	Wind Turbine Type	Hub Height (m)	Coordinates NAD83 UTM Zone 15N (meters)	
			X (Easting)	Y (Northing)
1	GE 3.40-140	81	491833.64	4876550.20
2	GE 2.52-116	90	492201.04	4876919.97
3	GE 2.52-116	90	492569.38	4876518.39
4	GE 2.52-116	90	492996.56	4876584.77
5	GE 3.40-140	81	492019.80	4875481.13
6	GE 3.40-140	81	492378.46	4875113.83
7	GE 3.40-140	81	492907.99	4875054.71
8	GE 3.40-140	81	493499.68	4874900.16
9	GE 3.40-140	81	493919.78	4875078.01
10	GE 2.52-116	90	494517.66	4874174.37
11	GE 2.52-116	90	494914.91	4874179.95
12	GE 3.40-140	81	495224.99	4875131.00
13	GE 3.40-140	98	497555.00	4873299.98
14	GE 3.40-140	98	498362.88	4872653.09
15	GE 3.40-140	98	498801.66	4872874.52
16	GE 3.40-140	98	500151.19	4872915.46
17	GE 3.40-140	98	500128.00	4873915.02
18	GE 2.52-116	90	496551.86	4871371.23
19	GE 2.52-116	90	498533.05	4871403.03
20	GE 2.52-116	90	499365.15	4871415.02
21	GE 3.40-140	98	500057.93	4871278.09
22	GE 3.40-140	98	500455.06	4871419.87
23	GE 3.40-140	98	496549.82	4870523.33
24	GE 3.40-140	98	496884.96	4870009.95
25	GE 3.40-140	98	497707.42	4869998.13
26	GE 3.40-140	98	498132.62	4870716.51
27	GE 3.40-140	98	498355.18	4869896.00
28	GE 3.40-140	98	498856.04	4869788.73
29	GE 3.40-140	98	498557.56	4869211.98
30	GE 3.40-140	98	496554.40	4868952.85
31	GE 3.40-140	98	496863.12	4867708.34
32	GE 3.40-140	98	497232.19	4868242.38
33	GE 3.40-140	98	497702.64	4868650.42
34	GE 3.40-140	98	497760.10	4867390.04
35	GE 3.40-140	98	497969.79	4867869.99
36	GE 3.40-140	98	498320.10	4868159.99
37	GE 3.40-140	98	498299.93	4867380.02
38	GE 3.40-140	98	498699.96	4867749.98
39	GE 3.40-140	98	497020.03	4866539.95
40	GE 3.40-140	98	496654.61	4866044.22
41	GE 3.40-140	98	497058.43	4865628.15
42	GE 3.40-140	98	497758.72	4865252.58
43	GE 3.40-140	98	498185.02	4865349.96
44	GE 3.40-140	98	498460.38	4864997.78

Table D-1: Wind Turbine Coordinates

Wind Turbine ID	Wind Turbine Type	Hub Height (m)	Coordinates NAD83 UTM Zone 15N (meters)	
			X (Easting)	Y (Northing)
45	GE 3.40-140	81	501394.99	4873705.00
46	GE 2.52-116	90	501769.66	4873902.40
47	GE 3.40-140	98	502105.17	4873305.04
48	GE 3.40-140	98	502527.18	4873413.71
49	GE 3.40-140	98	503014.54	4873505.98
50	GE 3.40-140	98	503383.44	4873883.37
51	GE 3.40-140	98	503679.97	4873582.99
52	GE 3.40-140	98	501700.04	4872330.14
53	GE 3.40-140	98	502126.00	4872334.64
54	GE 3.40-140	98	502494.94	4872589.99
55	GE 3.40-140	98	503009.99	4872589.99
56	GE 3.40-140	98	503430.06	4872510.03
57	GE 3.40-140	98	501875.01	4871294.85
58	GE 3.40-140 NRO 106	98	502140.74	4870760.46
59	GE 3.40-140	98	502455.04	4870299.87
60	GE 3.40-140 NRO 106	98	503000.05	4870224.87
61	GE 3.40-140 NRO 106	98	503399.99	4870970.10
62	GE 3.40-140	98	503919.96	4871500.10
63	GE 2.52-116	90	504034.89	4871924.89
64	GE 2.52-116	90	504566.05	4871390.30
65	GE 3.40-140	98	505326.98	4871679.98
66	GE 3.40-140	98	503683.30	4870048.74
67	GE 3.40-140	98	504184.96	4870789.95
68	GE 3.40-140	98	504769.97	4870899.97
69	GE 3.40-140	98	505020.03	4870190.00
70	GE 3.40-140	98	505344.97	4869785.03
71	GE 3.40-140	98	506779.98	4870749.95
72	GE 3.40-140	98	507275.54	4870666.61
73	GE 3.40-140	98	506535.07	4870000.09
74	GE 3.40-140	98	507036.52	4870165.95
75	GE 3.40-140	98	502055.00	4869364.97
76	GE 3.40-140	98	502219.93	4868879.99
77	GE 3.40-140	98	503390.01	4868790.00
78	GE 3.40-140	98	503509.98	4869199.95
79	GE 3.40-140	98	503935.02	4869259.99

Appendix E

Sound Level Modeling Results - Tabular

Table E-1A: Modeling Results Sorted by Receptor ID

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
1	492148.90	4867812.87	Non-Participating	29
2	492180.08	4867809.47	Non-Participating	28
3	495444.03	4861638.31	Non-Participating	28
4	495390.98	4877824.97	Non-Participating	33
5	494573.56	4868329.31	Non-Participating	35
6	504299.92	4874836.45	Non-Participating	38
7	509624.70	4872351.24	Non-Participating	30
8	498080.72	4874206.33	Non-Participating	39
9	506037.74	4874748.88	Non-Participating	34
10	506050.32	4874743.43	Non-Participating	34
11	506246.45	4874423.48	Non-Participating	34
12	502839.80	4866861.85	Non-Participating	36
13	502835.06	4866942.95	Non-Participating	36
14	499468.85	4867081.29	Non-Participating	41
15	499700.20	4875114.66	Non-Participating	37
16	502937.95	4869210.18	Participating	47
17	489444.63	4879205.60	Non-Participating	28
18	491159.74	4872616.50	Non-Participating	32
19	499576.26	4876273.51	Non-Participating	33
20	508124.36	4866478.11	Non-Participating	30
21	509652.52	4866311.23	Non-Participating	27
22	500054.15	4861931.65	Non-Participating	29
23	501566.55	4875940.76	Non-Participating	35
24	505360.45	4874306.38	Non-Participating	36
25	508830.24	4869546.99	Non-Participating	34
26	509364.26	4872963.09	Participating	30
27	494034.23	4879211.36	Non-Participating	31
28	494568.65	4867108.30	Non-Participating	34
29	497143.55	4873066.70	Participating	44
30	509431.80	4867835.01	Non-Participating	30
31	499492.96	4875983.78	Non-Participating	34
32	495572.93	4871481.19	Participating	39
33	495552.31	4871411.17	Participating	39
34	493871.98	4874370.65	Participating	45
35	504538.01	4874969.76	Non-Participating	37
36	489643.48	4878761.03	Non-Participating	30
37	493257.01	4865337.79	Non-Participating	30
38	488221.75	4875677.22	Participating	29
39	495765.52	4872848.11	Participating	38
40	503390.38	4875834.17	Non-Participating	35
41	502832.53	4866306.09	Non-Participating	34
42	501440.38	4876069.62	Non-Participating	35
43	503625.79	4876054.09	Non-Participating	35
44	490995.28	4877602.23	Non-Participating	37
45	494598.08	4865480.81	Non-Participating	33
46	500508.85	4876698.70	Non-Participating	33
47	508999.23	4872848.82	Non-Participating	31
48	491762.16	4869588.01	Non-Participating	30
49	495577.58	4865899.35	Non-Participating	38
50	499631.54	4876067.43	Non-Participating	34
51	504442.72	4869750.39	Participating	46

Table E-1A: Modeling Results Sorted by Receptor ID

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
52	499711.80	4861462.44	Non-Participating	28
53	503069.05	4871941.72	Participating	47
54	488218.70	4877029.52	Non-Participating	28
55	488197.62	4877040.78	Non-Participating	28
56	500607.23	4876688.71	Non-Participating	33
57	509728.20	4868620.30	Non-Participating	30
58	494631.94	4878067.90	Non-Participating	34
59	493478.04	4866683.95	Non-Participating	31
60	490904.04	4872049.28	Non-Participating	31
61	501225.17	4871956.07	Non-Participating	45
62	501183.46	4871944.67	Non-Participating	45
63	497067.23	4872202.85	Non-Participating	41
64	493047.36	4873719.28	Participating	39
65	490198.35	4872610.03	Non-Participating	30
66	490231.07	4872594.88	Non-Participating	30
67	490185.97	4872604.25	Non-Participating	30
68	492480.63	4874371.00	Non-Participating	43
69	503825.75	4872775.72	Participating	47
70	499581.44	4875569.38	Non-Participating	35
71	498033.70	4862361.30	Non-Participating	31
72	502794.29	4874913.12	Participating	40
73	502796.00	4874854.78	Participating	41
74	497881.90	4876575.38	Non-Participating	33
75	499526.62	4863072.56	Non-Participating	32
76	493648.84	4863245.61	Non-Participating	28
77	488576.77	4878448.64	Non-Participating	28
78	505966.88	4869878.37	Participating	46
79	494750.75	4877672.55	Non-Participating	34
80	488124.42	4872673.44	Non-Participating	27
81	489743.70	4869646.39	Non-Participating	26
82	505258.78	4866422.16	Non-Participating	33
83	505289.10	4866389.62	Non-Participating	32
84	500430.38	4876723.10	Non-Participating	33
85	494674.40	4874964.71	Participating	45
86	488229.97	4877669.00	Non-Participating	28
87	493327.54	4869945.54	Non-Participating	33
88	500474.45	4876712.64	Non-Participating	33
89	500623.45	4875455.65	Non-Participating	37
90	501103.54	4872965.76	Participating	45
91	491805.15	4879143.63	Non-Participating	32
92	493295.90	4877317.09	Participating	41
93	505521.46	4874472.14	Non-Participating	35
94	508048.16	4868687.71	Non-Participating	35
95	490558.27	4870427.40	Non-Participating	29
96	488455.23	4879188.75	Non-Participating	27
97	499482.01	4870257.86	Non-Participating	44
98	499579.78	4876426.53	Non-Participating	33
99	500954.88	4876712.04	Non-Participating	33
100	495393.83	4877492.70	Participating	34
101	495503.67	4871935.80	Non-Participating	38
102	494809.73	4875554.74	Participating	43

Table E-1A: Modeling Results Sorted by Receptor ID

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
103	494160.31	4874449.84	Participating	47
104	500298.35	4864413.90	Non-Participating	34
105	499582.97	4871955.15	Non-Participating	45
106	493864.69	4865674.98	Non-Participating	32
107	492244.31	4868718.62	Participating	30
108	490664.39	4874465.11	Participating	34
109	492356.73	4868911.94	Participating	30
110	494752.02	4876048.27	Non-Participating	40
111	495573.03	4866602.09	Non-Participating	39
112	492395.06	4872907.23	Participating	35
113	500368.53	4876730.47	Non-Participating	33
114	507701.03	4871155.54	Non-Participating	42
115	499602.96	4863130.00	Non-Participating	32
116	492288.94	4875934.54	Participating	47
117	488579.52	4879153.91	Non-Participating	27
118	491639.96	4866018.48	Non-Participating	28
119	507073.63	4866464.97	Non-Participating	31
120	502717.76	4875399.03	Non-Participating	38
121	505982.22	4866488.49	Non-Participating	32
122	497815.41	4861867.43	Non-Participating	30
123	491772.09	4867257.85	Non-Participating	28
124	491554.77	4874628.63	Participating	40
125	495388.32	4871382.70	Participating	38
126	503168.34	4876081.13	Non-Participating	35
127	501030.87	4874233.06	Non-Participating	44
128	501040.98	4874377.91	Non-Participating	43
129	491888.32	4875933.22	Participating	47
130	493922.16	4871131.52	Non-Participating	34
131	495560.88	4870852.56	Non-Participating	40
132	488299.76	4878423.35	Non-Participating	27
133	498636.66	4872028.29	Non-Participating	45
134	492857.85	4879228.58	Non-Participating	32
135	488237.17	4878728.89	Non-Participating	27
136	488407.42	4879222.82	Non-Participating	27
137	488660.48	4879131.37	Non-Participating	27
138	491517.60	4873118.79	Non-Participating	34
139	495581.70	4867569.37	Non-Participating	39
140	509724.36	4871619.32	Non-Participating	31
141	496797.40	4867179.31	Participating	46
142	493147.64	4867171.40	Non-Participating	31
143	491208.49	4877594.08	Non-Participating	38
144	495513.20	4877563.58	Non-Participating	33
145	491932.00	4870388.39	Participating	31
146	493183.89	4865808.35	Non-Participating	30
147	493234.84	4871143.88	Non-Participating	33
148	488176.82	4874444.29	Non-Participating	28
149	492375.72	4868476.15	Non-Participating	30
150	504458.08	4864371.22	Non-Participating	29
151	489544.91	4879213.73	Non-Participating	29
152	495267.53	4874447.81	Participating	46
153	492103.49	4871307.03	Non-Participating	31

Table E-1A: Modeling Results Sorted by Receptor ID

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
154	492791.30	4869909.10	Participating	32
155	493559.19	4872640.63	Non-Participating	36
156	492888.38	4871222.75	Non-Participating	33
157	500491.51	4876706.12	Non-Participating	33
158	508018.56	4869420.73	Non-Participating	38
159	497144.63	4877768.68	Non-Participating	31
160	506068.93	4870747.29	Non-Participating	44
161	495577.32	4865576.05	Non-Participating	38
162	501089.42	4875368.23	Non-Participating	37
163	506656.97	4864586.31	Non-Participating	28
164	500941.84	4874531.82	Participating	42
165	505975.17	4867859.30	Non-Participating	35
166	508144.63	4872272.89	Non-Participating	35
167	491147.12	4868792.53	Non-Participating	29
168	495131.09	4872888.37	Non-Participating	38
169	500930.64	4876656.51	Non-Participating	33
170	498210.22	4861540.63	Non-Participating	29
171	495589.79	4864552.29	Non-Participating	35
172	490476.84	4870316.70	Non-Participating	25
173	495153.79	4877778.54	Non-Participating	33
174	507576.91	4867930.10	Non-Participating	33
175	495774.75	4871932.37	Participating	39
176	492942.35	4877694.92	Non-Participating	40
177	493256.63	4877818.13	Non-Participating	38
178	488305.00	4879226.91	Non-Participating	26
179	492013.05	4870129.41	Participating	31
180	490540.60	4874928.89	Participating	36
181	490740.99	4874350.24	Non-Participating	35
182	492825.92	4874335.43	Participating	43
183	497791.37	4877758.09	Non-Participating	31
184	499586.33	4876218.60	Non-Participating	34
185	502733.21	4864639.89	Non-Participating	31
186	499027.32	4874481.53	Non-Participating	39
187	495454.20	4863810.52	Non-Participating	32
188	490478.72	4872689.88	Non-Participating	31
189	490278.72	4875981.79	Non-Participating	35
190	500749.17	4862127.79	Non-Participating	29
191	500757.86	4862075.69	Non-Participating	29
192	504107.57	4874903.13	Non-Participating	38
193	496567.40	4861683.18	Non-Participating	29
194	498696.73	4865948.08	Non-Participating	42
195	489845.83	4872269.79	Non-Participating	29
196	502511.25	4875918.65	Non-Participating	36
197	506867.25	4873425.96	Non-Participating	35
198	489825.59	4877177.74	Non-Participating	33
199	495448.22	4863162.40	Non-Participating	31
200	492485.87	4872667.38	Participating	34
201	490726.89	4869031.52	Non-Participating	28
202	489435.33	4878830.81	Non-Participating	29
203	491925.48	4871433.16	Non-Participating	32
204	490181.91	4871393.10	Non-Participating	29

Table E-1A: Modeling Results Sorted by Receptor ID

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
205	503040.46	4877305.74	Non-Participating	32
206	507720.87	4873679.54	Non-Participating	31
207	491353.72	4872843.53	Non-Participating	31
208	499483.98	4870832.33	Non-Participating	45
209	502915.25	4871061.73	Participating	47
210	502825.89	4871089.68	Participating	47
211	509723.09	4870758.45	Non-Participating	31
212	496786.19	4867096.04	Participating	46
213	488850.02	4874111.98	Non-Participating	29
214	495966.80	4867986.23	Non-Participating	41
215	495966.13	4868005.71	Non-Participating	41
216	496208.01	4878176.00	Non-Participating	31
217	501117.53	4871025.47	Non-Participating	44
218	509646.97	4871517.51	Non-Participating	31
219	489915.77	4877879.58	Non-Participating	32
220	492895.31	4868806.16	Non-Participating	29
221	502995.95	4877296.70	Non-Participating	32
222	501003.67	4876706.51	Non-Participating	33
223	492845.37	4867800.41	Non-Participating	31
224	488996.21	4876058.27	Participating	31
225	494785.68	4875094.79	Participating	46
226	500169.04	4876581.94	Non-Participating	33
227	495593.56	4863852.66	Non-Participating	33
228	502731.49	4871786.99	Participating	46
229	501213.17	4868148.37	Non-Participating	39
230	501099.20	4867929.07	Non-Participating	38
231	507989.46	4871655.59	Non-Participating	37
232	492984.78	4862963.95	Non-Participating	27
233	499708.68	4861562.23	Non-Participating	28
234	501207.50	4876670.87	Non-Participating	33
235	495449.98	4868723.71	Non-Participating	39
236	492158.99	4868443.65	Participating	29
237	492202.23	4868471.49	Participating	30
238	490317.49	4876072.38	Non-Participating	36
239	490772.87	4868330.67	Non-Participating	26
240	504474.32	4874800.84	Non-Participating	38
241	499451.86	4876209.11	Non-Participating	34
242	497981.30	4877738.38	Non-Participating	31
243	503983.64	4867834.43	Participating	39
244	504760.55	4871962.27	Participating	46
245	507916.22	4872759.08	Non-Participating	34
246	500109.86	4876571.91	Non-Participating	33
247	499493.32	4876494.63	Non-Participating	33
248	500792.52	4876671.42	Non-Participating	33
249	493001.46	4871141.57	Non-Participating	33
250	505468.21	4874567.16	Non-Participating	35
251	504293.80	4875657.39	Non-Participating	35
252	499548.84	4861796.60	Non-Participating	29
253	508150.60	4868038.13	Non-Participating	33
254	488314.12	4874924.71	Participating	28
255	502745.82	4868089.17	Non-Participating	42

Table E-1A: Modeling Results Sorted by Receptor ID

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
256	491441.79	4870295.15	Participating	30
257	491419.59	4866969.08	Non-Participating	21
258	493748.19	4873206.06	Non-Participating	38
259	499574.91	4877748.37	Non-Participating	31
260	500570.48	4876697.94	Non-Participating	33
261	500682.67	4876686.29	Non-Participating	33
262	489807.34	4873556.75	Non-Participating	31
263	493660.68	4869127.12	Non-Participating	33
264	493008.97	4868796.76	Participating	32
265	491521.01	4869811.96	Non-Participating	27
266	498071.67	4876876.94	Non-Participating	32
267	491030.47	4876061.23	Participating	40
268	490953.76	4877850.89	Non-Participating	36
269	504925.86	4874621.85	Non-Participating	37
270	504273.69	4875741.16	Non-Participating	35
271	496127.52	4879185.09	Non-Participating	30
272	488684.76	4877538.01	Non-Participating	29
273	492380.19	4863158.39	Non-Participating	26
274	499523.83	4869059.24	Non-Participating	42
275	492212.61	4877378.62	Participating	45
276	494947.99	4878856.51	Non-Participating	31
277	489073.80	4875419.12	Non-Participating	31
278	492233.76	4877556.00	Participating	42
279	489833.11	4877912.50	Non-Participating	32
280	493769.89	4875949.78	Participating	43
281	493718.91	4875916.68	Participating	43
282	494098.64	4876122.28	Participating	41
283	504379.21	4866974.98	Non-Participating	35
284	504371.08	4866947.02	Non-Participating	35
285	491453.41	4874743.92	Participating	40
286	489909.66	4874272.91	Participating	32
287	489907.11	4874247.07	Participating	32
288	492532.30	4873484.11	Non-Participating	37
289	488299.49	4879147.02	Non-Participating	27
290	502850.33	4865135.09	Non-Participating	32
291	501192.38	4875114.79	Non-Participating	39
292	502719.54	4876996.39	Non-Participating	32
293	499678.09	4872538.62	Non-Participating	45
294	495398.34	4862952.06	Non-Participating	30
295	506546.78	4872867.33	Non-Participating	37
296	501224.93	4875033.82	Non-Participating	39
297	496419.85	4872754.66	Non-Participating	39
298	491327.24	4876003.33	Non-Participating	43
299	499578.51	4878480.97	Non-Participating	30
300	500931.24	4876716.77	Non-Participating	33
301	488302.80	4873560.59	Non-Participating	28
302	494852.79	4872697.89	Non-Participating	38
303	502421.45	4876071.99	Non-Participating	35
304	505348.39	4876079.30	Non-Participating	32
305	500868.27	4876669.90	Non-Participating	33
306	493138.15	4874000.89	Participating	41

Table E-1A: Modeling Results Sorted by Receptor ID

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
307	494040.64	4868103.53	Non-Participating	33
308	496006.82	4876086.98	Participating	37
309	491215.79	4868919.33	Non-Participating	29
310	494001.93	4873709.24	Participating	42
311	499611.85	4876413.28	Non-Participating	33
312	504182.95	4874445.24	Participating	41
313	499811.09	4868052.86	Non-Participating	40
314	495349.04	4870249.03	Non-Participating	39
315	488228.07	4878434.32	Non-Participating	27
316	491442.10	4872910.02	Non-Participating	33
317	503487.85	4875801.04	Non-Participating	36
318	502760.12	4865050.38	Non-Participating	32
319	499494.76	4877405.80	Non-Participating	31
320	507907.62	4864779.23	Non-Participating	27
321	504300.61	4875884.53	Non-Participating	34
322	490143.16	4871129.16	Non-Participating	29
323	489826.64	4875986.81	Non-Participating	33
324	494999.19	4865577.98	Non-Participating	35
325	489115.47	4875427.87	Non-Participating	31
326	504059.72	4875949.28	Non-Participating	34
327	494233.58	4862515.25	Non-Participating	28
328	493087.73	4876095.24	Participating	46
329	505014.97	4874528.13	Non-Participating	37
330	505833.99	4874138.56	Non-Participating	35
331	488245.43	4879102.59	Non-Participating	27
332	495596.87	4865310.03	Non-Participating	37
333	495246.75	4873763.89	Participating	44
334	502864.73	4864320.41	Non-Participating	30
335	499067.20	4863010.71	Non-Participating	32
336	488635.60	4877560.13	Non-Participating	29
337	491477.34	4878458.84	Non-Participating	35
338	488370.70	4879229.42	Non-Participating	27
339	491586.16	4871267.36	Non-Participating	31
340	506219.35	4873319.67	Non-Participating	36
341	505944.93	4866305.68	Non-Participating	32
342	490485.73	4874353.08	Participating	34
343	505959.74	4875672.79	Non-Participating	32
344	503082.57	4875966.50	Non-Participating	35
345	499507.02	4873983.67	Non-Participating	43
346	499493.07	4874005.43	Non-Participating	43
347	508114.92	4865669.97	Participating	28
348	508112.13	4869543.81	Non-Participating	38
349	491741.81	4870251.28	Non-Participating	30
350	502824.36	4875679.02	Non-Participating	36
351	488336.85	4876851.24	Non-Participating	29
352	495596.99	4864158.82	Non-Participating	34
353	491690.59	4870352.19	Non-Participating	30
354	508881.77	4871158.61	Non-Participating	34
355	502671.38	4875862.64	Non-Participating	36
356	505835.12	4873648.89	Non-Participating	36
357	503841.78	4864815.50	Non-Participating	30

Table E-1A: Modeling Results Sorted by Receptor ID

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
358	493137.26	4879037.00	Non-Participating	33
359	495018.61	4862796.39	Non-Participating	29
360	491382.19	4865101.53	Non-Participating	27
361	488227.26	4874360.15	Participating	28
362	494673.57	4875982.30	Non-Participating	40
363	499603.78	4875103.88	Non-Participating	37
364	501230.12	4875352.04	Non-Participating	38
365	508497.51	4873580.91	Non-Participating	31
366	508610.68	4873584.75	Non-Participating	31
367	508645.50	4873585.73	Non-Participating	31
368	506061.93	4874108.69	Non-Participating	35
369	500547.66	4876700.33	Non-Participating	33
370	506051.62	4871490.73	Non-Participating	43
371	499003.18	4875289.99	Non-Participating	36
372	493163.47	4862892.03	Non-Participating	27
373	495733.86	4877787.86	Non-Participating	33
374	488331.26	4876045.64	Participating	29
375	495703.45	4874365.14	Participating	42
376	493010.79	4877410.17	Participating	42
377	491814.47	4869464.04	Participating	30
378	505131.50	4874516.31	Non-Participating	36
379	493828.30	4866305.38	Non-Participating	32
380	494525.65	4872748.24	Non-Participating	38
381	507887.22	4870232.34	Participating	42
382	501220.91	4863779.36	Non-Participating	31
383	502811.08	4875791.86	Non-Participating	36
384	500691.52	4871972.10	Non-Participating	45
385	509717.05	4872284.24	Non-Participating	30
386	496555.95	4874246.61	Participating	38
387	492199.55	4873593.52	Participating	37
388	497898.95	4862420.50	Non-Participating	31
389	502722.77	4875265.62	Non-Participating	38
390	499511.63	4876710.19	Non-Participating	33
391	489397.15	4874448.48	Participating	31
392	495560.39	4869683.96	Non-Participating	40
393	494677.85	4874842.56	Participating	46
394	495476.72	4865142.67	Non-Participating	36
395	505419.99	4874473.85	Non-Participating	36
396	506061.42	4865852.28	Non-Participating	31
397	506082.39	4865857.89	Non-Participating	31
398	509057.18	4869533.17	Non-Participating	33
399	489683.66	4871204.50	Non-Participating	28
400	497395.94	4863196.86	Non-Participating	34
401	509081.25	4866514.23	Non-Participating	28
402	496393.62	4861524.14	Non-Participating	28
403	493409.85	4872818.20	Non-Participating	36
404	504438.28	4868964.58	Participating	45
405	500749.57	4876674.35	Non-Participating	33
406	499586.30	4876513.64	Non-Participating	33
407	501133.29	4869524.33	Non-Participating	42
408	488226.20	4877367.74	Non-Participating	28

Table E-1A: Modeling Results Sorted by Receptor ID

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
409	491716.82	4878333.38	Non-Participating	36
410	495595.08	4861914.80	Non-Participating	28
411	495437.61	4866427.58	Participating	38
412	491558.71	4870331.03	Non-Participating	30
413	494862.10	4876074.35	Non-Participating	39
414	492089.64	4871150.41	Participating	31
415	495468.48	4864632.88	Non-Participating	35
416	493766.86	4871238.86	Non-Participating	34
417	509722.75	4871708.96	Non-Participating	31
418	501064.43	4868684.20	Non-Participating	40
419	502505.60	4875781.28	Non-Participating	36
420	497293.09	4874334.76	Non-Participating	38
421	497274.63	4874334.92	Non-Participating	38
422	497256.16	4874334.77	Non-Participating	38
423	497237.89	4874334.67	Non-Participating	38
424	497219.31	4874334.59	Non-Participating	38
425	497200.95	4874334.85	Non-Participating	38
426	497278.72	4874353.53	Non-Participating	38
427	497257.81	4874352.60	Non-Participating	38
428	497236.58	4874352.64	Non-Participating	38
429	497221.47	4874352.52	Non-Participating	38
430	497200.99	4874369.50	Non-Participating	38
431	497219.57	4874369.71	Non-Participating	38
432	497237.79	4874369.57	Non-Participating	38
433	497256.20	4874369.63	Non-Participating	38
434	497274.63	4874369.66	Non-Participating	38
435	497293.00	4874369.73	Non-Participating	38
436	500886.20	4876660.66	Non-Participating	33
437	499668.60	4875349.36	Non-Participating	36
438	500770.03	4876675.90	Non-Participating	33
439	506995.22	4872765.17	Non-Participating	36
440	499639.21	4874370.00	Non-Participating	42
441	490945.40	4879140.93	Non-Participating	31
442	495598.94	4875650.06	Participating	41
443	492906.37	4875984.85	Participating	46
444	509479.19	4869914.41	Non-Participating	32
445	501290.11	4862407.81	Non-Participating	29
446	488509.35	4879213.50	Non-Participating	27
447	506635.17	4867819.96	Non-Participating	35
448	506437.32	4875179.84	Non-Participating	32
449	500652.58	4876684.25	Non-Participating	33
450	499654.24	4863571.20	Non-Participating	33
451	507535.22	4871149.63	Non-Participating	44
452	500451.92	4876714.42	Non-Participating	33
453	508143.08	4871003.16	Non-Participating	39
454	500843.70	4876652.47	Non-Participating	33
455	508917.86	4873581.47	Non-Participating	30
456	501209.40	4869298.05	Participating	42
457	502417.67	4875910.23	Non-Participating	36
458	497283.92	4872250.10	Non-Participating	41
459	500981.00	4876708.76	Non-Participating	33

Table E-1A: Modeling Results Sorted by Receptor ID

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
460	496395.27	4863671.46	Non-Participating	34
461	494020.79	4868808.31	Non-Participating	34
462	490427.86	4873183.64	Non-Participating	32
463	490497.29	4879284.50	Non-Participating	30
464	491468.31	4871037.31	Non-Participating	30
465	490452.59	4873194.31	Non-Participating	32
466	495562.49	4870203.57	Participating	40
467	491620.99	4872745.10	Non-Participating	33
468	500723.37	4876670.77	Non-Participating	33
469	507857.09	4872987.73	Participating	33
470	498631.77	4875978.22	Non-Participating	34
471	499698.91	4871923.64	Participating	45
472	504468.79	4869548.16	Participating	46
473	502756.22	4863425.02	Non-Participating	29
474	490837.88	4875989.18	Non-Participating	39
475	492326.49	4874457.09	Participating	43
476	490247.04	4876072.83	Non-Participating	35
477	496021.63	4868651.59	Participating	43
478	489719.66	4878734.68	Non-Participating	30
479	491912.40	4874442.94	Participating	41
480	492335.56	4877666.68	Non-Participating	41
481	494755.62	4867301.87	Non-Participating	35
482	488311.29	4878360.36	Non-Participating	28
483	502759.90	4866445.66	Non-Participating	34
484	500348.72	4876733.11	Non-Participating	33
485	505318.66	4874468.86	Non-Participating	36
486	501125.52	4866792.07	Non-Participating	36
487	508605.03	4873649.14	Participating	31
488	499202.59	4863171.88	Non-Participating	33
489	495135.78	4868817.65	Non-Participating	37
490	494741.77	4874889.79	Participating	46
491	492757.62	4877748.96	Non-Participating	40
492	490731.38	4870543.18	Non-Participating	29
493	490349.33	4873858.84	Non-Participating	33
494	499637.54	4876318.99	Non-Participating	34
495	496785.28	4877588.42	Non-Participating	32
496	500627.99	4876689.66	Non-Participating	33
497	508252.48	4868033.65	Non-Participating	32
498	509725.01	4867937.72	Non-Participating	29
499	505981.82	4864375.37	Non-Participating	28
500	499436.27	4878799.75	Non-Participating	29
501	506077.00	4874303.87	Non-Participating	34
502	496744.15	4869518.04	Non-Participating	46
503	490319.60	4876916.87	Non-Participating	35
504	489803.92	4873069.39	Non-Participating	30
505	492302.79	4874377.83	Participating	43
506	495306.29	4865922.44	Non-Participating	37
507	505185.78	4874513.54	Non-Participating	36
508	499597.88	4876172.38	Non-Participating	33
509	501365.76	4862090.52	Non-Participating	28
510	504360.97	4869658.55	Participating	46

Table E-1A: Modeling Results Sorted by Receptor ID

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
511	497691.90	4869423.21	Non-Participating	47
512	497142.14	4873103.16	Participating	45
513	496060.29	4874587.30	Participating	40
514	495126.58	4870677.51	Non-Participating	38
515	492250.67	4877501.38	Participating	43
516	490521.74	4868389.31	Non-Participating	26
517	492281.45	4872422.94	Participating	34
518	500409.09	4876727.57	Non-Participating	33
519	503747.13	4874987.28	Participating	39
520	506985.27	4871798.35	Non-Participating	40
521	496705.42	4877845.55	Non-Participating	31
522	500389.56	4876729.01	Non-Participating	33
523	505048.39	4874549.97	Non-Participating	37
524	504946.69	4872040.72	Participating	46
525	489918.96	4870356.26	Non-Participating	26
526	494169.21	4873281.87	Participating	40
527	505573.00	4874186.08	Non-Participating	36
528	499366.96	4863166.72	Non-Participating	33
529	499616.32	4874178.09	Participating	43
530	509643.87	4871308.65	Non-Participating	31
531	499067.37	4872230.94	Participating	45
532	489306.45	4874282.73	Participating	31
533	496489.80	4869537.38	Participating	45
534	505164.50	4872318.94	Participating	43
535	494634.19	4870301.00	Non-Participating	36
536	499492.38	4869310.44	Non-Participating	43
537	504630.53	4874072.92	Non-Participating	40
538	504552.69	4874040.29	Non-Participating	40
539	504556.13	4874084.02	Non-Participating	40
540	504547.30	4874140.68	Non-Participating	40
541	502725.31	4874382.87	Participating	44
542	501527.90	4872857.67	Participating	47
543	504972.65	4872837.46	Non-Participating	41
544	504438.06	4874785.50	Non-Participating	38
545	504203.57	4872854.80	Participating	44
546	504139.68	4874436.98	Participating	41
547	504646.40	4874483.32	Non-Participating	38
548	503999.63	4872857.70	Participating	45
549	504935.78	4872740.79	Non-Participating	42
550	491361.28	4865072.21	Non-Participating	27
551	491649.13	4864075.81	Non-Participating	26
552	491087.39	4863167.93	Non-Participating	25
553	491823.21	4863310.08	Non-Participating	26
554	492097.62	4863009.42	Non-Participating	26

Table E-1B: Modeling Results Sorted by Level

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
209	502915.25	4871061.73	Participating	47
53	503069.05	4871941.72	Participating	47
69	503825.75	4872775.72	Participating	47
542	501527.90	4872857.67	Participating	47
16	502937.95	4869210.18	Participating	47
116	492288.94	4875934.54	Participating	47
210	502825.89	4871089.68	Participating	47
129	491888.32	4875933.22	Participating	47
103	494160.31	4874449.84	Participating	47
511	497691.90	4869423.21	Non-Participating	47
502	496744.15	4869518.04	Non-Participating	46
244	504760.55	4871962.27	Participating	46
510	504360.97	4869658.55	Participating	46
228	502731.49	4871786.99	Participating	46
225	494785.68	4875094.79	Participating	46
51	504442.72	4869750.39	Participating	46
152	495267.53	4874447.81	Participating	46
328	493087.73	4876095.24	Participating	46
524	504946.69	4872040.72	Participating	46
141	496797.40	4867179.31	Participating	46
443	492906.37	4875984.85	Participating	46
472	504468.79	4869548.16	Participating	46
490	494741.77	4874889.79	Participating	46
212	496786.19	4867096.04	Participating	46
393	494677.85	4874842.56	Participating	46
78	505966.88	4869878.37	Participating	46
548	503999.63	4872857.70	Participating	45
61	501225.17	4871956.07	Non-Participating	45
533	496489.80	4869537.38	Participating	45
133	498636.66	4872028.29	Non-Participating	45
471	499698.91	4871923.64	Participating	45
208	499483.98	4870832.33	Non-Participating	45
85	494674.40	4874964.71	Participating	45
34	493871.98	4874370.65	Participating	45
62	501183.46	4871944.67	Non-Participating	45
105	499582.97	4871955.15	Non-Participating	45
384	500691.52	4871972.10	Non-Participating	45
275	492212.61	4877378.62	Participating	45
531	499067.37	4872230.94	Participating	45
90	501103.54	4872965.76	Participating	45
293	499678.09	4872538.62	Non-Participating	45
404	504438.28	4868964.58	Participating	45
512	497142.14	4873103.16	Participating	45
217	501117.53	4871025.47	Non-Participating	44
160	506068.93	4870747.29	Non-Participating	44
29	497143.55	4873066.70	Participating	44
545	504203.57	4872854.80	Participating	44
127	501030.87	4874233.06	Non-Participating	44
541	502725.31	4874382.87	Participating	44
451	507535.22	4871149.63	Non-Participating	44
333	495246.75	4873763.89	Participating	44

Table E-1B: Modeling Results Sorted by Level

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
97	499482.01	4870257.86	Non-Participating	44
534	505164.50	4872318.94	Participating	43
475	492326.49	4874457.09	Participating	43
182	492825.92	4874335.43	Participating	43
102	494809.73	4875554.74	Participating	43
515	492250.67	4877501.38	Participating	43
128	501040.98	4874377.91	Non-Participating	43
477	496021.63	4868651.59	Participating	43
68	492480.63	4874371.00	Non-Participating	43
529	499616.32	4874178.09	Participating	43
536	499492.38	4869310.44	Non-Participating	43
281	493718.91	4875916.68	Participating	43
370	506051.62	4871490.73	Non-Participating	43
345	499507.02	4873983.67	Non-Participating	43
280	493769.89	4875949.78	Participating	43
298	491327.24	4876003.33	Non-Participating	43
346	499493.07	4874005.43	Non-Participating	43
505	492302.79	4874377.83	Participating	43
278	492233.76	4877556.00	Participating	42
194	498696.73	4865948.08	Non-Participating	42
114	507701.03	4871155.54	Non-Participating	42
310	494001.93	4873709.24	Participating	42
274	499523.83	4869059.24	Non-Participating	42
381	507887.22	4870232.34	Participating	42
164	500941.84	4874531.82	Participating	42
456	501209.40	4869298.05	Participating	42
376	493010.79	4877410.17	Participating	42
440	499639.21	4874370.00	Non-Participating	42
375	495703.45	4874365.14	Participating	42
549	504935.78	4872740.79	Non-Participating	42
407	501133.29	4869524.33	Non-Participating	42
255	502745.82	4868089.17	Non-Participating	42
458	497283.92	4872250.10	Non-Participating	41
442	495598.94	4875650.06	Participating	41
479	491912.40	4874442.94	Participating	41
92	493295.90	4877317.09	Participating	41
480	492335.56	4877666.68	Non-Participating	41
306	493138.15	4874000.89	Participating	41
214	495966.80	4867986.23	Non-Participating	41
215	495966.13	4868005.71	Non-Participating	41
63	497067.23	4872202.85	Non-Participating	41
546	504139.68	4874436.98	Participating	41
543	504972.65	4872837.46	Non-Participating	41
282	494098.64	4876122.28	Participating	41
14	499468.85	4867081.29	Non-Participating	41
73	502796.00	4874854.78	Participating	41
312	504182.95	4874445.24	Participating	41
285	491453.41	4874743.92	Participating	40
538	504552.69	4874040.29	Non-Participating	40
267	491030.47	4876061.23	Participating	40
72	502794.29	4874913.12	Participating	40

Table E-1B: Modeling Results Sorted by Level

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
124	491554.77	4874628.63	Participating	40
539	504556.13	4874084.02	Non-Participating	40
313	499811.09	4868052.86	Non-Participating	40
362	494673.57	4875982.30	Non-Participating	40
540	504547.30	4874140.68	Non-Participating	40
131	495560.88	4870852.56	Non-Participating	40
418	501064.43	4868684.20	Non-Participating	40
491	492757.62	4877748.96	Non-Participating	40
526	494169.21	4873281.87	Participating	40
466	495562.49	4870203.57	Participating	40
537	504630.53	4874072.92	Non-Participating	40
176	492942.35	4877694.92	Non-Participating	40
110	494752.02	4876048.27	Non-Participating	40
520	506985.27	4871798.35	Non-Participating	40
513	496060.29	4874587.30	Participating	40
392	495560.39	4869683.96	Non-Participating	40
413	494862.10	4876074.35	Non-Participating	39
175	495774.75	4871932.37	Participating	39
32	495572.93	4871481.19	Participating	39
33	495552.31	4871411.17	Participating	39
64	493047.36	4873719.28	Participating	39
296	501224.93	4875033.82	Non-Participating	39
243	503983.64	4867834.43	Participating	39
453	508143.08	4871003.16	Non-Participating	39
8	498080.72	4874206.33	Non-Participating	39
297	496419.85	4872754.66	Non-Participating	39
519	503747.13	4874987.28	Participating	39
229	501213.17	4868148.37	Non-Participating	39
235	495449.98	4868723.71	Non-Participating	39
291	501192.38	4875114.79	Non-Participating	39
474	490837.88	4875989.18	Non-Participating	39
139	495581.70	4867569.37	Non-Participating	39
314	495349.04	4870249.03	Non-Participating	39
186	499027.32	4874481.53	Non-Participating	39
111	495573.03	4866602.09	Non-Participating	39
125	495388.32	4871382.70	Participating	38
192	504107.57	4874903.13	Non-Participating	38
49	495577.58	4865899.35	Non-Participating	38
258	493748.19	4873206.06	Non-Participating	38
420	497293.09	4874334.76	Non-Participating	38
421	497274.63	4874334.92	Non-Participating	38
422	497256.16	4874334.77	Non-Participating	38
168	495131.09	4872888.37	Non-Participating	38
101	495503.67	4871935.80	Non-Participating	38
423	497237.89	4874334.67	Non-Participating	38
424	497219.31	4874334.59	Non-Participating	38
389	502722.77	4875265.62	Non-Participating	38
425	497200.95	4874334.85	Non-Participating	38
426	497278.72	4874353.53	Non-Participating	38
427	497257.81	4874352.60	Non-Participating	38
428	497236.58	4874352.64	Non-Participating	38

Table E-1B: Modeling Results Sorted by Level

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
6	504299.92	4874836.45	Non-Participating	38
386	496555.95	4874246.61	Participating	38
429	497221.47	4874352.52	Non-Participating	38
435	497293.00	4874369.73	Non-Participating	38
434	497274.63	4874369.66	Non-Participating	38
433	497256.20	4874369.63	Non-Participating	38
430	497200.99	4874369.50	Non-Participating	38
431	497219.57	4874369.71	Non-Participating	38
432	497237.79	4874369.57	Non-Participating	38
177	493256.63	4877818.13	Non-Participating	38
143	491208.49	4877594.08	Non-Participating	38
39	495765.52	4872848.11	Participating	38
230	501099.20	4867929.07	Non-Participating	38
544	504438.06	4874785.50	Non-Participating	38
547	504646.40	4874483.32	Non-Participating	38
161	495577.32	4865576.05	Non-Participating	38
411	495437.61	4866427.58	Participating	38
240	504474.32	4874800.84	Non-Participating	38
364	501230.12	4875352.04	Non-Participating	38
514	495126.58	4870677.51	Non-Participating	38
120	502717.76	4875399.03	Non-Participating	38
158	508018.56	4869420.73	Non-Participating	38
348	508112.13	4869543.81	Non-Participating	38
302	494852.79	4872697.89	Non-Participating	38
380	494525.65	4872748.24	Non-Participating	38
162	501089.42	4875368.23	Non-Participating	37
15	499700.20	4875114.66	Non-Participating	37
231	507989.46	4871655.59	Non-Participating	37
489	495135.78	4868817.65	Non-Participating	37
363	499603.78	4875103.88	Non-Participating	37
332	495596.87	4865310.03	Non-Participating	37
288	492532.30	4873484.11	Non-Participating	37
387	492199.55	4873593.52	Participating	37
44	490995.28	4877602.23	Non-Participating	37
35	504538.01	4874969.76	Non-Participating	37
89	500623.45	4875455.65	Non-Participating	37
269	504925.86	4874621.85	Non-Participating	37
506	495306.29	4865922.44	Non-Participating	37
308	496006.82	4876086.98	Participating	37
329	505014.97	4874528.13	Non-Participating	37
295	506546.78	4872867.33	Non-Participating	37
523	505048.39	4874549.97	Non-Participating	37
350	502824.36	4875679.02	Non-Participating	36
437	499668.60	4875349.36	Non-Participating	36
356	505835.12	4873648.89	Non-Participating	36
378	505131.50	4874516.31	Non-Participating	36
24	505360.45	4874306.38	Non-Participating	36
507	505185.78	4874513.54	Non-Participating	36
340	506219.35	4873319.67	Non-Participating	36
419	502505.60	4875781.28	Non-Participating	36
394	495476.72	4865142.67	Non-Participating	36

Table E-1B: Modeling Results Sorted by Level

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
403	493409.85	4872818.20	Non-Participating	36
485	505318.66	4874468.86	Non-Participating	36
155	493559.19	4872640.63	Non-Participating	36
383	502811.08	4875791.86	Non-Participating	36
527	505573.00	4874186.08	Non-Participating	36
439	506995.22	4872765.17	Non-Participating	36
371	499003.18	4875289.99	Non-Participating	36
535	494634.19	4870301.00	Non-Participating	36
13	502835.06	4866942.95	Non-Participating	36
355	502671.38	4875862.64	Non-Participating	36
395	505419.99	4874473.85	Non-Participating	36
409	491716.82	4878333.38	Non-Participating	36
268	490953.76	4877850.89	Non-Participating	36
238	490317.49	4876072.38	Non-Participating	36
457	502417.67	4875910.23	Non-Participating	36
196	502511.25	4875918.65	Non-Participating	36
180	490540.60	4874928.89	Participating	36
486	501125.52	4866792.07	Non-Participating	36
317	503487.85	4875801.04	Non-Participating	36
12	502839.80	4866861.85	Non-Participating	36
23	501566.55	4875940.76	Non-Participating	35
40	503390.38	4875834.17	Non-Participating	35
165	505975.17	4867859.30	Non-Participating	35
93	505521.46	4874472.14	Non-Participating	35
189	490278.72	4875981.79	Non-Participating	35
250	505468.21	4874567.16	Non-Participating	35
330	505833.99	4874138.56	Non-Participating	35
476	490247.04	4876072.83	Non-Participating	35
70	499581.44	4875569.38	Non-Participating	35
344	503082.57	4875966.50	Non-Participating	35
503	490319.60	4876916.87	Non-Participating	35
181	490740.99	4874350.24	Non-Participating	35
481	494755.62	4867301.87	Non-Participating	35
303	502421.45	4876071.99	Non-Participating	35
42	501440.38	4876069.62	Non-Participating	35
251	504293.80	4875657.39	Non-Participating	35
5	494573.56	4868329.31	Non-Participating	35
283	504379.21	4866974.98	Non-Participating	35
324	494999.19	4865577.98	Non-Participating	35
112	492395.06	4872907.23	Participating	35
284	504371.08	4866947.02	Non-Participating	35
368	506061.93	4874108.69	Non-Participating	35
171	495589.79	4864552.29	Non-Participating	35
126	503168.34	4876081.13	Non-Participating	35
270	504273.69	4875741.16	Non-Participating	35
94	508048.16	4868687.71	Non-Participating	35
415	495468.48	4864632.88	Non-Participating	35
337	491477.34	4878458.84	Non-Participating	35
197	506867.25	4873425.96	Non-Participating	35
166	508144.63	4872272.89	Non-Participating	35
43	503625.79	4876054.09	Non-Participating	35

Table E-1B: Modeling Results Sorted by Level

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
447	506635.17	4867819.96	Non-Participating	35
79	494750.75	4877672.55	Non-Participating	34
501	506077.00	4874303.87	Non-Participating	34
28	494568.65	4867108.30	Non-Participating	34
200	492485.87	4872667.38	Participating	34
326	504059.72	4875949.28	Non-Participating	34
31	499492.96	4875983.78	Non-Participating	34
354	508881.77	4871158.61	Non-Participating	34
483	502759.90	4866445.66	Non-Participating	34
342	490485.73	4874353.08	Participating	34
321	504300.61	4875884.53	Non-Participating	34
130	493922.16	4871131.52	Non-Participating	34
108	490664.39	4874465.11	Participating	34
25	508830.24	4869546.99	Non-Participating	34
416	493766.86	4871238.86	Non-Participating	34
470	498631.77	4875978.22	Non-Participating	34
138	491517.60	4873118.79	Non-Participating	34
41	502832.53	4866306.09	Non-Participating	34
460	496395.27	4863671.46	Non-Participating	34
184	499586.33	4876218.60	Non-Participating	34
245	507916.22	4872759.08	Non-Participating	34
100	495393.83	4877492.70	Participating	34
241	499451.86	4876209.11	Non-Participating	34
9	506037.74	4874748.88	Non-Participating	34
10	506050.32	4874743.43	Non-Participating	34
104	500298.35	4864413.90	Non-Participating	34
494	499637.54	4876318.99	Non-Participating	34
11	506246.45	4874423.48	Non-Participating	34
50	499631.54	4876067.43	Non-Participating	34
461	494020.79	4868808.31	Non-Participating	34
400	497395.94	4863196.86	Non-Participating	34
58	494631.94	4878067.90	Non-Participating	34
517	492281.45	4872422.94	Participating	34
352	495596.99	4864158.82	Non-Participating	34
173	495153.79	4877778.54	Non-Participating	33
307	494040.64	4868103.53	Non-Participating	33
311	499611.85	4876413.28	Non-Participating	33
144	495513.20	4877563.58	Non-Participating	33
323	489826.64	4875986.81	Non-Participating	33
98	499579.78	4876426.53	Non-Participating	33
174	507576.91	4867930.10	Non-Participating	33
450	499654.24	4863571.20	Non-Participating	33
45	494598.08	4865480.81	Non-Participating	33
316	491442.10	4872910.02	Non-Participating	33
169	500930.64	4876656.51	Non-Participating	33
234	501207.50	4876670.87	Non-Participating	33
19	499576.26	4876273.51	Non-Participating	33
226	500169.04	4876581.94	Non-Participating	33
246	500109.86	4876571.91	Non-Participating	33
305	500868.27	4876669.90	Non-Participating	33
436	500886.20	4876660.66	Non-Participating	33

Table E-1B: Modeling Results Sorted by Level

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
454	500843.70	4876652.47	Non-Participating	33
508	499597.88	4876172.38	Non-Participating	33
469	507857.09	4872987.73	Participating	33
248	500792.52	4876671.42	Non-Participating	33
405	500749.57	4876674.35	Non-Participating	33
438	500770.03	4876675.90	Non-Participating	33
468	500723.37	4876670.77	Non-Participating	33
99	500954.88	4876712.04	Non-Participating	33
222	501003.67	4876706.51	Non-Participating	33
247	499493.32	4876494.63	Non-Participating	33
261	500682.67	4876686.29	Non-Participating	33
300	500931.24	4876716.77	Non-Participating	33
406	499586.30	4876513.64	Non-Participating	33
449	500652.58	4876684.25	Non-Participating	33
459	500981.00	4876708.76	Non-Participating	33
496	500627.99	4876689.66	Non-Participating	33
56	500607.23	4876688.71	Non-Participating	33
398	509057.18	4869533.17	Non-Participating	33
147	493234.84	4871143.88	Non-Participating	33
4	495390.98	4877824.97	Non-Participating	33
260	500570.48	4876697.94	Non-Participating	33
46	500508.85	4876698.70	Non-Participating	33
88	500474.45	4876712.64	Non-Participating	33
157	500491.51	4876706.12	Non-Participating	33
369	500547.66	4876700.33	Non-Participating	33
467	491620.99	4872745.10	Non-Participating	33
452	500451.92	4876714.42	Non-Participating	33
84	500430.38	4876723.10	Non-Participating	33
113	500368.53	4876730.47	Non-Participating	33
484	500348.72	4876733.11	Non-Participating	33
518	500409.09	4876727.57	Non-Participating	33
522	500389.56	4876729.01	Non-Participating	33
263	493660.68	4869127.12	Non-Participating	33
74	497881.90	4876575.38	Non-Participating	33
493	490349.33	4873858.84	Non-Participating	33
488	499202.59	4863171.88	Non-Participating	33
249	493001.46	4871141.57	Non-Participating	33
390	499511.63	4876710.19	Non-Participating	33
227	495593.56	4863852.66	Non-Participating	33
358	493137.26	4879037.00	Non-Participating	33
198	489825.59	4877177.74	Non-Participating	33
156	492888.38	4871222.75	Non-Participating	33
373	495733.86	4877787.86	Non-Participating	33
87	493327.54	4869945.54	Non-Participating	33
82	505258.78	4866422.16	Non-Participating	33
528	499366.96	4863166.72	Non-Participating	33
253	508150.60	4868038.13	Non-Participating	33
83	505289.10	4866389.62	Non-Participating	32
292	502719.54	4876996.39	Non-Participating	32
335	499067.20	4863010.71	Non-Participating	32
266	498071.67	4876876.94	Non-Participating	32

Table E-1B: Modeling Results Sorted by Level

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
497	508252.48	4868033.65	Non-Participating	32
448	506437.32	4875179.84	Non-Participating	32
304	505348.39	4876079.30	Non-Participating	32
286	489909.66	4874272.91	Participating	32
287	489907.11	4874247.07	Participating	32
187	495454.20	4863810.52	Non-Participating	32
134	492857.85	4879228.58	Non-Participating	32
343	505959.74	4875672.79	Non-Participating	32
121	505982.22	4866488.49	Non-Participating	32
115	499602.96	4863130.00	Non-Participating	32
75	499526.62	4863072.56	Non-Participating	32
91	491805.15	4879143.63	Non-Participating	32
495	496785.28	4877588.42	Non-Participating	32
379	493828.30	4866305.38	Non-Participating	32
444	509479.19	4869914.41	Non-Participating	32
219	489915.77	4877879.58	Non-Participating	32
465	490452.59	4873194.31	Non-Participating	32
462	490427.86	4873183.64	Non-Participating	32
341	505944.93	4866305.68	Non-Participating	32
18	491159.74	4872616.50	Non-Participating	32
221	502995.95	4877296.70	Non-Participating	32
154	492791.30	4869909.10	Participating	32
205	503040.46	4877305.74	Non-Participating	32
279	489833.11	4877912.50	Non-Participating	32
203	491925.48	4871433.16	Non-Participating	32
290	502850.33	4865135.09	Non-Participating	32
264	493008.97	4868796.76	Participating	32
106	493864.69	4865674.98	Non-Participating	32
318	502760.12	4865050.38	Non-Participating	32
27	494034.23	4879211.36	Non-Participating	31
276	494947.99	4878856.51	Non-Participating	31
216	496208.01	4878176.00	Non-Participating	31
521	496705.42	4877845.55	Non-Participating	31
319	499494.76	4877405.80	Non-Participating	31
59	493478.04	4866683.95	Non-Participating	31
159	497144.63	4877768.68	Non-Participating	31
153	492103.49	4871307.03	Non-Participating	31
211	509723.09	4870758.45	Non-Participating	31
530	509643.87	4871308.65	Non-Participating	31
206	507720.87	4873679.54	Non-Participating	31
365	508497.51	4873580.91	Non-Participating	31
218	509646.97	4871517.51	Non-Participating	31
441	490945.40	4879140.93	Non-Participating	31
391	489397.15	4874448.48	Participating	31
183	497791.37	4877758.09	Non-Participating	31
242	497981.30	4877738.38	Non-Participating	31
47	508999.23	4872848.82	Non-Participating	31
142	493147.64	4867171.40	Non-Participating	31
366	508610.68	4873584.75	Non-Participating	31
388	497898.95	4862420.50	Non-Participating	31
325	489115.47	4875427.87	Non-Participating	31

Table E-1B: Modeling Results Sorted by Level

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
367	508645.50	4873585.73	Non-Participating	31
382	501220.91	4863779.36	Non-Participating	31
487	508605.03	4873649.14	Participating	31
207	491353.72	4872843.53	Non-Participating	31
277	489073.80	4875419.12	Non-Participating	31
188	490478.72	4872689.88	Non-Participating	31
262	489807.34	4873556.75	Non-Participating	31
259	499574.91	4877748.37	Non-Participating	31
185	502733.21	4864639.89	Non-Participating	31
119	507073.63	4866464.97	Non-Participating	31
140	509724.36	4871619.32	Non-Participating	31
417	509722.75	4871708.96	Non-Participating	31
71	498033.70	4862361.30	Non-Participating	31
60	490904.04	4872049.28	Non-Participating	31
339	491586.16	4871267.36	Non-Participating	31
532	489306.45	4874282.73	Participating	31
223	492845.37	4867800.41	Non-Participating	31
396	506061.42	4865852.28	Non-Participating	31
397	506082.39	4865857.89	Non-Participating	31
199	495448.22	4863162.40	Non-Participating	31
224	488996.21	4876058.27	Participating	31
414	492089.64	4871150.41	Participating	31
145	491932.00	4870388.39	Participating	31
179	492013.05	4870129.41	Participating	31
455	508917.86	4873581.47	Non-Participating	30
67	490185.97	4872604.25	Non-Participating	30
464	491468.31	4871037.31	Non-Participating	30
357	503841.78	4864815.50	Non-Participating	30
7	509624.70	4872351.24	Non-Participating	30
109	492356.73	4868911.94	Participating	30
65	490198.35	4872610.03	Non-Participating	30
66	490231.07	4872594.88	Non-Participating	30
26	509364.26	4872963.09	Participating	30
334	502864.73	4864320.41	Non-Participating	30
385	509717.05	4872284.24	Non-Participating	30
504	489803.92	4873069.39	Non-Participating	30
149	492375.72	4868476.15	Non-Participating	30
349	491741.81	4870251.28	Non-Participating	30
146	493183.89	4865808.35	Non-Participating	30
294	495398.34	4862952.06	Non-Participating	30
353	491690.59	4870352.19	Non-Participating	30
107	492244.31	4868718.62	Participating	30
463	490497.29	4879284.50	Non-Participating	30
412	491558.71	4870331.03	Non-Participating	30
57	509728.20	4868620.30	Non-Participating	30
37	493257.01	4865337.79	Non-Participating	30
478	489719.66	4878734.68	Non-Participating	30
271	496127.52	4879185.09	Non-Participating	30
377	491814.47	4869464.04	Participating	30
48	491762.16	4869588.01	Non-Participating	30
256	491441.79	4870295.15	Participating	30

Table E-1B: Modeling Results Sorted by Level

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
237	492202.23	4868471.49	Participating	30
36	489643.48	4878761.03	Non-Participating	30
299	499578.51	4878480.97	Non-Participating	30
30	509431.80	4867835.01	Non-Participating	30
20	508124.36	4866478.11	Non-Participating	30
122	497815.41	4861867.43	Non-Participating	30
213	488850.02	4874111.98	Non-Participating	29
1	492148.90	4867812.87	Non-Participating	29
359	495018.61	4862796.39	Non-Participating	29
150	504458.08	4864371.22	Non-Participating	29
220	492895.31	4868806.16	Non-Participating	29
195	489845.83	4872269.79	Non-Participating	29
500	499436.27	4878799.75	Non-Participating	29
204	490181.91	4871393.10	Non-Participating	29
498	509725.01	4867937.72	Non-Participating	29
202	489435.33	4878830.81	Non-Participating	29
272	488684.76	4877538.01	Non-Participating	29
492	490731.38	4870543.18	Non-Participating	29
473	502756.22	4863425.02	Non-Participating	29
336	488635.60	4877560.13	Non-Participating	29
322	490143.16	4871129.16	Non-Participating	29
252	499548.84	4861796.60	Non-Participating	29
22	500054.15	4861931.65	Non-Participating	29
38	488221.75	4875677.22	Participating	29
351	488336.85	4876851.24	Non-Participating	29
236	492158.99	4868443.65	Participating	29
309	491215.79	4868919.33	Non-Participating	29
170	498210.22	4861540.63	Non-Participating	29
151	489544.91	4879213.73	Non-Participating	29
374	488331.26	4876045.64	Participating	29
445	501290.11	4862407.81	Non-Participating	29
190	500749.17	4862127.79	Non-Participating	29
193	496567.40	4861683.18	Non-Participating	29
95	490558.27	4870427.40	Non-Participating	29
167	491147.12	4868792.53	Non-Participating	29
191	500757.86	4862075.69	Non-Participating	29
17	489444.63	4879205.60	Non-Participating	28
254	488314.12	4874924.71	Participating	28
54	488218.70	4877029.52	Non-Participating	28
55	488197.62	4877040.78	Non-Participating	28
347	508114.92	4865669.97	Participating	28
401	509081.25	4866514.23	Non-Participating	28
499	505981.82	4864375.37	Non-Participating	28
233	499708.68	4861562.23	Non-Participating	28
410	495595.08	4861914.80	Non-Participating	28
76	493648.84	4863245.61	Non-Participating	28
408	488226.20	4877367.74	Non-Participating	28
361	488227.26	4874360.15	Participating	28
52	499711.80	4861462.44	Non-Participating	28
402	496393.62	4861524.14	Non-Participating	28
509	501365.76	4862090.52	Non-Participating	28

Table E-1B: Modeling Results Sorted by Level

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Broadband Sound Level (dBA)
	X (m)	Y (m)		
163	506656.97	4864586.31	Non-Participating	28
201	490726.89	4869031.52	Non-Participating	28
399	489683.66	4871204.50	Non-Participating	28
148	488176.82	4874444.29	Non-Participating	28
301	488302.80	4873560.59	Non-Participating	28
86	488229.97	4877669.00	Non-Participating	28
77	488576.77	4878448.64	Non-Participating	28
327	494233.58	4862515.25	Non-Participating	28
2	492180.08	4867809.47	Non-Participating	28
3	495444.03	4861638.31	Non-Participating	28
118	491639.96	4866018.48	Non-Participating	28
482	488311.29	4878360.36	Non-Participating	28
123	491772.09	4867257.85	Non-Participating	28
132	488299.76	4878423.35	Non-Participating	27
21	509652.52	4866311.23	Non-Participating	27
320	507907.62	4864779.23	Non-Participating	27
315	488228.07	4878434.32	Non-Participating	27
137	488660.48	4879131.37	Non-Participating	27
117	488579.52	4879153.91	Non-Participating	27
372	493163.47	4862892.03	Non-Participating	27
135	488237.17	4878728.89	Non-Participating	27
80	488124.42	4872673.44	Non-Participating	27
446	488509.35	4879213.50	Non-Participating	27
232	492984.78	4862963.95	Non-Participating	27
265	491521.01	4869811.96	Non-Participating	27
96	488455.23	4879188.75	Non-Participating	27
136	488407.42	4879222.82	Non-Participating	27
360	491382.19	4865101.53	Non-Participating	27
550	491361.28	4865072.21	Non-Participating	27
289	488299.49	4879147.02	Non-Participating	27
338	488370.70	4879229.42	Non-Participating	27
331	488245.43	4879102.59	Non-Participating	27
239	490772.87	4868330.67	Non-Participating	26
178	488305.00	4879226.91	Non-Participating	26
273	492380.19	4863158.39	Non-Participating	26
551	491649.13	4864075.81	Non-Participating	26
81	489743.70	4869646.39	Non-Participating	26
525	489918.96	4870356.26	Non-Participating	26
553	491823.21	4863310.08	Non-Participating	26
516	490521.74	4868389.31	Non-Participating	26
554	492097.62	4863009.42	Non-Participating	26
172	490476.84	4870316.70	Non-Participating	25
552	491087.39	4863167.93	Non-Participating	25
257	491419.59	4866969.08	Non-Participating	21

Appendix F

Total Sound Levels at Modeled Receptors

Table F-1: Project + Ambient Sound Levels at Receptors

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Sound Level (dBA) ¹	Total L ₅₀ Sound Level (Modeled + Ambient)				
	X (m)	Y (m)			35 dBA Ambient	40 dBA Ambient	45 dBA Ambient	47 dBA Ambient	50 dBA Ambient
1	492148.90	4867812.87	Non-Participating	29	36	40	45	47	50
2	492180.08	4867809.47	Non-Participating	28	36	40	45	47	50
3	495444.03	4861638.31	Non-Participating	28	36	40	45	47	50
4	495390.98	4877824.97	Non-Participating	33	37	41	45	47	50
5	494573.56	4868329.31	Non-Participating	35	38	41	45	47	50
6	504299.92	4874836.45	Non-Participating	38	40	42	46	48	50
7	509624.70	4872351.24	Non-Participating	30	36	40	45	47	50
8	498080.72	4874206.33	Non-Participating	39	41	43	46	48	50
9	506037.74	4874748.88	Non-Participating	34	37	41	45	47	50
10	506050.32	4874743.43	Non-Participating	34	37	41	45	47	50
11	506246.45	4874423.48	Non-Participating	34	37	41	45	47	50
12	502839.80	4866861.85	Non-Participating	36	38	41	45	47	50
13	502835.06	4866942.95	Non-Participating	36	38	41	45	47	50
14	499468.85	4867081.29	Non-Participating	41	42	43	46	48	50
15	499700.20	4875114.66	Non-Participating	37	39	42	46	47	50
16	502937.95	4869210.18	Participating	47	47	48	49	50	52
17	489444.63	4879205.60	Non-Participating	28	36	40	45	47	50
18	491159.74	4872616.50	Non-Participating	32	37	41	45	47	50
19	499576.26	4876273.51	Non-Participating	33	37	41	45	47	50
20	508124.36	4866478.11	Non-Participating	30	36	40	45	47	50
21	509652.52	4866311.23	Non-Participating	27	36	40	45	47	50
22	500054.15	4861931.65	Non-Participating	29	36	40	45	47	50
23	501566.55	4875940.76	Non-Participating	35	38	41	45	47	50
24	505360.45	4874306.38	Non-Participating	36	39	42	46	47	50
25	508830.24	4869546.99	Non-Participating	34	38	41	45	47	50
26	509364.26	4872963.09	Participating	30	36	40	45	47	50
27	494034.23	4879211.36	Non-Participating	31	37	41	45	47	50
28	494568.65	4867108.30	Non-Participating	34	38	41	45	47	50
29	497143.55	4873066.70	Participating	44	45	46	48	49	51
30	509431.80	4867835.01	Non-Participating	30	36	40	45	47	50
31	499492.96	4875983.78	Non-Participating	34	38	41	45	47	50
32	495572.93	4871481.19	Participating	39	41	43	46	48	50
33	495552.31	4871411.17	Participating	39	41	43	46	48	50
34	493871.98	4874370.65	Participating	45	46	46	48	49	51
35	504538.01	4874969.76	Non-Participating	37	39	42	46	47	50
36	489643.48	4878761.03	Non-Participating	30	36	40	45	47	50
37	493257.01	4865337.79	Non-Participating	30	36	40	45	47	50
38	488221.75	4875677.22	Participating	29	36	40	45	47	50
39	495765.52	4872848.11	Participating	38	40	42	46	48	50
40	503390.38	4875834.17	Non-Participating	35	38	41	45	47	50
41	502832.53	4866306.09	Non-Participating	34	37	41	45	47	50
42	501440.38	4876069.62	Non-Participating	35	38	41	45	47	50
43	503625.79	4876054.09	Non-Participating	35	38	41	45	47	50
44	490995.28	4877602.23	Non-Participating	37	39	42	46	47	50
45	494598.08	4865480.81	Non-Participating	33	37	41	45	47	50
46	500508.85	4876698.70	Non-Participating	33	37	41	45	47	50
47	508999.23	4872848.82	Non-Participating	31	36	41	45	47	50
48	491762.16	4869588.01	Non-Participating	30	36	40	45	47	50
49	495577.58	4865899.35	Non-Participating	38	40	42	46	48	50
50	499631.54	4876067.43	Non-Participating	34	37	41	45	47	50
51	504442.72	4869750.39	Participating	46	46	47	48	49	51
52	499711.80	4861462.44	Non-Participating	28	36	40	45	47	50
53	503069.05	4871941.72	Participating	47	47	48	49	50	52
54	488218.70	4877029.52	Non-Participating	28	36	40	45	47	50

Table F-1: Project + Ambient Sound Levels at Receptors

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Sound Level (dBA) ¹	Total L ₅₀ Sound Level (Modeled + Ambient)				
	X (m)	Y (m)			35 dBA Ambient	40 dBA Ambient	45 dBA Ambient	47 dBA Ambient	50 dBA Ambient
55	488197.62	4877040.78	Non-Participating	28	36	40	45	47	50
56	500607.23	4876688.71	Non-Participating	33	37	41	45	47	50
57	509728.20	4868620.30	Non-Participating	30	36	40	45	47	50
58	494631.94	4878067.90	Non-Participating	34	37	41	45	47	50
59	493478.04	4866683.95	Non-Participating	31	37	41	45	47	50
60	490904.04	4872049.28	Non-Participating	31	36	40	45	47	50
61	501225.17	4871956.07	Non-Participating	45	46	47	48	49	51
62	501183.46	4871944.67	Non-Participating	45	46	46	48	49	51
63	497067.23	4872202.85	Non-Participating	41	42	44	46	48	51
64	493047.36	4873719.28	Participating	39	41	43	46	48	50
65	490198.35	4872610.03	Non-Participating	30	36	40	45	47	50
66	490231.07	4872594.88	Non-Participating	30	36	40	45	47	50
67	490185.97	4872604.25	Non-Participating	30	36	40	45	47	50
68	492480.63	4874371.00	Non-Participating	43	44	45	47	48	51
69	503825.75	4872775.72	Participating	47	47	48	49	50	52
70	499581.44	4875569.38	Non-Participating	35	38	41	45	47	50
71	498033.70	4862361.30	Non-Participating	31	36	40	45	47	50
72	502794.29	4874913.12	Participating	40	41	43	46	48	50
73	502796.00	4874854.78	Participating	41	42	43	46	48	50
74	497881.90	4876575.38	Non-Participating	33	37	41	45	47	50
75	499526.62	4863072.56	Non-Participating	32	37	41	45	47	50
76	493648.84	4863245.61	Non-Participating	28	36	40	45	47	50
77	488576.77	4878448.64	Non-Participating	28	36	40	45	47	50
78	505966.88	4869878.37	Participating	46	46	47	48	49	51
79	494750.75	4877672.55	Non-Participating	34	38	41	45	47	50
80	488124.42	4872673.44	Non-Participating	27	36	40	45	47	50
81	489743.70	4869646.39	Non-Participating	26	36	40	45	47	50
82	505258.78	4866422.16	Non-Participating	33	37	41	45	47	50
83	505289.10	4866389.62	Non-Participating	32	37	41	45	47	50
84	500430.38	4876723.10	Non-Participating	33	37	41	45	47	50
85	494674.40	4874964.71	Participating	45	46	46	48	49	51
86	488229.97	4877669.00	Non-Participating	28	36	40	45	47	50
87	493327.54	4869945.54	Non-Participating	33	37	41	45	47	50
88	500474.45	4876712.64	Non-Participating	33	37	41	45	47	50
89	500623.45	4875455.65	Non-Participating	37	39	42	46	47	50
90	501103.54	4872965.76	Participating	45	45	46	48	49	51
91	491805.15	4879143.63	Non-Participating	32	37	41	45	47	50
92	493295.90	4877317.09	Participating	41	42	44	47	48	51
93	505521.46	4874472.14	Non-Participating	35	38	41	45	47	50
94	508048.16	4868687.71	Non-Participating	35	38	41	45	47	50
95	490558.27	4870427.40	Non-Participating	29	36	40	45	47	50
96	488455.23	4879188.75	Non-Participating	27	36	40	45	47	50
97	499482.01	4870257.86	Non-Participating	44	44	45	47	49	51
98	499579.78	4876426.53	Non-Participating	33	37	41	45	47	50
99	500954.88	4876712.04	Non-Participating	33	37	41	45	47	50
100	495393.83	4877492.70	Participating	34	37	41	45	47	50
101	495503.67	4871935.80	Non-Participating	38	40	42	46	48	50
102	494809.73	4875554.74	Participating	43	44	45	47	49	51
103	494160.31	4874449.84	Participating	47	47	47	49	50	52
104	500298.35	4864413.90	Non-Participating	34	37	41	45	47	50
105	499582.97	4871955.15	Non-Participating	45	46	46	48	49	51
106	493864.69	4865674.98	Non-Participating	32	37	41	45	47	50
107	492244.31	4868718.62	Participating	30	36	40	45	47	50
108	490664.39	4874465.11	Participating	34	38	41	45	47	50

Table F-1: Project + Ambient Sound Levels at Receptors

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Sound Level (dBA) ¹	Total L ₅₀ Sound Level (Modeled + Ambient)				
	X (m)	Y (m)			35 dBA Ambient	40 dBA Ambient	45 dBA Ambient	47 dBA Ambient	50 dBA Ambient
109	492356.73	4868911.94	Participating	30	36	40	45	47	50
110	494752.02	4876048.27	Non-Participating	40	41	43	46	48	50
111	495573.03	4866602.09	Non-Participating	39	40	42	46	48	50
112	492395.06	4872907.23	Participating	35	38	41	45	47	50
113	500368.53	4876730.47	Non-Participating	33	37	41	45	47	50
114	507701.03	4871155.54	Non-Participating	42	43	44	47	48	51
115	499602.96	4863130.00	Non-Participating	32	37	41	45	47	50
116	492288.94	4875934.54	Participating	47	47	48	49	50	52
117	488579.52	4879153.91	Non-Participating	27	36	40	45	47	50
118	491639.96	4866018.48	Non-Participating	28	36	40	45	47	50
119	507073.63	4866464.97	Non-Participating	31	36	40	45	47	50
120	502717.76	4875399.03	Non-Participating	38	40	42	46	47	50
121	505982.22	4866488.49	Non-Participating	32	37	41	45	47	50
122	497815.41	4861867.43	Non-Participating	30	36	40	45	47	50
123	491772.09	4867257.85	Non-Participating	28	36	40	45	47	50
124	491554.77	4874628.63	Participating	40	41	43	46	48	50
125	495388.32	4871382.70	Participating	38	40	42	46	48	50
126	503168.34	4876081.13	Non-Participating	35	38	41	45	47	50
127	501030.87	4874233.06	Non-Participating	44	45	46	48	49	51
128	501040.98	4874377.91	Non-Participating	43	44	45	47	48	51
129	491888.32	4875933.22	Participating	47	47	47	49	50	52
130	493922.16	4871131.52	Non-Participating	34	38	41	45	47	50
131	495560.88	4870852.56	Non-Participating	40	41	43	46	48	50
132	488299.76	4878423.35	Non-Participating	27	36	40	45	47	50
133	498636.66	4872028.29	Non-Participating	45	46	46	48	49	51
134	492857.85	4879228.58	Non-Participating	32	37	41	45	47	50
135	488237.17	4878728.89	Non-Participating	27	36	40	45	47	50
136	488407.42	4879222.82	Non-Participating	27	36	40	45	47	50
137	488660.48	4879131.37	Non-Participating	27	36	40	45	47	50
138	491517.60	4873118.79	Non-Participating	34	37	41	45	47	50
139	495581.70	4867569.37	Non-Participating	39	40	42	46	48	50
140	509724.36	4871619.32	Non-Participating	31	36	40	45	47	50
141	496797.40	4867179.31	Participating	46	46	47	48	49	51
142	493147.64	4867171.40	Non-Participating	31	36	41	45	47	50
143	491208.49	4877594.08	Non-Participating	38	40	42	46	48	50
144	495513.20	4877563.58	Non-Participating	33	37	41	45	47	50
145	491932.00	4870388.39	Participating	31	36	40	45	47	50
146	493183.89	4865808.35	Non-Participating	30	36	40	45	47	50
147	493234.84	4871143.88	Non-Participating	33	37	41	45	47	50
148	488176.82	4874444.29	Non-Participating	28	36	40	45	47	50
149	492375.72	4868476.15	Non-Participating	30	36	40	45	47	50
150	504458.08	4864371.22	Non-Participating	29	36	40	45	47	50
151	489544.91	4879213.73	Non-Participating	29	36	40	45	47	50
152	495267.53	4874447.81	Participating	46	46	47	48	49	51
153	492103.49	4871307.03	Non-Participating	31	37	41	45	47	50
154	492791.30	4869909.10	Participating	32	37	41	45	47	50
155	493559.19	4872640.63	Non-Participating	36	38	41	46	47	50
156	492888.38	4871222.75	Non-Participating	33	37	41	45	47	50
157	500491.51	4876706.12	Non-Participating	33	37	41	45	47	50
158	508018.56	4869420.73	Non-Participating	38	40	42	46	47	50
159	497144.63	4877768.68	Non-Participating	31	37	41	45	47	50
160	506068.93	4870747.29	Non-Participating	44	45	46	48	49	51
161	495577.32	4865576.05	Non-Participating	38	40	42	46	47	50
162	501089.42	4875368.23	Non-Participating	37	39	42	46	47	50

Table F-1: Project + Ambient Sound Levels at Receptors

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Sound Level (dBA) ¹	Total L ₅₀ Sound Level (Modeled + Ambient)				
	X (m)	Y (m)			35 dBA Ambient	40 dBA Ambient	45 dBA Ambient	47 dBA Ambient	50 dBA Ambient
163	506656.97	4864586.31	Non-Participating	28	36	40	45	47	50
164	500941.84	4874531.82	Participating	42	43	44	47	48	51
165	505975.17	4867859.30	Non-Participating	35	38	41	45	47	50
166	508144.63	4872272.89	Non-Participating	35	38	41	45	47	50
167	491147.12	4868792.53	Non-Participating	29	36	40	45	47	50
168	495131.09	4872888.37	Non-Participating	38	40	42	46	48	50
169	500930.64	4876656.51	Non-Participating	33	37	41	45	47	50
170	498210.22	4861540.63	Non-Participating	29	36	40	45	47	50
171	495589.79	4864552.29	Non-Participating	35	38	41	45	47	50
172	490476.84	4870316.70	Non-Participating	25	35	40	45	47	50
173	495153.79	4877778.54	Non-Participating	33	37	41	45	47	50
174	507576.91	4867930.10	Non-Participating	33	37	41	45	47	50
175	495774.75	4871932.37	Participating	39	41	43	46	48	50
176	492942.35	4877694.92	Non-Participating	40	41	43	46	48	50
177	493256.63	4877818.13	Non-Participating	38	40	42	46	48	50
178	488305.00	4879226.91	Non-Participating	26	36	40	45	47	50
179	492013.05	4870129.41	Participating	31	36	40	45	47	50
180	490540.60	4874928.89	Participating	36	38	41	45	47	50
181	490740.99	4874350.24	Non-Participating	35	38	41	45	47	50
182	492825.92	4874335.43	Participating	43	44	45	47	49	51
183	497791.37	4877758.09	Non-Participating	31	36	41	45	47	50
184	499586.33	4876218.60	Non-Participating	34	37	41	45	47	50
185	502733.21	4864639.89	Non-Participating	31	36	40	45	47	50
186	499027.32	4874481.53	Non-Participating	39	40	42	46	48	50
187	495454.20	4863810.52	Non-Participating	32	37	41	45	47	50
188	490478.72	4872689.88	Non-Participating	31	36	40	45	47	50
189	490278.72	4875981.79	Non-Participating	35	38	41	45	47	50
190	500749.17	4862127.79	Non-Participating	29	36	40	45	47	50
191	500757.86	4862075.69	Non-Participating	29	36	40	45	47	50
192	504107.57	4874903.13	Non-Participating	38	40	42	46	48	50
193	496567.40	4861683.18	Non-Participating	29	36	40	45	47	50
194	498696.73	4865948.08	Non-Participating	42	43	44	47	48	51
195	489845.83	4872269.79	Non-Participating	29	36	40	45	47	50
196	502511.25	4875918.65	Non-Participating	36	38	41	45	47	50
197	506867.25	4873425.96	Non-Participating	35	38	41	45	47	50
198	489825.59	4877177.74	Non-Participating	33	37	41	45	47	50
199	495448.22	4863162.40	Non-Participating	31	36	40	45	47	50
200	492485.87	4872667.38	Participating	34	38	41	45	47	50
201	490726.89	4869031.52	Non-Participating	28	36	40	45	47	50
202	489435.33	4878830.81	Non-Participating	29	36	40	45	47	50
203	491925.48	4871433.16	Non-Participating	32	37	41	45	47	50
204	490181.91	4871393.10	Non-Participating	29	36	40	45	47	50
205	503040.46	4877305.74	Non-Participating	32	37	41	45	47	50
206	507720.87	4873679.54	Non-Participating	31	37	41	45	47	50
207	491353.72	4872843.53	Non-Participating	31	36	40	45	47	50
208	499483.98	4870832.33	Non-Participating	45	46	46	48	49	51
209	502915.25	4871061.73	Participating	47	47	48	49	50	52
210	502825.89	4871089.68	Participating	47	47	47	49	50	52
211	509723.09	4870758.45	Non-Participating	31	37	41	45	47	50
212	496786.19	4867096.04	Participating	46	46	47	48	49	51
213	488850.02	4874111.98	Non-Participating	29	36	40	45	47	50
214	495966.80	4867986.23	Non-Participating	41	42	44	47	48	51
215	495966.13	4868005.71	Non-Participating	41	42	44	47	48	51
216	496208.01	4878176.00	Non-Participating	31	37	41	45	47	50

Table F-1: Project + Ambient Sound Levels at Receptors

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Sound Level (dBA) ¹	Total L ₅₀ Sound Level (Modeled + Ambient)				
	X (m)	Y (m)			35 dBA Ambient	40 dBA Ambient	45 dBA Ambient	47 dBA Ambient	50 dBA Ambient
217	501117.53	4871025.47	Non-Participating	44	45	46	48	49	51
218	509646.97	4871517.51	Non-Participating	31	36	41	45	47	50
219	489915.77	4877879.58	Non-Participating	32	37	41	45	47	50
220	492895.31	4868806.16	Non-Participating	29	36	40	45	47	50
221	502995.95	4877296.70	Non-Participating	32	37	41	45	47	50
222	501003.67	4876706.51	Non-Participating	33	37	41	45	47	50
223	492845.37	4867800.41	Non-Participating	31	36	40	45	47	50
224	488996.21	4876058.27	Participating	31	36	40	45	47	50
225	494785.68	4875094.79	Participating	46	46	47	48	49	51
226	500169.04	4876581.94	Non-Participating	33	37	41	45	47	50
227	495593.56	4863852.66	Non-Participating	33	37	41	45	47	50
228	502731.49	4871786.99	Participating	46	46	47	49	50	51
229	501213.17	4868148.37	Non-Participating	39	40	42	46	48	50
230	501099.20	4867929.07	Non-Participating	38	40	42	46	48	50
231	507989.46	4871655.59	Non-Participating	37	39	42	46	47	50
232	492984.78	4862963.95	Non-Participating	27	36	40	45	47	50
233	499708.68	4861562.23	Non-Participating	28	36	40	45	47	50
234	501207.50	4876670.87	Non-Participating	33	37	41	45	47	50
235	495449.98	4868723.71	Non-Participating	39	40	42	46	48	50
236	492158.99	4868443.65	Participating	29	36	40	45	47	50
237	492202.23	4868471.49	Participating	30	36	40	45	47	50
238	490317.49	4876072.38	Non-Participating	36	38	41	45	47	50
239	490772.87	4868330.67	Non-Participating	26	36	40	45	47	50
240	504474.32	4874800.84	Non-Participating	38	40	42	46	47	50
241	499451.86	4876209.11	Non-Participating	34	37	41	45	47	50
242	497981.30	4877738.38	Non-Participating	31	36	41	45	47	50
243	503983.64	4867834.43	Participating	39	41	43	46	48	50
244	504760.55	4871962.27	Participating	46	47	47	49	50	52
245	507916.22	4872759.08	Non-Participating	34	37	41	45	47	50
246	500109.86	4876571.91	Non-Participating	33	37	41	45	47	50
247	499493.32	4876494.63	Non-Participating	33	37	41	45	47	50
248	500792.52	4876671.42	Non-Participating	33	37	41	45	47	50
249	493001.46	4871141.57	Non-Participating	33	37	41	45	47	50
250	505468.21	4874567.16	Non-Participating	35	38	41	45	47	50
251	504293.80	4875657.39	Non-Participating	35	38	41	45	47	50
252	499548.84	4861796.60	Non-Participating	29	36	40	45	47	50
253	508150.60	4868038.13	Non-Participating	33	37	41	45	47	50
254	488314.12	4874924.71	Participating	28	36	40	45	47	50
255	502745.82	4868089.17	Non-Participating	42	42	44	47	48	51
256	491441.79	4870295.15	Participating	30	36	40	45	47	50
257	491419.59	4866969.08	Non-Participating	21	35	40	45	47	50
258	493748.19	4873206.06	Non-Participating	38	40	42	46	48	50
259	499574.91	4877748.37	Non-Participating	31	36	40	45	47	50
260	500570.48	4876697.94	Non-Participating	33	37	41	45	47	50
261	500682.67	4876686.29	Non-Participating	33	37	41	45	47	50
262	489807.34	4873556.75	Non-Participating	31	36	40	45	47	50
263	493660.68	4869127.12	Non-Participating	33	37	41	45	47	50
264	493008.97	4868796.76	Participating	32	37	41	45	47	50
265	491521.01	4869811.96	Non-Participating	27	36	40	45	47	50
266	498071.67	4876876.94	Non-Participating	32	37	41	45	47	50
267	491030.47	4876061.23	Participating	40	41	43	46	48	50
268	490953.76	4877850.89	Non-Participating	36	38	41	45	47	50
269	504925.86	4874621.85	Non-Participating	37	39	42	46	47	50
270	504273.69	4875741.16	Non-Participating	35	38	41	45	47	50

Table F-1: Project + Ambient Sound Levels at Receptors

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Sound Level (dBA) ¹	Total L ₅₀ Sound Level (Modeled + Ambient)				
	X (m)	Y (m)			35 dBA Ambient	40 dBA Ambient	45 dBA Ambient	47 dBA Ambient	50 dBA Ambient
271	496127.52	4879185.09	Non-Participating	30	36	40	45	47	50
272	488684.76	4877538.01	Non-Participating	29	36	40	45	47	50
273	492380.19	4863158.39	Non-Participating	26	36	40	45	47	50
274	499523.83	4869059.24	Non-Participating	42	43	44	47	48	51
275	492212.61	4877378.62	Participating	45	45	46	48	49	51
276	494947.99	4878856.51	Non-Participating	31	37	41	45	47	50
277	489073.80	4875419.12	Non-Participating	31	36	40	45	47	50
278	492233.76	4877556.00	Participating	42	43	44	47	48	51
279	489833.11	4877912.50	Non-Participating	32	37	41	45	47	50
280	493769.89	4875949.78	Participating	43	43	44	47	48	51
281	493718.91	4875916.68	Participating	43	43	45	47	48	51
282	494098.64	4876122.28	Participating	41	42	43	46	48	50
283	504379.21	4866974.98	Non-Participating	35	38	41	45	47	50
284	504371.08	4866947.02	Non-Participating	35	38	41	45	47	50
285	491453.41	4874743.92	Participating	40	42	43	46	48	50
286	489909.66	4874272.91	Participating	32	37	41	45	47	50
287	489907.11	4874247.07	Participating	32	37	41	45	47	50
288	492532.30	4873484.11	Non-Participating	37	39	42	46	47	50
289	488299.49	4879147.02	Non-Participating	27	36	40	45	47	50
290	502850.33	4865135.09	Non-Participating	32	37	41	45	47	50
291	501192.38	4875114.79	Non-Participating	39	40	42	46	48	50
292	502719.54	4876996.39	Non-Participating	32	37	41	45	47	50
293	499678.09	4872538.62	Non-Participating	45	45	46	48	49	51
294	495398.34	4862952.06	Non-Participating	30	36	40	45	47	50
295	506546.78	4872867.33	Non-Participating	37	39	42	46	47	50
296	501224.93	4875033.82	Non-Participating	39	41	43	46	48	50
297	496419.85	4872754.66	Non-Participating	39	40	43	46	48	50
298	491327.24	4876003.33	Non-Participating	43	43	44	47	48	51
299	499578.51	4878480.97	Non-Participating	30	36	40	45	47	50
300	500931.24	4876716.77	Non-Participating	33	37	41	45	47	50
301	488302.80	4873560.59	Non-Participating	28	36	40	45	47	50
302	494852.79	4872697.89	Non-Participating	38	39	42	46	47	50
303	502421.45	4876071.99	Non-Participating	35	38	41	45	47	50
304	505348.39	4876079.30	Non-Participating	32	37	41	45	47	50
305	500868.27	4876669.90	Non-Participating	33	37	41	45	47	50
306	493138.15	4874000.89	Participating	41	42	44	47	48	51
307	494040.64	4868103.53	Non-Participating	33	37	41	45	47	50
308	496006.82	4876086.98	Participating	37	39	42	46	47	50
309	491215.79	4868919.33	Non-Participating	29	36	40	45	47	50
310	494001.93	4873709.24	Participating	42	43	44	47	48	51
311	499611.85	4876413.28	Non-Participating	33	37	41	45	47	50
312	504182.95	4874445.24	Participating	41	42	43	46	48	50
313	499811.09	4868052.86	Non-Participating	40	41	43	46	48	50
314	495349.04	4870249.03	Non-Participating	39	40	42	46	48	50
315	488228.07	4878434.32	Non-Participating	27	36	40	45	47	50
316	491442.10	4872910.02	Non-Participating	33	37	41	45	47	50
317	503487.85	4875801.04	Non-Participating	36	38	41	45	47	50
318	502760.12	4865050.38	Non-Participating	32	37	41	45	47	50
319	499494.76	4877405.80	Non-Participating	31	37	41	45	47	50
320	507907.62	4864779.23	Non-Participating	27	36	40	45	47	50
321	504300.61	4875884.53	Non-Participating	34	38	41	45	47	50
322	490143.16	4871129.16	Non-Participating	29	36	40	45	47	50
323	489826.64	4875986.81	Non-Participating	33	37	41	45	47	50
324	494999.19	4865577.98	Non-Participating	35	38	41	45	47	50

Table F-1: Project + Ambient Sound Levels at Receptors

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Sound Level (dBA) ¹	Total L ₅₀ Sound Level (Modeled + Ambient)				
	X (m)	Y (m)			35 dBA Ambient	40 dBA Ambient	45 dBA Ambient	47 dBA Ambient	50 dBA Ambient
325	489115.47	4875427.87	Non-Participating	31	36	41	45	47	50
326	504059.72	4875949.28	Non-Participating	34	38	41	45	47	50
327	494233.58	4862515.25	Non-Participating	28	36	40	45	47	50
328	493087.73	4876095.24	Participating	46	46	47	48	49	51
329	505014.97	4874528.13	Non-Participating	37	39	42	46	47	50
330	505833.99	4874138.56	Non-Participating	35	38	41	45	47	50
331	488245.43	4879102.59	Non-Participating	27	36	40	45	47	50
332	495596.87	4865310.03	Non-Participating	37	39	42	46	47	50
333	495246.75	4873763.89	Participating	44	44	45	47	49	51
334	502864.73	4864320.41	Non-Participating	30	36	40	45	47	50
335	499067.20	4863010.71	Non-Participating	32	37	41	45	47	50
336	488635.60	4877560.13	Non-Participating	29	36	40	45	47	50
337	491477.34	4878458.84	Non-Participating	35	38	41	45	47	50
338	488370.70	4879229.42	Non-Participating	27	36	40	45	47	50
339	491586.16	4871267.36	Non-Participating	31	36	40	45	47	50
340	506219.35	4873319.67	Non-Participating	36	39	41	46	47	50
341	505944.93	4866305.68	Non-Participating	32	37	41	45	47	50
342	490485.73	4874353.08	Participating	34	38	41	45	47	50
343	505959.74	4875672.79	Non-Participating	32	37	41	45	47	50
344	503082.57	4875966.50	Non-Participating	35	38	41	45	47	50
345	499507.02	4873983.67	Non-Participating	43	43	45	47	48	51
346	499493.07	4874005.43	Non-Participating	43	43	44	47	48	51
347	508114.92	4865669.97	Participating	28	36	40	45	47	50
348	508112.13	4869543.81	Non-Participating	38	40	42	46	47	50
349	491741.81	4870251.28	Non-Participating	30	36	40	45	47	50
350	502824.36	4875679.02	Non-Participating	36	39	42	46	47	50
351	488336.85	4876851.24	Non-Participating	29	36	40	45	47	50
352	495596.99	4864158.82	Non-Participating	34	37	41	45	47	50
353	491690.59	4870352.19	Non-Participating	30	36	40	45	47	50
354	508881.77	4871158.61	Non-Participating	34	38	41	45	47	50
355	502671.38	4875862.64	Non-Participating	36	38	41	45	47	50
356	505835.12	4873648.89	Non-Participating	36	39	42	46	47	50
357	503841.78	4864815.50	Non-Participating	30	36	40	45	47	50
358	493137.26	4879037.00	Non-Participating	33	37	41	45	47	50
359	495018.61	4862796.39	Non-Participating	29	36	40	45	47	50
360	491382.19	4865101.53	Non-Participating	27	36	40	45	47	50
361	488227.26	4874360.15	Participating	28	36	40	45	47	50
362	494673.57	4875982.30	Non-Participating	40	41	43	46	48	50
363	499603.78	4875103.88	Non-Participating	37	39	42	46	47	50
364	501230.12	4875352.04	Non-Participating	38	40	42	46	47	50
365	508497.51	4873580.91	Non-Participating	31	37	41	45	47	50
366	508610.68	4873584.75	Non-Participating	31	36	41	45	47	50
367	508645.50	4873585.73	Non-Participating	31	36	41	45	47	50
368	506061.93	4874108.69	Non-Participating	35	38	41	45	47	50
369	500547.66	4876700.33	Non-Participating	33	37	41	45	47	50
370	506051.62	4871490.73	Non-Participating	43	43	45	47	48	51
371	499003.18	4875289.99	Non-Participating	36	38	41	45	47	50
372	493163.47	4862892.03	Non-Participating	27	36	40	45	47	50
373	495733.86	4877787.86	Non-Participating	33	37	41	45	47	50
374	488331.26	4876045.64	Participating	29	36	40	45	47	50
375	495703.45	4874365.14	Participating	42	42	44	47	48	51
376	493010.79	4877410.17	Participating	42	43	44	47	48	51
377	491814.47	4869464.04	Participating	30	36	40	45	47	50
378	505131.50	4874516.31	Non-Participating	36	39	42	46	47	50

Table F-1: Project + Ambient Sound Levels at Receptors

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Sound Level (dBA) ¹	Total L ₅₀ Sound Level (Modeled + Ambient)				
	X (m)	Y (m)			35 dBA Ambient	40 dBA Ambient	45 dBA Ambient	47 dBA Ambient	50 dBA Ambient
379	493828.30	4866305.38	Non-Participating	32	37	41	45	47	50
380	494525.65	4872748.24	Non-Participating	38	39	42	46	47	50
381	507887.22	4870232.34	Participating	42	43	44	47	48	51
382	501220.91	4863779.36	Non-Participating	31	36	41	45	47	50
383	502811.08	4875791.86	Non-Participating	36	38	41	46	47	50
384	500691.52	4871972.10	Non-Participating	45	45	46	48	49	51
385	509717.05	4872284.24	Non-Participating	30	36	40	45	47	50
386	496555.95	4874246.61	Participating	38	40	42	46	48	50
387	492199.55	4873593.52	Participating	37	39	42	46	47	50
388	497898.95	4862420.50	Non-Participating	31	36	41	45	47	50
389	502722.77	4875265.62	Non-Participating	38	40	42	46	48	50
390	499511.63	4876710.19	Non-Participating	33	37	41	45	47	50
391	489397.15	4874448.48	Participating	31	36	41	45	47	50
392	495560.39	4869683.96	Non-Participating	40	41	43	46	48	50
393	494677.85	4874842.56	Participating	46	46	47	48	49	51
394	495476.72	4865142.67	Non-Participating	36	39	41	46	47	50
395	505419.99	4874473.85	Non-Participating	36	38	41	45	47	50
396	506061.42	4865852.28	Non-Participating	31	36	40	45	47	50
397	506082.39	4865857.89	Non-Participating	31	36	40	45	47	50
398	509057.18	4869533.17	Non-Participating	33	37	41	45	47	50
399	489683.66	4871204.50	Non-Participating	28	36	40	45	47	50
400	497395.94	4863196.86	Non-Participating	34	37	41	45	47	50
401	509081.25	4866514.23	Non-Participating	28	36	40	45	47	50
402	496393.62	4861524.14	Non-Participating	28	36	40	45	47	50
403	493409.85	4872818.20	Non-Participating	36	39	41	46	47	50
404	504438.28	4868964.58	Participating	45	45	46	48	49	51
405	500749.57	4876674.35	Non-Participating	33	37	41	45	47	50
406	499586.30	4876513.64	Non-Participating	33	37	41	45	47	50
407	501133.29	4869524.33	Non-Participating	42	42	44	47	48	51
408	488226.20	4877367.74	Non-Participating	28	36	40	45	47	50
409	491716.82	4878333.38	Non-Participating	36	38	41	45	47	50
410	495595.08	4861914.80	Non-Participating	28	36	40	45	47	50
411	495437.61	4866427.58	Participating	38	40	42	46	47	50
412	491558.71	4870331.03	Non-Participating	30	36	40	45	47	50
413	494862.10	4876074.35	Non-Participating	39	41	43	46	48	50
414	492089.64	4871150.41	Participating	31	36	40	45	47	50
415	495468.48	4864632.88	Non-Participating	35	38	41	45	47	50
416	493766.86	4871238.86	Non-Participating	34	37	41	45	47	50
417	509722.75	4871708.96	Non-Participating	31	36	40	45	47	50
418	501064.43	4868684.20	Non-Participating	40	41	43	46	48	50
419	502505.60	4875781.28	Non-Participating	36	39	41	46	47	50
420	497293.09	4874334.76	Non-Participating	38	40	42	46	48	50
421	497274.63	4874334.92	Non-Participating	38	40	42	46	48	50
422	497256.16	4874334.77	Non-Participating	38	40	42	46	48	50
423	497237.89	4874334.67	Non-Participating	38	40	42	46	48	50
424	497219.31	4874334.59	Non-Participating	38	40	42	46	48	50
425	497200.95	4874334.85	Non-Participating	38	40	42	46	48	50
426	497278.72	4874353.53	Non-Participating	38	40	42	46	48	50
427	497257.81	4874352.60	Non-Participating	38	40	42	46	48	50
428	497236.58	4874352.64	Non-Participating	38	40	42	46	48	50
429	497221.47	4874352.52	Non-Participating	38	40	42	46	48	50
430	497200.99	4874369.50	Non-Participating	38	40	42	46	48	50
431	497219.57	4874369.71	Non-Participating	38	40	42	46	48	50
432	497237.79	4874369.57	Non-Participating	38	40	42	46	48	50

Table F-1: Project + Ambient Sound Levels at Receptors

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Sound Level (dBA) ¹	Total L ₅₀ Sound Level (Modeled + Ambient)				
	X (m)	Y (m)			35 dBA Ambient	40 dBA Ambient	45 dBA Ambient	47 dBA Ambient	50 dBA Ambient
433	497256.20	4874369.63	Non-Participating	38	40	42	46	48	50
434	497274.63	4874369.66	Non-Participating	38	40	42	46	48	50
435	497293.00	4874369.73	Non-Participating	38	40	42	46	48	50
436	500886.20	4876660.66	Non-Participating	33	37	41	45	47	50
437	499668.60	4875349.36	Non-Participating	36	39	42	46	47	50
438	500770.03	4876675.90	Non-Participating	33	37	41	45	47	50
439	506995.22	4872765.17	Non-Participating	36	38	41	45	47	50
440	499639.21	4874370.00	Non-Participating	42	43	44	47	48	51
441	490945.40	4879140.93	Non-Participating	31	36	41	45	47	50
442	495598.94	4875650.06	Participating	41	42	44	47	48	51
443	492906.37	4875984.85	Participating	46	46	47	48	49	51
444	509479.19	4869914.41	Non-Participating	32	37	41	45	47	50
445	501290.11	4862407.81	Non-Participating	29	36	40	45	47	50
446	488509.35	4879213.50	Non-Participating	27	36	40	45	47	50
447	506635.17	4867819.96	Non-Participating	35	38	41	45	47	50
448	506437.32	4875179.84	Non-Participating	32	37	41	45	47	50
449	500652.58	4876684.25	Non-Participating	33	37	41	45	47	50
450	499654.24	4863571.20	Non-Participating	33	37	41	45	47	50
451	507535.22	4871149.63	Non-Participating	44	44	45	47	49	51
452	500451.92	4876714.42	Non-Participating	33	37	41	45	47	50
453	508143.08	4871003.16	Non-Participating	39	41	43	46	48	50
454	500843.70	4876652.47	Non-Participating	33	37	41	45	47	50
455	508917.86	4873581.47	Non-Participating	30	36	40	45	47	50
456	501209.40	4869298.05	Participating	42	43	44	47	48	51
457	502417.67	4875910.23	Non-Participating	36	38	41	45	47	50
458	497283.92	4872250.10	Non-Participating	41	42	44	47	48	51
459	500981.00	4876708.76	Non-Participating	33	37	41	45	47	50
460	496395.27	4863671.46	Non-Participating	34	37	41	45	47	50
461	494020.79	4868808.31	Non-Participating	34	37	41	45	47	50
462	490427.86	4873183.64	Non-Participating	32	37	41	45	47	50
463	490497.29	4879284.50	Non-Participating	30	36	40	45	47	50
464	491468.31	4871037.31	Non-Participating	30	36	40	45	47	50
465	490452.59	4873194.31	Non-Participating	32	37	41	45	47	50
466	495562.49	4870203.57	Participating	40	41	43	46	48	50
467	491620.99	4872745.10	Non-Participating	33	37	41	45	47	50
468	500723.37	4876670.77	Non-Participating	33	37	41	45	47	50
469	507857.09	4872987.73	Participating	33	37	41	45	47	50
470	498631.77	4875978.22	Non-Participating	34	37	41	45	47	50
471	499698.91	4871923.64	Participating	45	46	46	48	49	51
472	504468.79	4869548.16	Participating	46	46	47	48	49	51
473	502756.22	4863425.02	Non-Participating	29	36	40	45	47	50
474	490837.88	4875989.18	Non-Participating	39	40	42	46	48	50
475	492326.49	4874457.09	Participating	43	44	45	47	49	51
476	490247.04	4876072.83	Non-Participating	35	38	41	45	47	50
477	496021.63	4868651.59	Participating	43	44	45	47	48	51
478	489719.66	4878734.68	Non-Participating	30	36	40	45	47	50
479	491912.40	4874442.94	Participating	41	42	44	47	48	51
480	492335.56	4877666.68	Non-Participating	41	42	44	47	48	51
481	494755.62	4867301.87	Non-Participating	35	38	41	45	47	50
482	488311.29	4878360.36	Non-Participating	28	36	40	45	47	50
483	502759.90	4866445.66	Non-Participating	34	38	41	45	47	50
484	500348.72	4876733.11	Non-Participating	33	37	41	45	47	50
485	505318.66	4874468.86	Non-Participating	36	39	41	46	47	50
486	501125.52	4866792.07	Non-Participating	36	38	41	45	47	50

Table F-1: Project + Ambient Sound Levels at Receptors

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Sound Level (dBA) ¹	Total L ₅₀ Sound Level (Modeled + Ambient)				
	X (m)	Y (m)			35 dBA Ambient	40 dBA Ambient	45 dBA Ambient	47 dBA Ambient	50 dBA Ambient
487	508605.03	4873649.14	Participating	31	36	41	45	47	50
488	499202.59	4863171.88	Non-Participating	33	37	41	45	47	50
489	495135.78	4868817.65	Non-Participating	37	39	42	46	47	50
490	494741.77	4874889.79	Participating	46	46	47	48	49	51
491	492757.62	4877748.96	Non-Participating	40	41	43	46	48	50
492	490731.38	4870543.18	Non-Participating	29	36	40	45	47	50
493	490349.33	4873858.84	Non-Participating	33	37	41	45	47	50
494	499637.54	4876318.99	Non-Participating	34	37	41	45	47	50
495	496785.28	4877588.42	Non-Participating	32	37	41	45	47	50
496	500627.99	4876689.66	Non-Participating	33	37	41	45	47	50
497	508252.48	4868033.65	Non-Participating	32	37	41	45	47	50
498	509725.01	4867937.72	Non-Participating	29	36	40	45	47	50
499	505981.82	4864375.37	Non-Participating	28	36	40	45	47	50
500	499436.27	4878799.75	Non-Participating	29	36	40	45	47	50
501	506077.00	4874303.87	Non-Participating	34	38	41	45	47	50
502	496744.15	4869518.04	Non-Participating	46	47	47	49	50	52
503	490319.60	4876916.87	Non-Participating	35	38	41	45	47	50
504	489803.92	4873069.39	Non-Participating	30	36	40	45	47	50
505	492302.79	4874377.83	Participating	43	43	44	47	48	51
506	495306.29	4865922.44	Non-Participating	37	39	42	46	47	50
507	505185.78	4874513.54	Non-Participating	36	39	42	46	47	50
508	499597.88	4876172.38	Non-Participating	33	37	41	45	47	50
509	501365.76	4862090.52	Non-Participating	28	36	40	45	47	50
510	504360.97	4869658.55	Participating	46	47	47	49	50	52
511	497691.90	4869423.21	Non-Participating	47	47	47	49	50	52
512	497142.14	4873103.16	Participating	45	45	46	48	49	51
513	496060.29	4874587.30	Participating	40	41	43	46	48	50
514	495126.58	4870677.51	Non-Participating	38	40	42	46	47	50
515	492250.67	4877501.38	Participating	43	44	45	47	48	51
516	490521.74	4868389.31	Non-Participating	26	35	40	45	47	50
517	492281.45	4872422.94	Participating	34	37	41	45	47	50
518	500409.09	4876727.57	Non-Participating	33	37	41	45	47	50
519	503747.13	4874987.28	Participating	39	40	42	46	48	50
520	506985.27	4871798.35	Non-Participating	40	41	43	46	48	50
521	496705.42	4877845.55	Non-Participating	31	37	41	45	47	50
522	500389.56	4876729.01	Non-Participating	33	37	41	45	47	50
523	505048.39	4874549.97	Non-Participating	37	39	42	46	47	50
524	504946.69	4872040.72	Participating	46	46	47	48	49	51
525	489918.96	4870356.26	Non-Participating	26	36	40	45	47	50
526	494169.21	4873281.87	Participating	40	41	43	46	48	50
527	505573.00	4874186.08	Non-Participating	36	38	41	45	47	50
528	499366.96	4863166.72	Non-Participating	33	37	41	45	47	50
529	499616.32	4874178.09	Participating	43	44	45	47	48	51
530	509643.87	4871308.65	Non-Participating	31	37	41	45	47	50
531	499067.37	4872230.94	Participating	45	45	46	48	49	51
532	489306.45	4874282.73	Participating	31	36	40	45	47	50
533	496489.80	4869537.38	Participating	45	46	47	48	49	51
534	505164.50	4872318.94	Participating	43	44	45	47	49	51
535	494634.19	4870301.00	Non-Participating	36	38	41	45	47	50
536	499492.38	4869310.44	Non-Participating	43	44	45	47	48	51
537	504630.53	4874072.92	Non-Participating	40	41	43	46	48	50
538	504552.69	4874040.29	Non-Participating	40	42	43	46	48	50
539	504556.13	4874084.02	Non-Participating	40	41	43	46	48	50
540	504547.30	4874140.68	Non-Participating	40	41	43	46	48	50

Table F-1: Project + Ambient Sound Levels at Receptors

Receptor ID	Coordinates UTM NAD83 Zone 15N		Participation Status	Source Only L ₅₀ Sound Level (dBA) ¹	Total L ₅₀ Sound Level (Modeled + Ambient)				
	X (m)	Y (m)			35 dBA Ambient	40 dBA Ambient	45 dBA Ambient	47 dBA Ambient	50 dBA Ambient
541	502725.31	4874382.87	Participating	44	44	45	47	49	51
542	501527.90	4872857.67	Participating	47	47	48	49	50	52
543	504972.65	4872837.46	Non-Participating	41	42	43	46	48	51
544	504438.06	4874785.50	Non-Participating	38	40	42	46	48	50
545	504203.57	4872854.80	Participating	44	45	46	48	49	51
546	504139.68	4874436.98	Participating	41	42	44	46	48	51
547	504646.40	4874483.32	Non-Participating	38	40	42	46	47	50
548	503999.63	4872857.70	Participating	45	46	47	48	49	51
549	504935.78	4872740.79	Non-Participating	42	42	44	47	48	51
550	491361.28	4865072.21	Non-Participating	27	36	40	45	47	50
551	491649.13	4864075.81	Non-Participating	26	36	40	45	47	50
552	491087.39	4863167.93	Non-Participating	25	35	40	45	47	50
553	491823.21	4863310.08	Non-Participating	26	35	40	45	47	50
554	492097.62	4863009.42	Non-Participating	26	35	40	45	47	50

¹ Sound pressure levels rounded to the nearest whole decibel are shown. Sound level addition was performed with greater precision.