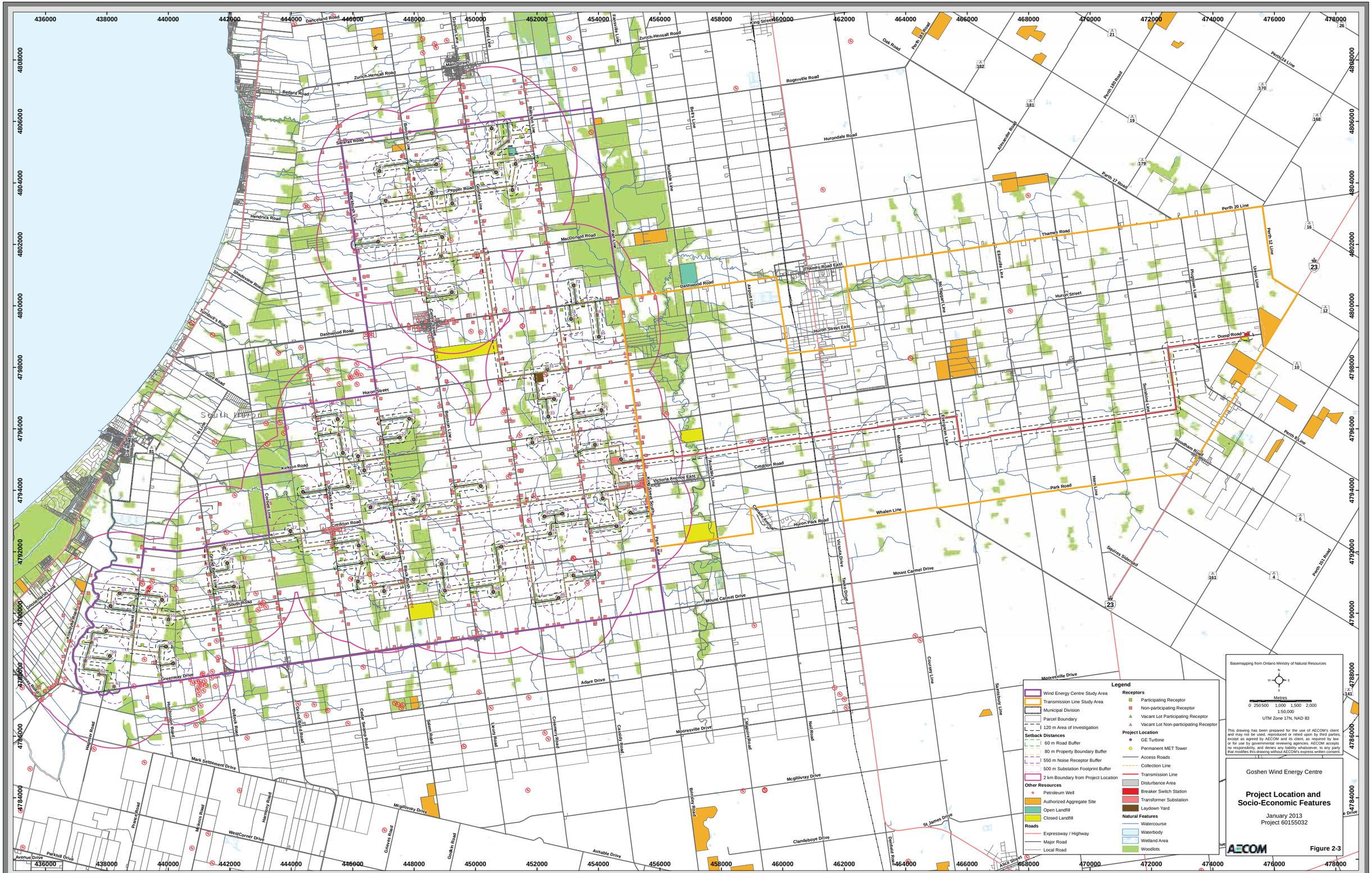
Legend
Wind Energy Centre Study Area
Transmission Line Study Area
Municipal Division
Parcel Boundary
120 m Area of Investigation
Setback Distances
60 m Road Buffer
80 m Property Boundary Buffer
550 m Noise Receptor Buffer
500 m Substation Footprint Buffer
2 km Boundary from Project Location
Other Resources
Petroleum Well
Authorized Aggregate Site
Open Landfill
Closed Landfill
Roads
Expressway / Highway
Major Road
Local Road
Receptors
Participating Receptor
Non-participating Receptor
Vacant Lot Participating Receptor
Vacant Lot Non-participating Receptor
Project Location
GE Turbine
Permanent MET Tower
Access Roads
Collection Line
Transmission Line
Disturbance Area
Breaker Switch Station
Transformer Substation
Laydown Yard
Natural Features
Watercourse
Waterbody
Wetland Area
Woodlots
Basemapping from Ontario Ministry of Natural Resources
Metres
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UTM Zone 17N, NAD 83
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Goshen Wind Energy Centre
Project Location and Socio-Economic Features
January 2013
Project 60155032
AECOM
Figure 2-3
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3. Facility Design Plan

The following section provides a summary of the Facility Design Plan.

3.1 Wind Turbine Specifications

With a total nameplate capacity of 102 MW, the Project is categorized as a Class 4 facility under *O. Reg. 359/09*. Although NextEra is seeking an REA for up to 72 wind turbines, only 63 are proposed to be constructed for the Project.

The wind turbine technology proposed for this Project is the GE 1.6-100 Wind Turbine and GE 1.56-100 Wind Turbine (one turbine only). The turbines are 3-bladed, upwind, horizontal-axis wind turbines that are state of the art technology. The turbines have a 100 m rotor diameter with a swept area of 7,854 m; each blade is connected to the main shaft via the hub. The turbine is mounted on an 80 m tubular steel tower which contains an internal ladder provided for maintenance access. The turbine will be constructed on a foundation that is approximately 400 m^2. The foundation consists of poured concrete and steel rebar to provide added strength.

The nacelle houses the main components of the wind turbine such as the rotor shaft, gear box, couplings, control panel, bearing brackets and the generator. The nacelle is equipped with sound-proofing, is ventilated and the interior is illuminated with electric lights. Some of the wind turbines will have external lighting in accordance with the requirements of Transport Canada (TC).

Table 3-1 below provides a summary of the turbine specifications. Please refer to the Wind Turbine Specifications Report (AECOM, 2013) for more detailed information on the wind turbines proposed for the Project.

Table 3-1 Summary of Technical Specifications

Specification	GE 1.6-100 Wind Turbine	GE 1.56-100 Wind Turbine
Make	General Electric	General Electric
Model	1.6-100	1.56-100
Name Plate Capacity	1.62 MW	1.56 MW
Hub Height	80 m	80 m
Rotor Diameter	100 m	100 m
Minimum Rotational Speed	9.75 rpm	9.75 rpm
Maximum Rotational Speed	15.33 rpm	16.2 rpm

3.2 Laydown and Storage Areas

A temporary laydown and storage area will be constructed on privately owned land for the purpose of staging and storing equipment during the construction phase. A temporary electrical service line will be connected to the local distribution line for the purpose of providing electrical power to the construction offices. Activities on this site will include materials storage, equipment refuelling, and construction offices. The area will be approximately 4 hectares (10 acres) in area.

3.3 Turbine Laydown and Storage Areas

A 122 m by 122 m square around each wind turbine will be established for the laydown and assembly of the wind turbine components. The construction trailers will receive electrical power through a temporary electrical service line connected to the local distribution line.

3.4 Collection Lines

The system that connects each turbine to the transformer substation will consist of 34.5 kV electrical collection lines that will be buried 1 m below grade on private property or within the municipal road right of way. There may be occasional locations where the collections lines are placed above ground on wood, concrete or steel poles for technical reasons. Above ground electrical junction boxes will be used to connect sections of underground collection lines.

3.5 Transformer Substation and Breaker Switch Station

Approximately two to three hectares in size, the transformer substation will either be located on privately held lands through a lease agreement or on land purchased by Goshen Wind, Inc. The electricity collected via the 34.5 kV underground collection lines will converge at the transformer substation where the electricity will be “stepped-up” to 115 kV for transmission and then routed to a breaker switch station. The breaker switch station will occupy less than 0.4 hectares (1 acre) of land and is the connection point with the existing Hydro One 115 kV transmission line. The substation equipment will include an isolation switch, a circuit breaker, a step-up transformer, transmission switch gear, instrument transformers, grounding and metering equipment. All substation grounding equipment will meet the Ontario Electrical Safety Code. The substation will be connected to the existing electrical distribution line to supply power for the control housing lighting and equipment.

3.6 Electrical Transmission

A 115 kV electrical transmission line from the step-up transformer substation to the connection point with the Provincial electricity grid is proposed to be located on private property, or within existing road right-of-ways. It is anticipated that the transmission line will be mounted on new transmission line poles. There may be occasional places where the line is placed underground for technical reasons. The poles are proposed to be constructed of wood, concrete or steel and will be between 18 and 30 m tall.

The interconnection plan for any wind energy centre is subject to study, design and engineering by the Independent Electricity System Operator which manages the province’s electricity grid, Hydro One, the local distribution company and the Ontario Energy Board, which regulates the industry through the Transmission System Code and the Distribution System Code.

3.7 Access Roads

On-site access roads to each turbine will be constructed to provide an access point to the properties for equipment transport during the construction phase and for maintenance activities during operation. Typically the access roads will be 11 m wide during the construction phase to accommodate the large cranes (with an additional 2 m clearance on each side for travel), and may be reduced in width at the landowner’s request following construction.

3.8 Operations and Maintenance Building

An operations building, approximately 30 m by 15 m in size, will be constructed on privately held lands (on or near the same parcel as the substation for the Project) for the purpose of monitoring the day-to-day operations of the wind energy centre and supporting maintenance efforts. A small parking lot will be constructed to accommodate staff vehicles. Prior to the construction phase, a Stormwater Pollution Prevention Study will be conducted to address any potential effects associated with stormwater runoff.

Potable water will be supplied by a well or through the municipal water system and a septic bed will be constructed for the disposal of sewage. The septic bed will be constructed to the minimum size required for the size of the operation and maintenance building. It is the Project owner's responsibility to ensure proper maintenance of the septic system. The operations and maintenance building, septic system and water supply will be constructed in accordance with applicable municipal and provincial standards.

3.9 Permanent Meteorological Towers

Permanent meteorological towers are an operational requirement of the Independent Electricity System Operator (IESO) as an electricity market participant (this includes all generators of electricity) and allow the IESO to operate the system reliably and safely.

Three permanent meteorological towers will be installed at the Project. The towers are typically up to 80 m in height. No significant soil or vegetation disturbance is anticipated. The use of meteorological data is key to the safe and efficient operation of a wind energy centre. Some operational decisions made using meteorological data include:

- Cut-in wind speed;
- Cut-out wind speed;
- Turbine shut down during potential icing conditions; and,
- Turbine shut down during extreme weather events.

4. Facility Operations Plan

The following section describes the Facility Operations Plan; including daily operations activities and routine/ unplanned maintenance activities.

4.1 Wind Turbine Operation

The wind energy centre will require full time technical and administrative staff to maintain and operate the facility. The primary workers will be wind technicians (i.e., technicians who carry out maintenance on the turbines) along with a site supervisor. The Project will be operated by a staff of five to eight people who will work out of the operations and maintenance building.

The wind turbines will be operating (i.e., in "Run" mode and generating electricity) when the wind speed is within the operating range for the turbine and there are no component malfunctions. Each turbine has a comprehensive control system that monitors the subsystems within the turbine and the local wind conditions to determine whether the conditions are suitable for operation. If an event occurs which is considered to be outside the normal operating range of the turbine (such as low hydraulic pressures, unusual vibrations or high generator temperatures), the wind turbine will immediately take itself out of service and report the condition to the Operations Centre, located in the operations and maintenance building. A communication line connects each turbine to the Operations Centre, which closely monitors and, as required, controls the operation of each turbine. The wind turbine system will be integrated with the electric interconnection Supervisory Control and Data Acquisition (SCADA) to ensure that the Project critical controls, alarms and functions are properly co-ordinated for safe, secure and reliable operation. The wind turbine will also report to NextEra's Central Operations Facility during non-working hours.

4.2 Routine Turbine Maintenance

Routine preventative maintenance activities will be scheduled at six month intervals with specific maintenance tasks scheduled for each interval. Maintenance will be done by removing the turbine from service and having two to three technicians climb the tower to spend a full day carrying out maintenance activities.

Consumables such as the various greases used to keep the mechanical components operating and oil filters for gearboxes and hydraulic systems will be used for routine maintenance tasks. Following all maintenance work on the turbine, the area will be cleaned up. All surplus lubricants and grease-soaked rags will be removed and disposed of as required by applicable regulations. All maintenance activities will adhere to the same spill prevention protocols undertaken during the construction phase.

4.3 Unplanned Turbine Maintenance

Modern wind turbines are very reliable and the major components are designed to operate for at least 30 years. However, there is a possibility that component failure may occur despite the high reliability of the turbines fleet-wide. Most commonly, the failure of small components such as switches, fans, or sensors will take the turbine out of service until the faulty component is replaced. These repairs can usually be carried out by a single crew visiting the turbine for several hours.

Events involving the replacement of a major component such as a gearbox or rotor are rare. If they do occur, the use of large equipment, sometimes as large as that used to install the turbines, may be required.

It is possible that an access road, built for construction and returned to farmland when the construction phase is completed, would need to be rebuilt to carry out repairs to a damaged turbine. Typically only a small percentage of turbines would need to be accessed with large equipment during their operating life.

4.4 Electrical System Maintenance

The collector lines and substation will require periodic preventative maintenance activities. Routine maintenance will include condition assessment for above-ground infrastructure and protective relay maintenance of the substation, in addition to monitoring of the secondary containment system for traces of oil. Finally, vegetation control will be required around the transmission line to prevent any damage to the line and ensure safe operation. Any vegetation that has the potential to grow to more than 4.3 m above grade will be cleared. The vegetation is typically cleared by mechanized equipment (e.g., chainsaw / hydro axe).

4.5 Waste Management

Waste generated during the operations phase will be removed from the operations and maintenance building by a licensed operator and disposed of at an approved facility. Any lubricants or oils resulting from turbine maintenance will be drummed on site and disposed of in accordance with applicable Provincial regulations. All reasonable efforts will be made to minimize waste generated and to recycle materials including returning packaging material to suppliers for reuse/recycling. The spill prevention protocols followed during construction will continue to be observed throughout the facility's operations and maintenance activities.

5. Emergency Response and Communication Plan

This Emergency Response and Communication Plan (the Plan) for the Goshen Wind Energy Centre was prepared in accordance with the requirements of *O. Reg. 359/09*. The purpose of the Plan is to define an avenue for ongoing communication throughout the construction, operation and decommissioning phases of the Project. This will ensure that members of the community, Aboriginal communities, local municipalities and government Ministries are kept apprised of pertinent Project activities, in addition to any emergencies in the unlikely event that one should occur. The Emergency Response and Communication Plan will also be filed with the MOE, the Municipalities of Bluewater and South Huron, and Huron County.

The following sections outline NextEra's communication commitments in relation to emergency response, ongoing communication and complaint management.

5.1 Emergency Response

NextEra Energy Resources, the parent company of NextEra, maintains standard Emergency Action Plans for all of its operating facilities. Throughout the construction, operation and decommissioning phases of the Project, an up-to-date Emergency Action Plan will be maintained in the Project office at the Operations and Maintenance Building. The Emergency Action Plan will contain current contact information for emergency responders, including local police and fire departments, and will outline the chain of communication between on-site employees, NextEra, emergency contacts, the local community and other pertinent stakeholders in the event that an emergency situation should arise. NextEra's Emergency Action Plans typically include the following information:

- Designation of facility emergency co-ordinators;
- Process description for responding to emergencies;
- Objectives for emergency response and communication;
- Local emergency response contact phone numbers;
- Regulatory references;
- Required health and safety training for employees;
- Facility information, including exact location;
- Facility emergency procedures;
- Immediate site evacuation procedures and routes;
- Delayed site evacuation procedures;
- Process for documenting personnel injuries/serious health conditions;
- Fire response plan;
- Process for documenting chemical/oil spills and releases;
- Material Safety Data Sheets (MSDS) for all chemicals used in construction and maintenance; and
- Weather-related emergency procedures.

The Emergency Action Plan's communication protocol will be finalized in consultation with the local municipalities and will include the following steps:

- The person observing the emergency will contact first responders immediately via a 911 operator, as required by the site Emergency Action Plan; and
- A NextEra representative will then contact the MOE, including the Spills Action Centre, if required, in accordance with Sections 15 and 92 of the Environmental Protection Act and the local municipalities / response personnel.

Depending on the level of risk associated with the incident, local community members will be notified at the discretion of NextEra. Employees will be trained on the Emergency Action Plan's procedures and the Plan will be maintained on-site and updated when required to ensure it contains current information throughout the construction, operation and decommissioning phases of the Project.

5.2 Ongoing (Non-Emergency) Communication

NextEra will maintain communication with the local municipalities, members of the community and Aboriginal communities, where appropriate, throughout the construction, operation and decommissioning phases of the Project.

Broad community relations activities are seen as essential to the implementation of a successful project. To this end, the following activities will be undertaken:

a) On-site tours with community leaders, local media and other interested parties during construction; and
b) Installation of construction signage notifying community members of construction activity.

In addition, letters will be mailed to pertinent stakeholders to inform them of:

- The commencement of construction activities;
- The commencement of decommissioning activities; and
- Any other activities that NextEra would like to share with the local community.

A project email address and phone number will be maintained and monitored by the operations manager and will be used to respond to stakeholder questions and/or complaints. Contact information for the operations manager will be provided on all notifications.

5.3 Complaints Resolution Process

NextEra acknowledges that some members of the community may have concerns regarding construction activities and long-term wind farm operations. To resolve disputes in a collaborative manner, NextEra will follow the complaints resolution process described below.

- Should any complaints arise throughout the course of the construction, operation and decommissioning phases, a NextEra representative will contact the complainant within 24 hours of receiving the complaint to understand and seek a resolution. NextEra will notify the local MOE district office of the complaint and prepare / file an initial Complaint Record and include the following:
  a) name, address and phone number of the complainant;
  b) date and time of the complaint;
  c) details of the complaint;
  d) follow-up action to be taken; and
  e) steps taken to prevent the situation from occurring in the future, where applicable;
- If the complaint cannot be resolved through a phone call, a face-to-face meeting may be scheduled with the complainant;
- An updated Complaint Record will be maintained to describe the proposed resolution of the complaint, where applicable; and
- Complaint Records will be maintained at the Project office in the Operations and Maintenance Building and will be made available to MOE field inspection staff should a request be made.

The Construction Manager will be responsible for the implementation of the complaints resolution process during the construction phase and the Operations Manager will take on this responsibility during the operations phase.

6. Environmental Effects Monitoring Plan

This section describes potential effects associated with the daily function of the Project in addition to mitigation measures and monitoring commitments that will be implemented to minimize these potential effects. The potential effects described below are also presented in Section 3 of the PDR (AECOM, 2013).

For each potential effect, performance objectives were developed to describe a desired outcome of mitigation. Next, mitigation measures were proposed to achieve the performance objectives.

Residual effects, which are those effects that remain following the application of mitigation measures and monitoring commitments, were then assessed based on professional judgment as well as previous Project experience. Where possible, the significance of residual adverse effects has been described based on the following:

Magnitude .... the size or degree of the effect compared against baseline conditions; and
Likelihood .... the probability that the effect will occur.

Finally, where monitoring commitments have been identified, they are intended to verify that the mitigation measures achieve performance objectives. Should the monitoring during the construction and operation of the Project reveal that the mitigation measures are not achieving the intended result, the identified contingency measures will then be implemented.

6.1 Cultural Heritage

Stage 1 and 2 Archaeological Assessments (Golder, 2012) were conducted and factored into the overall Project layout. The Stage 1 Archaeological Assessment consists of an initial desktop archaeological study and site visit and was carried out in the summer 2010 and updated in spring 2012. This assessment determined that there are known archaeological resources within the Project Study Area (**Figure 1-2**), in addition to properties with the potential to contain archaeological resources.

In 2011 and 2012, pedestrian surveys were conducted within the Project Study Area in support of the Stage 2 Archaeological Assessment, according to the 2011 *Standards and Guidelines for Consultant Archaeologists* issued by the Ontario Ministry of Tourism, Culture and Sport (MTCS) (Government of Ontario, 2011). A total of 62 archaeological sites were identified and 33 sites have been recommended for further Stage 3 archaeological assessment.

A Cultural Heritage Assessment (Golder, 2012) was also completed to identify built heritage and cultural heritage landscape resources related to the Euro-Canadian land use in the area dating prior to 1970. All work was carried out in accordance with the *Ontario Heritage Act*, the *Provincial Policy Statement*, and the *Environmental Assessment Act*. The report identified 135 structures (67 houses and 68 barns or barn complexes) as greater than 40 years old within the Project Study Area and as having general historical interest contributing to the character of the vernacular rural landscape. When applying the criteria set out in *Ontario Regulation 9/06*, 99 of these structures (46 houses and 53 barns) were determined to have cultural heritage value or interest. Following the evaluation of anticipated impacts, both direct and indirect, according to *InfoSheet #5* (Government of Ontario, 2006), no anticipated impacts were identified. As there are no anticipated impacts to the cultural heritage features, no further work is recommended.

6.1.1 Potential Effects

No effects to protected properties, archaeological resources or heritage resources are anticipated as a result of the operational phase of the Project. Therefore, no mitigation measures or monitoring are proposed.

6.2 Natural Heritage

The potential effects, mitigation measures, residual effects and monitoring commitments regarding the natural heritage features (including significant wetlands, woodlands, valleylands, and wildlife habitat) were identified and evaluated in the Natural Heritage Assessment Report and Environmental Effects Monitoring Plan (AECOM, 2013) prepared based on the *Natural Heritage Assessment Guide for Renewable Energy Projects* (Government of Ontario, 2010) and submitted to the Ontario Ministry of Natural Resources (MNR) for review and sign-off.

Following the completion of the Records Review and Site Investigation for all natural heritage features located within 120 m of the Project Location, an Evaluation of Significance was conducted to identify any features that required an Environmental Impact Study (EIS). Below is a description of the significant natural heritage features located within 120 m of the Project Location for which an EIS was conducted.

Table 6-1 Summary of Natural Features Carried Forward to the Environmental Impact Study

Feature	Natural Features Carried Forward to EIS
Wetlands	14 wetland units or wetland complexes were treated as significant and included in the EIS.
Woodlands	65 woodlands were determined to be significant or treated as significant and therefore included in the EIS.
Significant Wildlife Habitat	The following significant wildlife habitats were evaluated and determined to be significant in or within the 120 m Area of Investigation and within 120 m of qualifying project infrastructure, and were therefore included in the EIS. • 5 bat maternity colonies; • One colonially-nesting bird breeding habitat (tree/shrub); • 4 amphibian woodland breeding habitats; • 6 habitats for plant species of conservation concern (multiple); and • One habitat for bird species of conservation concern (Red-headed Woodpecker).
	The following features were treated as significant for the purpose of this submission and included in the EIS (in some cases, a determination as to whether the mitigation measures described herein will be applied will be made based on the outcome of pre-construction surveys): • 2 Waterfowl stopover and staging areas (terrestrial); • 11 Bat maternity colonies; • 2 turtle wintering areas; • 8 Reptile hibernacula; • One deer winter congregation area; • One deer movement corridor; and, • 4 amphibian woodland breeding habitats.
	The following candidate significant wildlife habitats were identified within the 120 m Area of Investigation however not within 120 m of qualifying project infrastructure, and were therefore included in the EIS as *Generalized Candidate Significant Wildlife Habitat*: • Waterfowl nesting areas; • Reptile hibernacula; • Bat maternity colonies; • Amphibian woodland breeding habitat; • Amphibian wetland breeding habitat; • Habitats of plant species of conservation concern (numerous); • Habitat of bird species of conservation concern (numerous); • Habitat of insect species of conservation concern (numerous); • Mature forest stands; • Rare vegetation communities; • Turtle nesting area; • Turtle wintering areas; • Woodland raptor nesting habitat; • Woodland area-sensitive bird breeding habitat; • Terrestrial crayfish habitat; and, • Seeps and springs.

6.2.1 Potential Effects

The performance objectives, mitigation measures, residual effects, and the monitoring plan associated with potential effects to Significant Natural Heritage Features are described in **Table 6-2** below. Note that the measures described below, although specific to locations identified above, are not designed on a site-by-site basis. The mitigation measures must be designed and implemented based on individual site conditions and will be developed as sites are developed in more detail.

Table 6-2 Mitigation Measures, Residual Effects and Monitoring Plan: Natural Heritage Resources

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
Significant Wildlife Habitat				
Risk of bird mortality caused by turbines (Project-wide). **Risk of bat mortality caused by turbines (Project-wide).**	• Minimize disturbance and/or mortality to wildlife.	• Utilize a lighting scheme that will minimize risk to bird or bat collisions, while fulfilling Transport Canada requirements. • Implement contingency mitigation measures if mortality thresholds are exceeded based on the results of post-construction monitoring. • Operational mitigation techniques for birds, which would be applied at times of the year when mortality risks to the affected bird species are particularly high (e.g., migration) may include: ▪ Periodic shut-down of select turbines. ▪ Blade feathering • Mitigation techniques for bats may include: ▪ Changing the wind turbine cut-in speed to 5.5 m/s ▪ Feathering of blades when wind speeds are below 5.5 m/s • Co-ordinating turbine shut-down for maintenance with periods of high bat activity (specifically in June during the breeding season when bat maternity colony habitats are occupied) and/or mortality.	• Risk of bird and bat collisions with turbine minimized through mitigation. • Significance of residual effects will be determined based on the results of post-construction monitoring.	• Develop and implement a monitoring program for bird and bat mortality consistent with *Birds and Bird Habitats: Guidelines for Wind Power Projects* (MNR, 2011h) and *Bats and Bat Habitats: Guidelines for Wind Power Projects* (MNR, 2011g) including: ▪ Mortality surveys; ▪ Carcass removal trials; and ▪ Searcher efficiency trials. • Conduct monitoring during the core season for bird activity and bat activity (May 1-October 31) for the first three years of operation. Mortality surveys will be conducted at each monitored turbine twice per week (at least 30% of turbines) and raptor mortality surveys will be continued once per week in November. • Monitor all turbines within the Project Location once during the survey period for evidence of raptor mortalities. • Conduct subsequent monitoring for two years at individual turbines (and unmonitored turbines in close proximity) where significant bird or raptor annual mortality is identified. • Conduct effectiveness monitoring at individual turbines for three years where mitigation has been implemented. • Report the findings of the bird and bat mortality monitoring programs to MNR on an annual basis for the first 3 years of operation. • **Contingency Measures:** ▪ Institute changes to turbine operation if mortality thresholds are exceeded (see mitigation strategy in this table).
Risk of soil or water contamination from oil, gas, etc. during maintenance activities where access roads, turbines or the transmission line are within 30 m of significant wetlands.	• No off-site contamination of soil or no contamination of groundwater or surface water.	• Develop and implement an emergency spills plan outlining steps to contain any spills during maintenance activities to avoid contamination of significant wetlands.	• Residual effects considered negligible.	• No monitoring required. • **Contingency Measures:** ▪ Report the details of the spill to MOE, including a description of any assessment and remediation undertaken.

Table 6-2 Mitigation Measures, Residual Effects and Monitoring Plan: Natural Heritage Resources

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
Potential introduction of invasive species into wetland communities adjacent to access roads.	• Minimize species invasion into wetland communities.	• Develop and implement a restoration plan to re-vegetate the 5 m buffer between the access road and the wetland. This will include the 1 year application of an approved herbicide (as per Ausable Bayfield Conservation Authority) to eradicate invasive species followed by seeding with a native seed mix and the planting of native shrubs along the edge consistent with existing vegetation composition.	• Introduction of invasive species avoided or minimized through the application of mitigation measures. • Low likelihood and limited magnitude of effect as a result.	• Monitor re-vegetated areas once per growing season for two years to confirm survival of plantings and/or seed mix. • **Contingency Measures:** ▪ Should seed mix and/or plantings not survive, additional seeding and/or plantings will be undertaken.
Loss of forest cover (up to 2.6 ha) through vegetation clearing in Significant Woodlands due to transmission line establishment.	• No loss of forest cover over time.	• Establish an area of forest equal in area to the cleared area (up to 2.6 ha) through tree planting and management (e.g., in partnership with a local Conservation Authority). Details of the afforestation plan will be described in a Compensation Plan to be developed in consultation with MNR.	• Clearing of vegetation will occur for the transmission line. • Loss of forest cover minimized through afforestation; however there will be a time delay for the planted area to reach the same function as the cleared forest.	• Conduct post-planting inventory of planted area to determine success of establishment (may be undertaken by partner organization). • **Contingency Measures:** ▪ If plantation is not establishing for any number of reasons, conduct silvicultural intervention including, but not limited to: fill planting, cleaning, re-planting or thinning (may be undertaken by partner organization).
Disturbance to vegetation in Significant Woodlands as a result of spraying herbicide along transmission line.	• Minimize disturbance to vegetation.	• Minimize aerial extent of herbicide spraying along transmission line. • Only apply herbicides when wind speeds are low and no significant precipitation is expected (does not apply to agricultural practices).	• Operational effects considered negligible.	• As appropriate, and following the schedule for the application of herbicides, a certified Arborist or should be on site during the application of herbicides along transmission line.
Avoidance by Tundra Swans of stopover and staging habitats during migration due to proximity of turbines.	• Minimize disturbance or disruption to Tundra Swan stopover and staging habitats.	▪ Implement contingency mitigation measures if disturbance effects are detected through post-construction monitoring (contingency measures).	• Significance of residual effects will be determined based on the results of post-construction monitoring.	• Conduct 3 years of post-construction Tundra Swan monitoring at Features WSST-15 and WSST-36 (if determined to be significant) by a qualified Biologist, including: ▪ Conduct surveys on three occasions approximately one week apart during the peak migratory period, which typically occurs in March but can range from mid-February to mid-April. ▪ One survey station will be placed per 0.5 km of candidate Tundra Swan stopover and staging habitat and be monitored for approximately 15 min. ▪ All observed waterfowl will be recorded along with their approximate location, age and behavior. • The findings of the Tundra Swan monitoring programs will be reported back to MNR on an annual basis for the first 3 years of operation. • **Contingency Measures:** ▪ If significant declines or disappearance of species is detected, determine whether this is likely to have been caused by the Project. If so, implement corrective measures that are developed through consultation with MNR.

Table 6-2 Mitigation Measures, Residual Effects and Monitoring Plan: Natural Heritage Resources

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
Disturbance to Tundra Swan stopover and staging habitats due to vehicular traffic on access roads.	• Minimize disturbance or disruption to Tundra Swan stopover and staging habitat.	• Schedule regular (non-critical) maintenance activities to occur outside of the important period of staging Tundra Swan (March 1 to April 15), to the extent possible. • Maintain wildlife crossing signs and limit speed of vehicles (30 km/hr) near stopover and staging areas.	• Disturbance effects reduced through mitigation measures. • Operational effects minor (i.e., no or limited disturbance expected).	• No monitoring or contingency measures required.
Bats may be disturbed by noise from operation of turbines.	• Protect bat roosting habitat.	• Implement contingency mitigation measures (as per consultation with MNR) if disturbance effects are detected through post-construction monitoring.	• Significance of residual effects will be determined based on the results of post-construction monitoring.	• Conduct 3 years of post-construction monitoring for Features BMC-757, BMC-189, BMC-229, BMC-326, and BMC-342 according to protocol described for pre-construction survey (as described in March 2010 Draft version of *Bats and Bat Habitats: Guidelines for Wind Power Projects*) including: ▪ Through the night acoustic monitoring stations to be positioned within 10 m of the potential roost. ▪ Survey same stations as pre-construction survey. ▪ Visual monitoring to be conducted at dusk in June. ▪ Acoustic monitoring to begin at dusk and continue for 5 hours, for up to 10 nights, or until roost is confirmed. ▪ Monitoring to occur between June 1 and June 30. • Conduct 3 years of post-construction monitoring for Features BMC-235, BMC-242, BMC-249, BMC-267, BMC-282, BMC-352, and BMC-358 (if deemed to be significant) according to protocol described for pre-construction survey (as described in July 2011 version of *Bats and Bat Habitats: Guidelines for Wind Power Projects*) including: ▪ Conduct monitoring of roost trees during exit surveys throughout June. ▪ Conduct active visual and acoustic monitoring at the cavity opening or crevice from 30 minutes before dusk until 60 minutes after dusk in June. • The findings of all monitoring programs will be reported to MNR on an annual basis for the first 3 years of operation. • **Contingency Measures:** ▪ Institute changes to turbine operation if disturbance effects are detected through post-construction monitoring. ▪ Consultation with MNR to determine additional contingency measures if necessary.

Table 6-2 Mitigation Measures, Residual Effects and Monitoring Plan: Natural Heritage Resources

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
Bats may display avoidance behaviour caused by turbine lighting.	• Protect bat roosting habitat.	• Propose a lighting scheme that will minimize potential disturbance to bats while fulfilling Transport Canada requirements.	• Significance of residual effects will be determined based on the results of post-construction monitoring.	• Conduct 3 years of post-construction monitoring for Features BMC-757, BMC-189, BMC-229, BMC-326, and BMC-342 according to protocol described for pre-construction survey (as described in March 2010 Draft version of *Bats and Bat Habitats: Guidelines for Wind Power Projects*) including: ▪ Through the night acoustic monitoring stations to be positioned within 10 m of the potential roost. ▪ Survey same stations as pre-construction survey. ▪ Visual monitoring to be conducted at dusk in June. ▪ Acoustic monitoring to begin at dusk and continue for 5 hours, for up to 10 nights, or until roost is confirmed. ▪ Monitoring to occur between June 1 and June 30. • Conduct 3 years of post-construction monitoring for Features BMC-235, BMC-242, BMC-249, BMC-267, BMC-282, BMC-352, and BMC-358 (if deemed to be significant) according to protocol described for pre-construction survey (as described in July 2011 version of *Bats and Bat Habitats: Guidelines for Wind Power Projects*) including: ▪ Conduct monitoring of roost trees during exit surveys throughout June. ▪ Conduct active visual and acoustic monitoring at the cavity opening or crevice from 30 minutes before dusk until 60 minutes after dusk in June. • The findings of all monitoring programs will be reported to MNR on an annual basis for the first 3 years of operation. • **Contingency Measures:** ▪ Institute changes to turbine operation if disturbance effects are detected through post-construction monitoring. ▪ Consultation with MNR to determine additional contingency measures if necessary.

Table 6-2 Mitigation Measures, Residual Effects and Monitoring Plan: Natural Heritage Resources

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
Bats may be disturbed or avoid woodlands where tree removal will occur for the transmission line.	• Continued use of habitat.	• Post-construction monitoring to ensure continued use of habitat.	• Significance of residual effects will be determined based on the results of post-construction monitoring.	• Conduct 3 years of post-construction monitoring of all remaining cavity trees for Features BMC-648 and BMC-720 (if deemed to be significant) according to protocol described for pre-construction survey (as described in July 2011 version of *Bats and Bat Habitats: Guidelines for Wind Power Projects*) including: ▪ Conduct monitoring of roost trees through exit surveys through June. ▪ Conduct active visual and acoustic monitoring at the cavity opening or crevice from 30 minutes before dusk until 60 minutes after dusk in June. • The findings of all post-construction monitoring programs will be reported back to MNR on an annual basis for the first 3 years of operation. • **Contingency Measures:** ▪ If a permanent and significant disturbance has been noted within these Features, the MNR will be contacted to determine whether additional mitigation measures will be needed.
Risk of road mortality to turtles moving between wintering ponds and other areas.	• Minimize turtle mortality along access roads.	• Maintain wildlife crossing signs and limit speed of vehicles (30 km/hr) near turtle wintering areas.	• Risk of turtle road mortality reduced through mitigation measures. • Low likelihood of occurring and limited magnitude due to limited volume of maintenance vehicles.	• No monitoring or contingency measures required.
Possible mortality to snakes from vehicles using access roads.	• Minimize snake mortality along access road.	• Advise operations staff to take extra care while driving access roads near features RH-01, RH-02, RH-03 and RH-05, particularly during timing windows when snakes emerge (April 15 - May 31) and return (September 1 – October 15) to hibernacula. • Maintain wildlife crossing signs and limit speed of vehicles near crossings (30 km/hr). • Erect long term drift fence between edge of habitat (RH-02, RH-03, RH-04 and RH-05) and road if hibernaculum determined to be large (>25 snakes).	• Risk of snake mortality minimized through the application of mitigation measures. • Low likelihood of occurring and limited magnitude (*i.e.*, no or limited mortality expected) due to limited volume of maintenance vehicles.	• Conduct reptile hibernacula surveys at reptile hibernacula within 120 m of access roads (RH-01, RH-02, RH-03 and RH-05; if determined to be significant) by a qualified Biologist annually for 3 years post-construction to assess any potential changes in snake populations or species composition using protocol described for pre-construction survey, including: ▪ Examination of rock piles and vicinity on three occasions between mid-April and mid-May. ▪ Identify species and count individuals. • Report the findings of the reptile hibernacula monitoring program to MNR on an annual basis for the first 3 years of operation. • **Contingency Measures:** ▪ If significant declines or disappearance of species is detected, determine whether likely to have been caused by the Project. If so, corrective measures will be taken, to be determined through consultation with MNR.

Table 6-2 Mitigation Measures, Residual Effects and Monitoring Plan: Natural Heritage Resources

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
Colonially-nesting birds may be disturbed by noise from operation of turbines.	• Minimize disturbance to colonially-nesting birds (Great Blue Herons).	• Post-construction monitoring to ensure continued use of the habitat.	• Significance of residual effects will be determined based on the results of post-construction monitoring.	• Include Turbines 55 and 56 in post-construction mortality monitoring program. • Conduct a pre-construction survey in the spring during leaf-off to gather more information about the heronry (e.g. number and location of additional nests), following the protocol described below. • Conduct 3 years of post-construction colonially-nesting bird monitoring at feature CNB-01 by a qualified Biologist, including: ▪ Conduct surveys on two occasions per year, in April and June. ▪ At least one vantage point/listening station will be placed along the fence line north of Turbine 56 and be monitored for approximately 15 minutes. ▪ All observed (including heard) colonially-nesting birds will be recorded along with their approximate location, age and behaviour, if possible. • Report the findings of the colonially-nesting bird monitoring program to MNR on an annual basis for the first 3 years of operation. • **Contingency Measures:** ▪ If significant declines or disappearance of species is detected, determine whether this is likely to have been caused by the Project. Monitoring results will be discussed with MNR prior to implementing mitigation measures, which will be developed through consultation with MNR.
Risk of road mortality to amphibians moving between breeding pools and home range.	• Minimize amphibian mortality along access roads.	• Advise operations staff to avoid driving roads in proximity to these features at night between April 1 and June 30, and any rainy nights from spring to early autumn, wherever possible. • Most access road traffic will be confined to daytime hours. Avoid access road use at night. • Maintain wildlife crossing signs and limit speed of vehicles near crossings (30 km/hr).	• Risk of amphibian mortality reduced through mitigation measures. • Low likelihood of mortality due to infrequent use of access roads by maintenance vehicles.	• Conduct 3 years post-construction amphibian call surveys (frogs and toads) and egg mass or adult surveys (salamanders) to assess any potential changes in amphibian breeding populations or species distribution (if Features deemed to be significant) at features AWO-02, AWO-25, AWO-27 and AWO-30 by a qualified Biologist, including: ▪ Call surveys at each Feature three times between April 1st and June 30th, as per the *Marsh Monitoring Protocol*. Conduct surveys between one half-hour after sunset and 2:00 am and, to the extent possible, on nights that are clear, cloudy, damp, foggy, or have light rain and minimum night air temperatures of 5°C (41°F), 10°C (50°F) and 14°C (57°F) for each of the three respective survey periods. Complete a 3-minute listening survey at each station.

Table 6-2 Mitigation Measures, Residual Effects and Monitoring Plan: Natural Heritage Resources

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
				▪ Conduct surveys to target non-vocalizing amphibians (i.e., salamanders) using one of the following three protocols: ○ Nocturnal survey for adult salamanders in late March to early April; ○ Surveys for salamander egg masses on two occasions in March and April; ○ Surveys for larval salamanders in May or June. • The findings of post-construction monitoring will be reported back to MNR on an annual basis for the first 3 years of operation. • **Contingency Measures** ▪ If significant declines or disappearance of species is detected, determine whether likely to have been caused by the project. If so, corrective measures will be taken, to be determined through consultation with MNR.
Breeding amphibians may be disturbed by routine maintenance of the transmission line corridor.	• Minimize disturbance due to maintenance activities.	• Advise operations staff to avoid maintenance activities in proximity to these features between April 1 and June 30 (for significant frog breeding habitats), or between March 15 and April 30 (for significant salamander breeding habitats) and any rainy nights from spring to early autumn. • Conduct area searches for amphibians prior to beginning maintenance activities if required to take place within the above timing windows.	• Risk of disturbance reduced through mitigation measures including maintenance timing. • Low likelihood of occurring and limited magnitude of residual effects.	• Conduct 3 years post-construction amphibian call surveys (frogs and toads) and egg mass or adult surveys (salamanders) to assess any potential changes in amphibian breeding populations or species distribution (if Features deemed to be significant), including: ▪ Call surveys at each Feature three times between April 1st and June 30th, as per the *Marsh Monitoring Protocol*. Conduct surveys between one half-hour after sunset and 2:00 am and, to the extent possible, on nights that are clear, cloudy, damp, foggy, or have light rain and minimum night air temperatures of 5°C (41°F), 10°C (50°F) and 14°C (57°F) for each of the three respective survey periods. Complete a 3-minute listening survey at each station. ▪ Conduct surveys to target non-vocalizing amphibians (i.e., salamanders) using one of the following three protocols: ○ Nocturnal survey for adult salamanders in late March to early April; ○ Surveys for salamander egg masses on two occasions in March and April; ○ Surveys for larval salamanders in May or June. • The findings of post-construction monitoring will be reported back to MNR on an annual basis for the first 3 years of operation.

Table 6-2 Mitigation Measures, Residual Effects and Monitoring Plan: Natural Heritage Resources

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
				• **Contingency Measures** ▪ If significant declines or disappearance of species is detected, determine whether likely to have been caused by the project. If so, corrective measures will be taken, to be determined through consultation with MNR. Habitat compensation or restoration measures will be described in a Compensation Plan, to be submitted to MNR.
Risk of mortality to amphibians moving between breeding pools and home range resulting from maintenance of the transmission line corridor.	• No amphibian mortality due to maintenance activities.	• Advise operations staff to avoid, where possible, maintenance activities in proximity to these features between April 1st and June 30th (for significant frog breeding habitats) or between March 15th and April 30th (for significant salamander breeding habitat), and any rainy nights from spring to early autumn. • Maintain wildlife crossing signs and limit speed of vehicles near crossings (30 km/hr).	• Risk of amphibian mortality reduced through maintenance timing. • Low likelihood of occurring and limited magnitude of residual effects.	• No monitoring or contingency measures required.
Removal of vegetation within Amphibian Woodland Breeding Habitats resulting from clearing for the transmission line.	• Minimize disturbance to amphibian breeding habitat. • No destruction of breeding pond.	• Schedule vegetation clearing within woodland to outside April 1 and June 30. • Implement contingency mitigation measures (as per consultation with MNR) if disturbance effects are detected through post-construction monitoring.	• Some permanent vegetation removal within woodlands containing amphibian breeding habitat will occur. Breeding pond should remain undisturbed. • Significance of residual effects will be determined based on the results of post-construction monitoring.	• Conduct 3 years post-construction amphibian call surveys (frogs and toads) and egg mass or adult surveys (salamanders) to assess any potential changes in amphibian breeding populations or species distribution (if Features deemed to be significant), including: ▪ Call surveys at each Feature three times between April 1st and June 30th, as per the *Marsh Monitoring Protocol*. Conduct surveys between one half-hour after sunset and 2:00 am and, to the extent possible, on nights that are clear, cloudy, damp, foggy, or have light rain and minimum night air temperatures of 5°C (41°F), 10°C (50°F) and 14°C (57°F) for each of the three respective survey periods. Complete a 3-minute listening survey at each station. ▪ Conduct surveys to target non-vocalizing amphibians (i.e., salamanders) using one of the following three protocols: ○ Nocturnal survey for adult salamanders in late March to early April; ○ Surveys for salamander egg masses on two occasions in March and April; ○ Surveys for larval salamanders in May or June. • The findings of post-construction monitoring will be reported back to MNR on an annual basis for the first 3 years of operation.

Table 6-2 Mitigation Measures, Residual Effects and Monitoring Plan: Natural Heritage Resources

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
				• **Contingency Measures** ▪ If significant declines or disappearance of species is detected, determine whether likely to have been caused by the project. If so, corrective measures will be taken, to be determined through consultation with MNR. Habitat compensation or restoration measures will be described in a Compensation Plan, to be submitted to MNR.
Risk of disturbance to and/or mortality of amphibians from herbicide spraying along transmission line.	• Minimize disturbance and/or mortality from herbicide spraying.	• Minimize aerial extent of herbicide spraying along transmission line. • Only apply herbicides when wind speeds are low and no significant precipitation is expected. • Maintain 10 m buffer to pond where no herbicides area applied. • Apply only herbicides approved for use adjacent to water bodies within riparian buffer areas. • A dye solution will be used in herbicide mix to visually detect uniform coverage of spray area. • Conduct area searches for amphibians prior to herbicide application.	• Risk of amphibian mortality or disturbance reduced through mitigation measures. • Low likelihood and limited magnitude of residual effects as a result.	• No monitoring or contingency measures required.
Red-Headed Woodpecker Breeding Habitat may be disturbed by routine maintenance of the transmission line corridor.	• No displacement of breeding Red-Headed Woodpeckers from habitat. • No destruction of nesting habitat.	• Perform maintenance operations such as vegetation clearing outside the breeding season of May 1st to July 31st. • Implement contingency mitigation measures (as per consultation with MNR) if disturbance effects are detected through post-construction monitoring.	• If routine maintenance operations such as vegetation trimming and clearing are conducted outside the breeding season of May 1st to July 31st there should be minimal residual effects from maintenance of the transmission line. • Nesting in utility poles has been recorded for Red-Headed Woodpecker, thus there is a possibility that the poles could provide future nesting habitat.	• Supervision of vegetation removal by a qualified Biologist to ensure no destruction of nesting habitat. • No additional monitoring or contingency measures required if timing window is applied.
Absence of vegetation within Red-Headed Woodpecker Breeding Habitat resulting from clearing for the transmission line.	• No displacement of breeding Red-headed Woodpeckers from habitat. • No destruction of nesting habitat.	• Implement contingency mitigation measures (as per consultation with MNR) if disturbance effects are detected through post-construction monitoring. • Consideration of Red-headed Woodpecker habitat requirements in development of Compensation Plan for tree removal in significant woodland.	• Some permanent vegetation removal within the woodland containing the Red-Headed Woodpecker nesting site will occur. • Significance of residual effects will be determined based on the results of post-construction monitoring.	• Conduct 3 years of post-construction monitoring for Feature SCB-03, according to protocol described for pre-construction surveys following the *Forest Bird Monitoring Protocol* including: ▪ Point counts within the woodlot on three separate visits during the period of May 15 – July 10. ▪ Conduct monitoring and evaluation of Red-Headed Woodpecker nest site to measure the use of the nesting location, and the success of breeding efforts. ▪ Examine utility poles for signs of nesting by Red-Headed Woodpecker.

Table 6-2 Mitigation Measures, Residual Effects and Monitoring Plan: Natural Heritage Resources

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
				• The findings of post-construction monitoring will be reported back to MNR on an annual basis for the first 3 years of operation. • **Contingency Measures** ▪ If significant declines or disappearance of species is detected, determine whether likely to have been caused by the project. If so, corrective measures will be taken, to be determined through consultation with MNR. Habitat compensation or restoration measures will be described in a Compensation Plan, to be submitted to MNR.
Risk of road mortality to deer moving through corridor.	• Minimize road mortality to deer.	• Advise operations staff to avoid driving roads in proximity to this feature at night between November 15 and December 15, and between April 1 and April 30 where possible. • Encourage slow vehicle speeds. Post and maintain speed limit signs (30 km/hr) and wildlife crossing signs on access roads.	• Risk of deer mortality reduced through mitigation measures. • Low likelihood of occurring and limited magnitude due to limited volume of maintenance vehicles.	• No monitoring or contingency measures required.

6.3 Surface Water and Groundwater

Potential effects to surface water and groundwater resulting from locating a Project component within the prescribed setbacks to water bodies are evaluated in the Water Assessment and Water Body Report (AECOM, 2013) and described below.

6.3.1 Surface Water

Following the Records Review and Site Investigation, 83 water bodies were identified. The Project Location was found to be within the prescribed setback distance for all identified water bodies. To aid in the assessment of water bodies and to focus mitigation measures, information was collected during site investigations that incorporated water quality, flow, aquatic habitat and riparian features in order to provide some understanding on the system's resiliency. Based on a sensitivity ranking conducted by AECOM, 1 water body was classified as high sensitivity (*i.e.*, not very resilient to environmental change); 45 water bodies were moderate; and 37 water bodies were low. This assessment concluded that the majority of the watercourses are fairly resilient to environmental perturbations. In general, water quality throughout the Study Area was heavily influenced by agriculture, as evidenced by tile drain runoffs, high suspended solids and turbidity of the water, as well as algae growth in some of the channels.

In compliance with *O. Reg. 359/09*, a Water Assessment and Water Body Report (AECOM, 2013) was prepared to assess negative environmental effects, identify mitigation measures and describe monitoring commitments to address any effects. For a detailed account of this assessment, please refer to the Water Assessment and Water Body Report (AECOM, 2013).

6.3.1.1 Potential Effects

Potential effects from operational and maintenance activities include:

- Soil / water contamination by oils, gasoline, grease and other materials (e.g., turbine lubricant and maintenance activities, use of access roads) at the turbines, transmission line, road crossings, substation and breaker switch station and laydown areas, and meteorological towers;
- Increase in impervious surfaces from the presence of turbine foundation and access roads, resulting in increased water temperatures, increased surface runoff and stream peak flows, and reduced infiltration, base flows and upwelling; and
- Obstruction of lateral flows in watercourses and other waterbodies due to the design of culverts and debris build-up at water crossings.

6.3.2 Groundwater and Geology

A desktop study was conducted to identify potential effects to the groundwater from the proposed turbine and transmission line layouts. Materials used included MOE Water Well Records, geological descriptions from the Ontario Geological Survey (OGS), air photos and GIS, as well as the turbine and transmission line layouts and construction details for the Project Study Area. The predominant overburden material throughout the Project Study Area is the St. Joseph Till, which is characterized by glaciolacustrine-derived silty to clayey till (OGS, 2003). The St. Joseph Till has a high clay content which likely restricts infiltration and groundwater movement. Therefore shallow groundwater transport is likely either through the weathered overburden flowing west toward Lake Huron or is vertical along fractures until it reaches a flow path at depth.

The surface topography is influenced by the Wyoming Moraine, producing the typical hummocky/rolling topography of this area. Groundwater recharge areas within the Project Study Area are restricted to the small patches of highly permeable beach ridge and glacial outwash deposits found running north-south in the centre of the Project Study Area (OGS, 2003). The largest north-south sand and gravel (glacial outwash) deposit has been designated as both a Significant Groundwater Recharge Area (SGRA) and a Highly Vulnerable Aquifer (HVA) by the Government of Ontario. The northwest corner of the Project Study Area has been identified as part of the Intake Protection Zone for the Lake Huron Primary Water Supply System.

6.3.2.1 Potential Effects

Potential effects from operational and maintenance activities include:

- Increase in impervious surfaces from the presence of turbine foundations overlaying high permeability surficial materials (such as: sands, gravels and silty sands) and access roads, resulting in reduced infiltration to groundwater; and
- Groundwater contamination by oil, gasoline, grease or other material from construction activities.

The mitigation measures, residual effects, and the monitoring plan associated with these effects to surface water and groundwater are described in **Table 6-3** below.

Table 6-3 Mitigation Measures, Residual Effects and Monitoring Plan: Surface Water and Groundwater

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
Increase in impervious surfaces from presence of turbine foundation and access roads, resulting in increased water temperatures, increased surface runoff and stream peak flows, and reduced infiltration, base flows and upwelling.	• No changes to surface water quality or quantity.	• Adhere to all setback requirements from watercourses. • Control quantity and quality of stormwater discharge using best management practices, and implement infiltration techniques to the extent possible (e.g., use of a permeable surface for access roads).	• Increase in impervious surfaces and subsequent changes to surface water quality or quantity minimized due to setback requirements and through application of mitigation measures. • Low likelihood and limited magnitude of effect due to small increase in impervious surfaces within entire Project Study Area.	• No monitoring or contingency measures required.
Soil / water contamination by oils, gasoline, grease and other materials (e.g., turbine lubricant and maintenance activities, use of access roads).	• No off-site contamination of soil and no contamination of groundwater or surface water.	• Control soil / water contamination through best management practices. • Ensure machinery arrives on site in a clean, washed condition and is to be maintained free of fluid leaks. • Develop a spill response plan and train staff on associated procedures and maintain emergency spill kits on site. • Site maintenance, vehicle washing and refuelling stations where contaminants are handled at least 30 m away from natural features including water bodies and significant woodlands, wetlands, and wildlife habitat. • Implement vehicle and equipment cleaning procedures and practices to minimize or eliminate the discharge of pollutants from vehicle/ equipment cleaning operations to watercourses or natural areas. • Store any stockpiled materials away from natural features to prevent deleterious substances from inadvertently discharging to the environment. • Dispose of any waste material from maintenance activities by authorized and approved off-site vendors.	• Soil / water contamination will be minimized through application of mitigation measures. • Low likelihood and limited magnitude of effects on surface water and groundwater as a result.	• Conduct regular site inspections and monitoring of turbines by a designated on-site Environmental Monitor(s). • **Contingency Measures** ▪ Notify MOE's Spills Action Centre of any spills. ▪ Assess and remediate affected soils and water. ▪ In the event that a spill occurs, the details of the spill will be reported back to MOE, including a description of any assessment and remediation undertaken.

6.4 Emissions to Air

Emissions to air are more likely to be effects experienced during construction activities rather than during the operation of the Project. Wind turbines do not generate any emissions and instead such environmental effects are likely to be limited to emissions from maintenance vehicles.

6.4.1 Potential Effects

Potential effects from operational and maintenance activities include:

- Emissions of contaminants from maintenance vehicles and portable generator sets, including but not limited to, nitrogen dioxide, sulphur dioxide, suspended particulates, emission of greenhouses gases (carbon dioxide, methane); and
- Dust as a result of vehicle traffic over gravel roads and/or cleared areas.

No odour emissions are anticipated.

The mitigation measures, residual effects, and the monitoring plan associated with air emissions are described in **Table 6-4** below.

Table 6-4 Mitigation Measures, Residual Effects and Monitoring Plan: Emissions to Air

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
Emissions of contaminants from maintenance vehicles.	• Limit impact of maintenance vehicles on local air quality.	• Ensure all engines (vehicles and generators) meet emission requirements specified by the MOE and Ontario Ministry of Transportation (MTO).	• Emissions of contaminants from maintenance vehicles minimized through application of mitigation measures. • Low likelihood of occurring and limited magnitude due to limited volume of maintenance vehicles.	• Track all complaints and conduct follow-up monitoring (see Complaints Resolution Process in Emergency Response and Communications Plan). • No contingency measures required.
Dust as a result of vehicle traffic over gravel roads and/or cleared areas.	• Limit dust production from maintenance vehicles.	• Limit speed of maintenance vehicles to minimize dust generation.	• Dust from vehicular traffic minimized through application of mitigation measures. • Low likelihood of occurring and limited magnitude due to limited volume of maintenance vehicles.	• Track all complaints and conduct follow-up monitoring (see Complaints Resolution Process in Emergency Response and Communications Plan). • No contingency measures required.

6.5 Noise

Wind energy projects have the potential to generate environmental noise which under certain circumstances may represent an annoyance to some surrounding residents. A Noise Assessment Report (AECOM, 2013) was conducted to identify these effects; the study and its results are presented in **Appendix A** of this Report.

Noise modelling conducted for the Noise Assessment Report (AECOM, 2013) determined that the Project layout is in compliance with all of the requirements outlined in *O. Reg. 359/09*, and the *Noise Guidelines for Wind Farms* (MOE, 2008). These regulations set out a minimum 550 m setback from non-participating noise receptors (i.e., residents, hospitals, schools, daycares, places of worship, etc.). The MOE has based the regulatory approach to

noise on a 40dBA outdoor night time noise limit. This setback also applies to the future use of vacant land, where that land is zoned to allow for the construction of potential receptors (e.g., residential). Participating land owners (i.e., someone who has entered into an agreement to permit all or part of the facility on their land) are not considered noise receptors for the purposes of determining noise setbacks.

As part of the Noise Assessment Report (AECOM, 2013) the cumulative noise effects of the Project and existing wind turbines within 5 km were modelled. This assessment also considered any wind farms which have not yet been constructed but have a crystallized site plan. Following consultation with MOE and area municipalities, it was determined that one existing wind farm is located within 5 km of the Project; the Zurich Wind Farm operated by Magnum Wind Energy. This is a single 0.8 MW turbine located to the west of Zurich near Bronson Line and Zurich-Hensall Road (see **Figure 2-3**). Turbines within NextEra's Bluewater Wind Energy Centre are more than 5 km from the turbines included in this Project.

6.5.1 Potential Effects

Potential effects from operational and maintenance activities include:

- An increase in noise levels due to the aerodynamic noise generated from wind turbine blades, and mechanical noise associated with each turbine and from the transformer located at the substation. Specifically, the noise modelling results show that the noise levels for all non-participating receptors are below 40 dBA.

The mitigation measures, residual effects, and the monitoring plan associated with noise are described in **Table 6-5** below.

Table 6-5 Mitigation Measures, Residual Effects and Monitoring Plan: Noise

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
Increased noise levels experienced by receptors (residents located on non-leased properties) due to turbine operation.	• Limit noise levels to <40 dBA at non-participating receptors.	• Adhere to noise setbacks. • Repair equipment in a timely manner.	• Noise levels experienced by receptors (residents located on non-leased properties) due to turbine operation will be below 40 dBA.	• Track all complaints and conduct follow-up monitoring (see Complaints Resolution Process in Emergency Response and Communications Plan). • **Contingency Measures** ▪ Repair damaged turbine component. ▪ Operate turbines that are out of compliance in noise-reduced mode.
Increased noise levels experienced by receptors (residents located on non-leased properties) due to substation operation.	• Limit noise level to < 40 dBA at non-participating receptors.	• Repair equipment in a timely manner. • Install a 6 m high noise barrier around the transformer substation to comply with MOE noise limits.	• Noise levels experienced by receptors near the substation will be below 40 dBA due to application of mitigation measures. • High likelihood but limited magnitude of effects as a result.	• Track all complaints and conduct follow-up monitoring (see Complaints Resolution Process in Emergency Response and Communications Plan). • No contingency measures required.

6.6 Local Interests, Land Use and Infrastructure

Land uses within 300 m of the Project Study Area were identified through the REA planning process and in consultation with the local municipalities, Ontario Ministry of Transportation (MTO) and local landowners. The following section describes the results of the effects assessment for the operations phase of the Project.

6.6.1 Existing Land Uses and Infrastructure

Common agricultural land uses in northern Lambton County and southern Huron County are cash crops (e.g., soybeans, corn and wheat) and livestock farming. Other land uses include non-farm residential uses on separate lots created through severances for farm retirement lots, surplus farm dwelling lots and older estate lots, which are scattered throughout the Project Study Area in limited numbers.

The Morrison Dam Conservation Area is located just to the east of the Wind Energy Centre Study Area and is within the Transmission Line Study Area. Activities within the Conservation Area include canoeing, fishing, hiking and cross-country skiing, while the area also includes hardwood and pine forests for trail walking.

The Project will provide an increased municipal tax base for the Municipalities of Bluewater and South Huron, increased number of employment opportunities (especially during the construction stage) and the generation of clean, renewable electricity from wind power. The operation of the wind energy centre will also provide annual economic benefits through royalties to landowners and an initial and continuing need for supplies and services in the local and regional rural economies.

A Parcel Boundary Setback Reduction Analysis (IBI Group, 2012) has been prepared to identify locations where turbines are sited within 80 m of neighbouring property lines. This is provided in **Appendix C**.

6.6.1.1 Potential Effects

Potential effects from operational and maintenance activities include:

- A minor reduction in usable farmland as a single turbine, together with its access road, will take up on average only 1.0 to 1.5% of a typical 40 hectare farm parcel;
- Reduction in aesthetic quality of landscape which may affect the use and enjoyment of private property and recreational amenities; and
- Damage to crops or trees due to turbine malfunction or failure associated with 16 turbines that are located within 80 m of neighbouring property lines (refer to **Appendix C**).

6.6.2 Stray Voltage and Effects to Livestock

NextEra has designed the Project to minimize the risk of stray voltage to consumers and to ensure the Project is built and maintained within acceptable levels as prescribed by the Distribution System Code and the Electrical Safety Authority.

Most cases of stray voltage occur when there is either:

- Improper grounding of on-site equipment (in which case it is an issue with on-site wiring); or
- A change in current patterns on the distribution line, from generation or load, which exposes a pre-existing condition (in which case it is an issue with the distribution utility, not with the generator or load).

The turbines are therefore not the root of the problem, but like any change to the system, may expose faults in that system. All types of generation (wind generation using wind turbines included) must fully comply with utility requirements to ensure that the electricity they supply is compliant with grid standards.

6.6.2.1 Potential Effects

Potential effects from operational and maintenance activities include:

- Mild electric shocks to livestock, which may cause behavioural changes, and changes in production performance.

At a voltage difference above about 10 volts, people may detect a tingle. This is not a health hazard to humans.

The mitigation measures, residual effects, and the monitoring plan associated with potential land use impacts are described in **Table 6-6** below.

Table 6-6 Mitigation Measures, Residual Effects and Monitoring Plan Local Interests, Land Use and Infrastructure

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
Minor reduction in usable agricultural land.	• Minimize reduction of farmland.	• Minimize length of access roads where possible. • Consult with landowners to design access roads to minimize impacts to agricultural practices. • Compensate landowners on Project Location as per land lease agreement.	• Minor reduction in usable agricultural land. • High likelihood of effect, however limited magnitude due to size of overall footprint within the entire Project Study Area.	• No monitoring or contingency measures required.
Reduction in aesthetic quality of landscape which may affect the use and enjoyment of private property and recreational amenities.	• Limit aesthetic impact of turbines where possible.	• Adhere to setback requirements.	• Reduction in aesthetic quality of landscape which may affect the use and enjoyment of private property and recreational amenities. • Likelihood and magnitude dependent on perception of residents and visitors to presence of turbines.	• No monitoring or contingency measures required.
Stray voltage effects to livestock.	• Minimize effects of stray voltage on livestock.	• Build and maintain the Project as prescribed by the Distribution System Code and the Electrical Safety Authority to minimize the risk of stray voltage. • Point of interconnection is part of the transmission system, not the distribution system thus reducing potential to impact any customers.	• Stray voltage effects to livestock. • Low likelihood and limited magnitude expected based on existing wind farm operations.	• Track all complaints and conduct follow-up monitoring (see Complaints Resolution Process in Emergency Response and Communications Plan. • No contingency measures required.
Damage to crops or trees due to turbine malfunction or failure associated with 16 turbines located within 80 m of neighbouring property lines	• Minimize damage to crops or trees due to turbine malfunction or failure.	• Ensure ongoing regular maintenance and monitoring of turbines. • Implement shutdown mechanisms and protocols in extreme weather instances to prevent damage to wind turbines.	• Damage to crops or trees minimized through mitigation measures. • No likelihood of effect as a result of mitigation strategy.	• No monitoring or contingency measures required.

6.7 Other Resources

A search for landfills, aggregate resources, forest resources and petroleum resources was undertaken based upon data from the Huron County online GIS database (Huron County, 2011) and from the MNR's Oil, Gas & Salt Resources (OGSR) library (Ontario Oil, Gas & Salt Resource Library, 2011).

6.7.1 Landfills

There are five closed landfills within the Project Study Area, all of which are municipally-owned. The Stephen landfill (South Huron) is located within the Wind Energy Centre Study Area approximately 650 m south of the collection line between Turbines 42 and 78. Due to the distance between the landfill and Project infrastructure, operations are not anticipated to have an effect upon the closed landfill. The Usborne landfill (South Huron) is located within the Transmission Line Study Area, directly south of the breaker switch station and across the other side of Dump Road. Operations are not anticipated to have an effect upon the closed landfill because there is sufficient separation between the landfill and the Project infrastructure due to the presence of the road.

There is also an unidentified closed landfill located adjacent to the southern boundary of the Transmission Line Study Area to the west of Ausable Line (1.2 km from the closest Project infrastructure) and two closed landfills located on Centre Street, south of Dashwood Road (1.3 km from the closest Project infrastructure) and on Ausable Line south of Kirkton Road (395 m from the closest Project infrastructure). These closed landfills are not located within close proximity to any Project infrastructure. As a result, no operations-related effects on the closed landfills are anticipated.

There is one open landfill located within the Wind Energy Centre Study Area, the municipally-owned Hay landfill (Bluewater), which is approximately 70 m from the closest Project infrastructure (collection line between Turbines 4 and 5). This landfill is small, and although relatively close to Project infrastructure, appears to have sufficient buffer (greater than 30 m) within the property boundary. As a result, operations are not anticipated to have an effect on the open landfill. The municipally-owned Exeter landfill (South Huron), which is currently open, is located adjacent to the northern boundary of the Transmission Line Study Area near Ausable Line, outside of the Project Study Area and is not in close proximity to any Project infrastructure (2.8 km away). As such, no effects from operations are anticipated.

6.7.2 Aggregate Resources

Table 6-7 and **Figure 2-3** show that there are seven authorized aggregate resources located within the Project Study Area. None of these resources are located within close proximity to Project infrastructure.

Table 6-7 Aggregate Resources

Owner	Area (ha)	Licence Class	Status	Distance to Closest Project Infrastructure
McCann Construction Inc.	40.47	Class A > 20000 tonnes	Active	330 m
Prout Farms	90.60	Class A > 20000 tonnes	Active	1.2 km
Jennison Construction Ltd.	11.24	Class A > 20000 tonnes	Surrendered	2.2 km
Scott, Alan E.	47.50	Class A > 20000 tonnes	Surrendered	370 m
McCann Redi-Mix Inc.	8.78	Class A > 20000 tonnes	Active	7 km
The Municipality of South Huron	16.13	Class A > 20000 tonnes	Surrendered	1 km
Taylor, Jeffrey	23.76	Class A > 20000 tonnes	Active	1.2 km

There are also three pits or quarries located within the Project Study Area. One of the three is located approximately 50 m east of the collection line between Turbines 14 and 15. However, this pit/quarry is relatively small and operations related activities are not anticipated to have an effect on this resource. Another pit/quarry is located approximately 380 m east of the breaker switch station, adjacent to the eastern boundary of the Transmission Line Study Area. It is not anticipated to experience any effects from operations. The remaining pit/quarry of the three identified is located approximately 530 m north of the access road between Turbines 7 and 10, close to the northern boundary of the Wind Energy Centre Study Area. Again, operations are not anticipated to have an effect on this resource due to the distance from Project infrastructure.

6.7.3 Forest Resources

Based on the MNR's Sustainable Forest Licences (SFL) database (Ontario Ministry of Natural Resources, 2012), there are no SFLs within the Project Study Area.

6.7.4 Petroleum Resources

One petroleum resource was identified within 75 m of Project infrastructure based on the MNR's Oil, Gas and Salt Resources Library. Specifically, the access road and collection line between Turbines 54 and 84 is approximately 60 m from an active oil producing well.

Three other resources were identified based on ground-truthing of the Project Location. There is a storage tank and natural gas line 9 m from the collection line between Turbines 53 and 55, and a natural gas line 7 m from the collection line between Turbines 14 and 31.

6.7.5 Potential Effects

No effects on open or closed landfills, aggregate resources, forest resources or petroleum wells are anticipated as a result of the design and operations phase of the Project due to the distance between the Project and these resources. An Engineer's Report will be submitted to the MNR prior to construction to confirm that there are no effects on the four petroleum resource located within 75 m of Project infrastructure.

6.8 Public Health and Safety

To minimize or avoid effects on public health and safety, the turbines are sited according to setback distances outlined in *O.Reg. 359/09* and as described above. Effects relating to noise are described in Section 6.5.

6.8.1 Potential Effects

Potential effects from operational and maintenance activities include:

- Ice formation on turbine blades resulting in ice shed;
- Shadow flicker causing disturbance at nearby residences and businesses. Shadow flicker occurs when, at precise latitude, wind direction, and height of the sun, rotating wind turbine blades cast shadows upon stationary objects.

The mitigation measures, residual effects, and the monitoring plan associated with public health and safety are described in **Table 6-8** below.

Table 6-8 Mitigation Measures, Residual Effects and Monitoring Plan: Public Health and Safety

Potential Effect	Performance Objective	Mitigation Strategy	Residual Effects	Monitoring Plan and Contingency Measures
Impacts on public health and safety from ice shed and/or shadow flicker.	• No public health and safety incidents.	• Adhere to setback requirements to limit likelihood of any impacts.	• No impacts on public health and safety from ice shed and/or shadow flicker due to setback requirements. • Low likelihood and limited magnitude expected based on existing wind farm operations.	• Track all complaints and conduct follow-up monitoring (see Complaints Resolution Process in Emergency Response and Communications Plan). • **Contingency Measures** ▪ Suspend operations during icing conditions to minimize the risk of ice shed.

6.9 Areas Protected Under Provincial Plans and Policies

The REA regulation requires a determination as to whether the Project is being proposed in any of the following protected or plan areas:

- Protected Countryside or Natural Heritage Systems in the Greenbelt Plan;
- Oak Ridges Moraine Conservation Plan Areas;
- Niagara Escarpment Plan Area; or
- Lake Simcoe Watershed Plan Area.

The Goshen Wind Energy Centre is not proposed in any of these protected or plan areas. As such, there will be no effects on these areas as a result of the Project.

7. Summary and Conclusions

Significant adverse effects have been avoided through careful site selection, facility layout planning and strict adherence to all regulatory requirements. All turbines, access roads and ancillary facilities have been sited with landowner consultation to minimize the impact to current agricultural operations.

The overall conclusion of this Design and Operations Report is that this Project can be operated without any significant adverse residual effects. Post-construction monitoring related to effects on wildlife, including birds and bats, will be undertaken to confirm this conclusion.

8. References

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Goshen Wind Energy Centre Project Natural Heritage Assessment Report and Environmental Effects Monitoring Plan

AECOM, 2013:
Final Goshen Wind Energy Centre Project Description Report

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Final Goshen Wind Energy Centre Noise Assessment Report

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Appendix A

Noise Assessment Report

Environment

NextEra Energy Canada, ULC.

Goshen Wind Energy Centre – Noise Assessment Report

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Appendices

1. Introduction

NextEra Energy Canada, ULC (NextEra) is proposing to construct a wind energy centre project in the Municipalities of Bluewater and South Huron, Ontario. The project will be referred to as the Goshen Wind Energy Centre (the "Project").

This report has been prepared in accordance with the Ontario Ministry of the Environment (MOE) guideline "Noise Guidelines for Wind Farms – Interpretation for Applying MOE NPC Publications to Wind Power Generation Facilities" (October 2008). This report will form part of the Renewable Energy Approval (REA) application for the Project as required under Ontario Regulation 359/09.

2. Project Layout

Approval is being sought for seventy-two (72) wind turbine locations, seventy-one (71) of which are rated at 1.6 Megawatts maximum generation capacity and one (1) rated at 1.56 Megawatts maximum generation capacity. However, only approximately sixty-three (63) of the wind turbines will ultimately be constructed in order to achieve the Project nameplate generation target of up to 102 Megawatts. All of the wind turbines will feed into a centrally located transformer substation.

The proposed Project is located in Huron County, within the Municipalities of Bluewater and South Huron. The Project Study Area consists of the areas being studied for the wind farm components (Wind Energy Centre Study Area), as well as for the interconnection route (i.e., the area being studied for transmission lines to connect the Project to the electrical grid) (Transmission Line Study Area). The Wind Energy Centre Study Area is generally bounded by Klondyke Road to the west, Rogerville Road to the north, Parr Line to the east, and Mount Carmel Drive to the south, in the Municipalities of Bluewater and South Huron. The Transmission Line Study Area is located to the east of the Wind Energy Centre Study Area, and is generally bounded by Parr Line to the west, Thames Road to the north, Perth 164 Road to the east, and Park Road to the south, extending into the Municipality of South Huron.

The location of the Project Study Area was defined early in the planning process for the proposed wind energy facility, based on the availability of wind resources, approximate area required for the proposed project, and availability of existing infrastructure for connection to the electrical grid. The Project Study Area was used to facilitate information collection.

A figure showing the project location, wind turbine layout and transformer location is provided in Appendix A.

3. Noise Assessment Guideline

Part V.0.1 of the Ontario Environmental Protection Act R.S.O. 1990 (EPA) addresses the approvals process required for renewable energy projects and Ontario Regulation 359/09 outlines the specific requirements for obtaining a Renewable Energy Approval (REA) from the MOE.

As required by O.Reg. 359/09, noise from wind farm projects requiring approval within Ontario are assessed using the MOE guideline: "Noise Guidelines for Wind Farms – Interpretation for Applying MOE NPC Publications to Wind Power Generation Facilities" (PIBS 4709e, October 2008). This guideline sets the definitions, assessment procedures and noise level limits for noise assessments of wind farm projects.

The project area is best defined as Class 3 rural, as per MOE Publication 4709e. A Class 3 Area is defined as "a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as

the following: a small community with less than 1000 population; agricultural area; a rural recreational area such as a cottage or a resort area; or a wilderness area." The MOE noise level limits, at integer wind speeds, for points of reception are summarized in Table 1 below.

Table 1. Noise Level Limits for Wind Turbines

Point of Reception Classifications	1-hr L_{EQ} Sound Level Limit (dBA) at 10m height Wind Speeds (m/s)				
	Less than or equal to 6 m/s	7 m/s	8 m/s	9 m/s	Greater than or equal to 10 m/s
Class 1 & 2 Areas	45.0	45.0	45.0	49.0	51.0
Class 3 Areas	40.0	43.0	45.0	49.0	51.0

4. Noise Sources

There are two wind turbine models proposed for this project. These are the following:

- Seventy-one (71) General Electric model GE 1.6-100 turbines with Low-Noise Trailing Edges (LNTE).
  - Hub height of 80 metres
  - Rotor diameter of 100 metres
  - Maximum generation capacity of 1.6 Megawatts
- One (1) General Electric model GE 1.56-100 turbine.
  - Hub height of 80 metres
  - Rotor diameter of 100 metres
  - Maximum generation capacity of 1.56 Megawatts

Manufacturers' noise data for the wind turbine models are summarized in Table 3 of Section 9 and the original manufacturer's datasheets are provided in Appendix E. The noise datasheets provided have been prepared and reported in accordance with IEC 61400-11 (equivalent to CAN/CSA-C61400-11). The calculations used to adjust for site specific wind shear are also presented in Appendix E.

The electricity generated by each wind turbine will be collected at a central transformer substation. The performance specification of the transformer will require that the noise emissions be measured in accordance with ANSI/IEEE C57.12.90 at the highest (MVA) rating with all fans in operation and at the tap position that creates the highest current. The performance specification will require that the average sound pressure level measured in accordance with ANSI/IEEE C57.12.90 shall not exceed 80 dBA over the measurement surface (as defined in the ANSI/IEEE standard). An estimate of the noise emissions expected from the transformer is provided in Table 4. Appendix E includes a detailed calculation to support the transformer emission estimate. Note that a 5dB penalty has been added to the transformer emission level in the noise prediction modelling as per the requirements of PIBS 4709e.

The MOE requires that the cumulative noise impact of existing or proposed[1] wind farms also be included in the noise impact analysis. To that end all existing or proposed wind turbines within 5 kilometres of the Project were included in the noise impact analysis. There is one such facility which is named The Zurich Wind Farm. The Zurich Wind Farm consists of one (1) Enercon E-48 model turbine which has a rated generation capacity of 800 kilowatts. Manufacturer's noise data for the E-48 are summarized in Table 3 of Section 9 and the original manufacturer's datasheet is provided in Appendix E. The noise datasheets have been prepared and reported in accordance with

[1] *Based on MOE guidelines, proposed projects which have not yet published a site plan have not been accounted for in the noise impact analysis.*

IEC 61400-11 (equivalent to CAN/CSA-C61400-11). The calculations used to adjust for site specific wind shear are also presented in Appendix E.

Table 5 of Section 9 provides the coordinates of all noise sources considered in the noise impact analysis and assessment.

5. Points of Reception

The Noise Impact Summary Table, provided in Appendix A, lists all of the points of reception within 2000 metres of the Project turbines and the associated coordinates as per Section 6.1 d) of the MOE noise guideline (PIBS 4709e). The points of reception have been classified into four (4) different categories which are outlined in Table 2, below.

Table 2. Point of Reception Classifications

Class	Description	Remarks
NP	Non-participating	MOE Limits Apply
PR	Participating	MOE Limits Do Not Apply
VNP	Vacant Lot Non-participating	MOE Limits Apply
VPR	Vacant Lot Participating	MOE Limits Do Not Apply

The classifications NP and VNP are both non-participating and are subject to the noise level limits outlined in the MOE noise guideline (PIBS 4709e, see Table 1).

The classifications PR and VPR are both participating and are not subject to the noise level limits outlined in the MOE noise guideline. Participating points of reception are associated with the wind farm development via a legal agreement with the owner of the subject property, to allow the installation and operation of wind turbines or related equipment.

6. Detailed Noise Impact Assessment

The noise impact analysis for the Project was completed using the Cadna/A environmental noise modelling software. The noise modelling was conducted in accordance with the international standard ISO 9613-2. The noise predictions were calculated using downwind propagation from each source to each point of reception. This method produces a theoretical worst case prediction at each point of reception. The noise impact calculations were completed using octave band spectral values in the range of 63 to 8000Hz for each integer 10 metre height wind speed from 6 to 10m/s.

The noise model was configured to calculate the resultant noise impact at each point of reception within 1500 metres of the Project turbines as per Sections 6.3 and 6.4.1 of the MOE noise guideline (PIBS 4709e). The contribution of each noise source located within 5000 metres from each point of reception was included in the noise impact calculation according to Section 6.4.9 of PIBS 4709e. The air attenuation and ground attenuation calculation within the model were configured according to Section 6.4.10 of PIBS 4709e.

The noise impact at each point of reception, for each integer 10 metre height wind speed from 6 to 10m/s, is presented in The Noise Impact Table (Appendix A). All of the noise predictions were completed in accordance with the detailed requirements of the MOE noise guideline (PIBS 4709e).

7. Results and Compliance

The results of the noise modelling in The Noise Impact Table (Appendix A) show that the Project is predicted to operate in compliance with the MOE noise level limits at all points of reception within 1500 metres of the Project turbines. Appendix C includes noise contour maps for each integer 10 metre height wind speed from 6 to 10m/s and a sample calculation is provided in Appendix D.

The results presented in Appendix A, Appendix C and Appendix D include the effect of a six (6) metre high noise barrier on the east, south and west sides of the Project transformer substation. This noise mitigation measure is required in order to achieve compliance with the MOE noise limits in the vicinity of this source of noise. The noise barrier should have an absorptive surface on the side facing the transformer with a minimum Noise Reduction Coefficient (NRC) of 0.8. The noise barrier should have a minimum surface density of 20 kg/m^2 or a minimum Sound Transmission Class (STC) of STC32 and should not have any gaps or cracks. The noise barrier was assumed to be setback from the transformer by 1.5 metres on each of the north, east and south sides. The east, south and west sides of the barrier were modelled as 5, 10 and 5 metres in length, respectively.

Therefore, provided the noise mitigation described above is implemented, the Project is predicted to comply with the MOE sound level limits for Wind Turbines in Class 3 areas for all of the non-participating (NP) and vacant lot non-participating (VNP) points of reception assessed.

8. References

The following references were used in the preparation of this report:

PIBS 4709e, “Noise Guidelines for Wind Farms – Interpretation for Applying MOE NPC Publications to Wind Power Generation Facilities”, Ontario Ministry of the Environment, Queens Printer for Ontario, October 2008.

IEC 61400-11, “Wind turbine generator systems – Part 11: Acoustic noise measurement techniques”, International Electrotechnical Commission, 2006.

ANSI/IEEE C57.12.90, “Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers”, Institute of Electrical and Electronics Engineers, Inc.

9. Summary Tables

Table 3. Wind Turbine Acoustic Emission Summary Tables

Table 3A. General Electric Model 1.6-100 LNTE

Associated Project: Goshen Wind Energy Centre
Make: General Electric
Model: GE 1.6-100 LNTE
Electrical Rating: 1.6 Megawatts
Hub Height (m): 80 metres
Wind Shear Coefficient: 0.29
Source of Data: Provided by General Electric (Appendix E)

		Octave Band Sound Power Level (dBA)									
		Manufacturer's Emission Levels					Adjusted Emission Levels				
10m Height Wind Speed (m/s)		6	7	8	9	10	6	7	8	9	10
Frequency (Hz)	63	85.5	89.2	89.6	89.7	89.6	89.6	89.6	89.6	89.6	89.6
	125	90.8	93.9	94.4	94.4	94.3	94.4	94.3	94.3	94.3	94.3
	250	94.4	95.0	95.1	95.2	95.2	95.1	95.2	95.2	95.2	95.2
	500	95.0	96.3	96.1	96.1	96.5	96.1	96.5	96.5	96.5	96.5
	1000	91.3	96.4	96.9	97.0	97.2	96.9	97.2	97.2	97.2	97.2
	2000	91.9	95.0	95.2	94.9	94.3	95.2	94.3	94.3	94.3	94.3
	4000	88.4	89.0	88.6	87.9	87.2	88.6	87.2	87.2	87.2	87.2
	8000	69.8	69.7	70.0	68.8	68.7	70.0	68.7	68.7	68.7	68.7
Overall A-weighted		100.4	102.8	103.0	103.0	103.0	103.0	103.0	103.0	103.0	103.0

Table 3B. General Electric Model 1.56-100

Associated Project: Goshen Wind Energy Centre
Make: General Electric
Model: GE 1.56-100
Electrical Rating: 1.56 Megawatts
Hub Height (m): 80 metres
Wind Shear Coefficient: 0.29
Source of Data: Provided by General Electric (Appendix E)

		Octave Band Sound Power Level (dBA)									
		Manufacturer's Emission Levels					Adjusted Emission Levels				
10m Height Wind Speed (m/s)		6	7	8	9	10	6	7	8	9	10
Frequency (Hz)	63	86.2	90.5	91.2	91.2	91.2	91.2	91.2	91.2	91.2	91.2
	125	90.1	94.2	94.9	94.9	94.8	94.8	94.9	94.8	94.8	94.8
	250	91.9	93.9	94.2	94.2	94.2	94.2	94.2	94.2	94.2	94.2
	500	94.6	95.7	94.5	94.5	94.5	94.6	94.5	94.5	94.5	94.5
	1000	95.2	99.6	98.9	98.9	98.8	99.1	98.9	98.8	98.8	98.8
	2000	91.3	97.2	98.1	98.1	98.2	98.0	98.1	98.2	98.2	98.2
	4000	84.6	88.4	89.2	89.2	89.5	88.8	89.2	89.5	89.5	89.5
	8000	68.0	71.1	70.7	70.7	70.5	71.2	70.7	70.5	70.5	70.5
Overall A-weighted		100.3	104.0	104.0	104.0	104.0	104.0	104.0	104.0	104.0	104.0

Table 3C. ENERCON Model E-48

Associated Project: Zurich Wind Project
Make: ENERCON
Model: E-48
Electrical Rating: 800 Kilowatts
Hub Height (m): 76 metres
Wind Shear Coefficient: 0.29
Source of Data: Provided by ENERCON (Appendix E)

		Octave Band Sound Power Level (dBA)									
		Manufacturer's Emission Levels					Adjusted Emission Levels				
10 metre Height Wind Speed (m/s)		6	7	8	9	10	6	7	8	9	10
Frequency (Hz)	63	79.5	81.6	79.6	79.8	78.6	79.6	78.6	78.6	78.6	78.6
	125	83.6	86.3	86.0	87.3	84.4	86.0	84.4	84.4	84.4	84.4
	250	90.5	93.8	95.1	96.1	93.3	95.1	93.3	93.3	93.3	93.3
	500	92.8	95.7	97.1	97.5	96.8	97.1	96.8	96.8	96.8	96.8
	1000	92.6	94.1	95.5	95.1	97.9	95.5	97.9	97.9	97.9	97.9
	2000	87.4	89.0	89.1	90.0	92.7	89.1	92.7	92.7	92.7	92.7
	4000	83.6	86.1	85.8	88.8	87.6	85.8	87.6	87.6	87.6	87.6
	8000	80.2	83.6	83.6	87.1	84.6	83.6	84.6	84.6	84.6	84.6
Overall A-weighted		97.8	100.3	101.4	102.0	102.1	101.4	102.0	102.1	102.1	102.1

Table 4. Transformer Acoustic Emission Summary

Octave Band Centre Frequency (Hz)	31.5	63	125	250	500	1000	2000	4000	8000	Overall
Transformer Sound Power (dBA)	60.7	80.7	92.7	94.7	100.7	97.7	93.7	88.7	79.7	104.1
Tonal Penalty (dB)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Resultant Transformer Sound Power (dBA)	**65.7**	**85.7**	**97.7**	**99.7**	**105.7**	**102.7**	**98.7**	**93.7**	**84.7**	**109.1**

Table 5. Project Wind Turbine and Transformer Locations

Identifier	Project	Equipment Make & Model	UTM Coordinates (NAD83 Zone 17N)		Remarks
			Easting	Northing	
G_Trans	Goshen	-	454556	4794883	Transformer
G_WTG02	Goshen	GE 1.6 – 100 LNTE	450520	4805782	-
G_WTG03	Goshen	GE 1.6 – 100 LNTE	451051	4805361	-
G_WTG04	Goshen	GE 1.6 – 100 LNTE	450524	4804972	-
G_WTG05	Goshen	GE 1.6 – 100 LNTE	451300	4804616	-
G_WTG06	Goshen	GE 1.6 – 100 LNTE	451203	4803770	-
G_WTG07	Goshen	GE 1.6 – 100 LNTE	446869	4804385	-
G_WTG08	Goshen	GE 1.6 – 100 LNTE	447071	4803417	-
G_WTG09	Goshen	GE 1.6 – 100 LNTE	446830	4802090	-
G_WTG10	Goshen	GE 1.6 – 100 LNTE	448722	4804602	-
G_WTG11	Goshen	GE 1.6 – 100 LNTE	448568	4803670	-
G_WTG12	Goshen	GE 1.6 – 100 LNTE	449241	4803328	-
G_WTG13	Goshen	GE 1.6 – 100 LNTE	448911	4802237	-
G_WTG14	Goshen	GE 1.6 – 100 LNTE	448875	4801624	-
G_WTG15	Goshen	GE 1.6 – 100 LNTE	449226	4800450	-
G_WTG16	Goshen	GE 1.6 – 100 LNTE	444383	4793947	-
G_WTG17	Goshen	GE 1.6 – 100 LNTE	443972	4792675	-
G_WTG19	Goshen	GE 1.6 – 100 LNTE	445549	4795811	-
G_WTG20	Goshen	GE 1.6 – 100 LNTE	445679	4795219	-
G_WTG21	Goshen	GE 1.6 – 100 LNTE	445847	4794126	-
G_WTG22	Goshen	GE 1.6 – 100 LNTE	447530	4795721	-
G_WTG23	Goshen	GE 1.6 – 100 LNTE	447843	4796331	-
G_WTG31	Goshen	GE 1.6 – 100 LNTE	452335	4797930	-
G_WTG32	Goshen	GE 1.6 – 100 LNTE	452553	4796971	-
G_WTG33	Goshen	GE 1.6 – 100 LNTE	452366	4796399	-
G_WTG34	Goshen	GE 1.6 – 100 LNTE	453108	4799573	-
G_WTG35	Goshen	GE 1.6 – 100 LNTE	454089	4796605	-
G_WTG36	Goshen	GE 1.6 – 100 LNTE	446196	4792203	-
G_WTG37	Goshen	GE 1.6 – 100 LNTE	446287	4791638	-
G_WTG38	Goshen	GE 1.6 – 100 LNTE	446167	4791042	-
G_WTG39	Goshen	GE 1.6 – 100 LNTE	447984	4793710	-
G_WTG41	Goshen	GE 1.6 – 100 LNTE	448895	4791606	-
G_WTG42	Goshen	GE 1.6 – 100 LNTE	448990	4790737	-
G_WTG46	Goshen	GE 1.6 – 100 LNTE	452699	4790500	-
G_WTG47	Goshen	GE 1.6 – 100 LNTE	452425	4792588	-
G_WTG48	Goshen	GE 1.6 – 100 LNTE	452825	4793244	-
G_WTG49	Goshen	GE 1.6 – 100 LNTE	454586	4792838	-
G_WTG50	Goshen	GE 1.6 – 100 LNTE	455040	4793271	-
G_WTG52	Goshen	GE 1.56 – 100	440156	4788373	-
G_WTG53	Goshen	GE 1.6 – 100 LNTE	442135	4790871	-
G_WTG54	Goshen	GE 1.6 – 100 LNTE	439792	4790436	-
G_WTG55	Goshen	GE 1.6 – 100 LNTE	440005	4789811	-
G_WTG56	Goshen	GE 1.6 – 100 LNTE	439925	4788922	-

Identifier	Project	Equipment Make & Model	UTM Coordinates (NAD83 Zone 17N)		Remarks
			Easting	Northing	
G_WTG57	Goshen	GE 1.6 – 100 LNTE	438121	4790232	-
G_WTG58	Goshen	GE 1.6 – 100 LNTE	437973	4789428	-
G_WTG59	Goshen	GE 1.6 – 100 LNTE	438098	4788616	-
G_WTG60	Goshen	GE 1.6 – 100 LNTE	437501	4789050	-
G_WTG61	Goshen	GE 1.6 – 100 LNTE	437294	4788459	-
G_WTG62	Goshen	GE 1.6 – 100 LNTE	437743	4788017	-
G_WTG63	Goshen	GE 1.6 – 100 LNTE	438227	4787615	-
G_WTG64	Goshen	GE 1.6 – 100 LNTE	446988	4791822	-
G_WTG65	Goshen	GE 1.6 – 100 LNTE	454014	4798992	-
G_WTG66	Goshen	GE 1.6 – 100 LNTE	446376	4794650	-
G_WTG67	Goshen	GE 1.6 – 100 LNTE	453955	4799707	-
G_WTG68	Goshen	GE 1.6 – 100 LNTE	450577	4790696	-
G_WTG69	Goshen	GE 1.6 – 100 LNTE	450788	4791504	-
G_WTG70	Goshen	GE 1.6 – 100 LNTE	450838	4792170	-
G_WTG71	Goshen	GE 1.6 – 100 LNTE	451847	4795547	-
G_WTG72	Goshen	GE 1.6 – 100 LNTE	450670	4804345	-
G_WTG73	Goshen	GE 1.6 – 100 LNTE	453192	4800669	-
G_WTG74	Goshen	GE 1.6 – 100 LNTE	453886	4795484	-
G_WTG75	Goshen	GE 1.6 – 100 LNTE	454731	4795014	-
G_WTG76	Goshen	GE 1.6 – 100 LNTE	454137	4793736	-
G_WTG77	Goshen	GE 1.6 – 100 LNTE	453186	4791237	-
G_WTG78	Goshen	GE 1.6 – 100 LNTE	447027	4790721	-
G_WTG79	Goshen	GE 1.6 – 100 LNTE	441914	4791634	-
G_WTG80	Goshen	GE 1.6 – 100 LNTE	445510	4796315	-
G_WTG81	Goshen	GE 1.6 – 100 LNTE	450167	4794140	-
G_WTG82	Goshen	GE 1.6 – 100 LNTE	452242	4793145	-
G_WTG83	Goshen	GE 1.6 – 100 LNTE	441815	4792131	-
G_WTG84	Goshen	GE 1.6 – 100 LNTE	438410	4790647	-
G_WTG85	Goshen	GE 1.6 – 100 LNTE	446173	4795111	-
G_WTG86	Goshen	GE 1.6 – 100 LNTE	446578	4793447	-

Table 6. Non-Project Wind Turbine and Transformer Locations

Identifier	Project	Equipment Make & Model	UTM Coordinates (NAD83 Zone 17N)		Remarks
			Easting	Northing	
Z_WTG01	Zurich	E-48	446741	4808398	-

Appendix A: Noise Impact Summary Table

Notes to Table:

1. As per section 6.1 a), of PIBS 4709e, points of reception up to 2000 metres are identified in the table and the project site plan. However, as per sections 6.3 and 6.4.1 noise levels have only been predicted for points of reception within 1500 metres of a Project wind turbine. Therefore the noise level results for points of reception at distances of greater than 1500 metres from the nearest Project wind turbine appear as dashes (-). The associated limits and compliance columns also appear as dashes (-) for these entries as compliance assessment is not required by the guideline.
2. Participating receptors are not subject to the MOE noise limits and in these cases the noise limit entries are represented as dashes (-), in such cases the associated compliance column also appears as a dash (-) since a compliance assessment is not required.

Table Abbreviations:

NP	–	Non-participating Point of Reception
VNP	–	Non-participating Vacant Lot Point of Reception
PR	–	Participating Point of Reception
VPR	–	Participating Vacant Lot Point of Reception
C	–	Compliant with MOE sound level limits for Wind Turbines in Class 3 areas (See Table 1)
NC	–	Not Compliant with MOE sound level limits for Wind Turbines in Class 3 areas (See Table 1)

Noise Impact Summary Table

Point of Reception ID	Description	Height	UTM Coordinates		Distance to Nearest Project Turbine (m)	Nearest Project Turbine ID	Distance to Project Transformer Substation (m)	Calculated Sound Level at Selected Wind Speeds (dBA)					Sound Level Limit (dBA)					Compliance Test
			X	Y				6	7	8	9	10	6	7	8	9	10	
GSH2288	NP	4.5	435638.0	4787385.0	1973.8	G_WTG61	20349.2	-	-	-	-	-	-	-	-	-	-	-
GSH50	NP	4.5	435804.0	4787584.0	1727.9	G_WTG61	20121.9	-	-	-	-	-	-	-	-	-	-	-
GSH47	NP	4.5	435823.0	4787163.0	1960.5	G_WTG61	20260.8	-	-	-	-	-	-	-	-	-	-	-
GSH42	NP	4.5	435880.0	4787164.0	1917.4	G_WTG61	20207.8	-	-	-	-	-	-	-	-	-	-	-
GSH43	NP	4.5	435890.0	4787195.0	1889.2	G_WTG61	20186.7	-	-	-	-	-	-	-	-	-	-	-
GSH44	NP	4.5	435919.0	4787234.0	1841.5	G_WTG61	20145.0	-	-	-	-	-	-	-	-	-	-	-
GSH51	NP	4.5	435974.0	4787456.0	1657.8	G_WTG61	20010.7	-	-	-	-	-	-	-	-	-	-	-
GSH52	NP	4.5	435980.0	4787481.0	1638.0	G_WTG61	19995.9	-	-	-	-	-	-	-	-	-	-	-
GSH54	NP	4.5	436116.0	4787567.0	1477.6	G_WTG61	19837.7	31.3	31.5	31.5	31.5	31.5	40.0	43.0	45.0	49.0	51.0	C
GSH2287	NP	4.5	436153.0	4787352.0	1589.8	G_WTG61	19883.8	-	-	-	-	-	-	-	-	-	-	-
GSH56	NP	4.5	436220.0	4787609.0	1369.7	G_WTG61	19725.6	32.0	32.1	32.1	32.1	32.1	40.0	43.0	45.0	49.0	51.0	C
GSH57	NP	4.5	436266.0	4787656.0	1304.5	G_WTG61	19665.5	32.3	32.5	32.5	32.5	32.5	40.0	43.0	45.0	49.0	51.0	C
GSH2284	NP	4.5	436332.0	4787693.0	1229.7	G_WTG61	19590.5	32.8	33.0	33.0	33.0	33.0	40.0	43.0	45.0	49.0	51.0	C
GSH61	NP	4.5	436378.0	4787821.0	1116.3	G_WTG61	19501.0	33.5	33.6	33.6	33.6	33.6	40.0	43.0	45.0	49.0	51.0	C
GSH64	NP	4.5	436562.0	4788408.0	733.8	G_WTG61	19123.0	36.5	36.6	36.6	36.6	36.6	40.0	43.0	45.0	49.0	51.0	C
GSH65	NP	4.5	436572.0	4788596.0	734.9	G_WTG61	19050.7	36.7	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH78	NP	4.5	436577.0	4789928.0	1274.6	G_WTG60	18648.7	33.5	33.7	33.7	33.7	33.7	40.0	43.0	45.0	49.0	51.0	C
GSH70	NP	4.5	436664.0	4788807.0	719.7	G_WTG61	18895.0	37.3	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH73	NP	4.5	436756.0	4789096.0	746.4	G_WTG60	18716.5	37.4	37.6	37.6	37.6	37.6	40.0	43.0	45.0	49.0	51.0	C
GSH77	NP	4.5	436868.0	4789554.0	809.1	G_WTG60	18472.8	36.6	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH118	NP	4.5	436991.0	4791820.0	1841.1	G_WTG84	17829.5	-	-	-	-	-	-	-	-	-	-	-
GSH120	NP	4.5	437031.0	4791797.0	1795.6	G_WTG84	17794.1	-	-	-	-	-	-	-	-	-	-	-
GSH82	NP	4.5	437059.0	4790173.0	1063.6	G_WTG57	18119.3	35.3	35.5	35.5	35.5	35.5	40.0	43.0	45.0	49.0	51.0	C
GSH85	NP	4.5	437079.0	4790357.0	1049.5	G_WTG57	18053.0	34.9	35.0	35.0	35.0	35.0	40.0	43.0	45.0	49.0	51.0	C
GSH84	NP	4.5	437088.0	4790351.0	1039.8	G_WTG57	18045.8	35.0	35.1	35.1	35.1	35.1	40.0	43.0	45.0	49.0	51.0	C
GSH83	NP	4.5	437095.0	4790318.0	1029.6	G_WTG57	18047.3	35.1	35.3	35.3	35.3	35.3	40.0	43.0	45.0	49.0	51.0	C
GSH87	NP	4.5	437216.0	4790664.0	1002.8	G_WTG57	17845.3	34.8	34.9	34.9	34.9	34.9	40.0	43.0	45.0	49.0	51.0	C
GSH88	NP	4.5	437402.0	4790656.0	834.7	G_WTG57	17666.6	36.0	36.2	36.2	36.2	36.2	40.0	43.0	45.0	49.0	51.0	C
GSH92	NP	4.5	437475.0	4791235.0	1104.5	G_WTG84	17465.6	33.6	33.8	33.8	33.8	33.8	40.0	43.0	45.0	49.0	51.0	C
GSH811	NP	4.5	439014.0	4791841.0	1338.1	G_WTG84	15836.3	32.3	32.4	32.4	32.4	32.4	40.0	43.0	45.0	49.0	51.0	C
GSH801	NP	4.5	439036.0	4791109.0	778.0	G_WTG84	15971.7	36.5	36.6	36.6	36.6	36.6	40.0	43.0	45.0	49.0	51.0	C
GSH2270	NP	4.5	439137.0	4792138.0	1658.8	G_WTG84	15660.9	-	-	-	-	-	-	-	-	-	-	-
GSH2269	NP	4.5	439152.0	4792170.0	1694.1	G_WTG84	15640.5	-	-	-	-	-	-	-	-	-	-	-
GSH772	NP	4.5	439315.0	4787271.0	1141.1	G_WTG63	17035.6	33.9	34.0	34.0	34.0	34.0	40.0	43.0	45.0	49.0	51.0	C
GSH802	NP	4.5	439353.0	4790837.0	594.6	G_WTG54	15731.6	38.1	38.3	38.3	38.3	38.3	40.0	43.0	45.0	49.0	51.0	C
GSH803	NP	4.5	439378.0	4790850.0	585.5	G_WTG54	15704.1	38.2	38.3	38.3	38.3	38.3	40.0	43.0	45.0	49.0	51.0	C
GSH807	NP	4.5	439500.0	4791426.0	1032.2	G_WTG54	15447.2	34.2	34.4	34.4	34.4	34.4	40.0	43.0	45.0	49.0	51.0	C
GSH821	NP	4.5	439541.0	4792115.0	1697.7	G_WTG54	15267.4	-	-	-	-	-	-	-	-	-	-	-
GSH769	NP	4.5	439554.0	4788402.0	602.7	G_WTG52	16341.5	39.5	39.5	39.5	39.5	39.5	40.0	43.0	45.0	49.0	51.0	C
GSH782	NP	4.5	439723.0	4787786.0	729.4	G_WTG52	16442.8	36.6	36.7	36.6	36.6	36.6	40.0	43.0	45.0	49.0	51.0	C
GSH784	NP	4.5	439779.0	4787697.0	774.0	G_WTG52	16431.1	36.1	36.1	36.1	36.1	36.1	40.0	43.0	45.0	49.0	51.0	C
GSH2292	NP	4.5	439927.0	4786538.0	1849.2	G_WTG52	16841.3	-	-	-	-	-	-	-	-	-	-	-
GSH2295	NP	4.5	439980.0	4786818.0	1564.9	G_WTG52	16657.9	-	-	-	-	-	-	-	-	-	-	-
GSH2290	NP	4.5	440027.0	4786491.0	1886.4	G_WTG52	16777.9	-	-	-	-	-	-	-	-	-	-	-
GSH785	NP	4.5	440033.0	4787833.0	553.8	G_WTG52	16143.2	38.2	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH2291	NP	4.5	440052.0	4786523.0	1852.9	G_WTG52	16740.3	-	-	-	-	-	-	-	-	-	-	-
GSH791	NP	4.5	440415.0	4787786.0	641.6	G_WTG52	15821.4	36.8	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH792	NP	4.5	440700.0	4787826.0	771.5	G_WTG52	15549.0	35.3	35.3	35.3	35.3	35.3	40.0	43.0	45.0	49.0	51.0	C
GSH865	NP	4.5	440955.0	4792734.0	1050.3	G_WTG83	13769.2	32.6	32.7	32.7	32.7	32.7	40.0	43.0	45.0	49.0	51.0	C
GSH854	NP	4.5	441042.0	4793130.0	1263.1	G_WTG83	13626.7	31.0	31.2	31.2	31.2	31.2	40.0	43.0	45.0	49.0	51.0	C
GSH879	NP	4.5	441161.0	4791860.0	707.9	G_WTG83	13731.3	37.1	37.2	37.2	37.2	37.2	40.0	43.0	45.0	49.0	51.0	C
GSH874	NP	4.5	441208.0	4792035.0	614.5	G_WTG83	13647.9	37.6	37.7	37.7	37.7	37.7	40.0	43.0	45.0	49.0	51.0	C
GSH885	NP	4.5	441225.0	4791607.0	689.5	G_WTG79	13727.1	37.5	37.6	37.6	37.6	37.6	40.0	43.0	45.0	49.0	51.0	C
GSH871	NP	4.5	441292.0	4792345.0	565.1	G_WTG83	13504.1	37.5	37.7	37.7	37.7	37.7	40.0	43.0	45.0	49.0	51.0	C
GSH2216	NP	4.5	441306.0	4791258.0	714.9	G_WTG79	13736.4	37.3	37.4	37.4	37.4	37.4	40.0	43.0	45.0	49.0	51.0	C
GSH890	NP	4.5	441332.0	4790705.0	820.0	G_WTG53	13867.7	36.0	36.1	36.1	36.1	36.1	40.0	43.0	45.0	49.0	51.0	C
GSH918	NP	4.5	441334.0	4788992.0	1330.7	G_WTG52	14474.4	33.2	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH851	NP	4.5	441384.0	4793142.0	1099.0	G_WTG83	13286.0	32.1	32.2	32.2	32.2	32.2	40.0	43.0	45.0	49.0	51.0	C
GSH895	NP	4.5	441394.0	4790518.0	820.8	G_WTG53	13866.4	35.7	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH2219	NP	4.5	441421.0	4791275.0	609.9	G_WTG79	13621.0	38.3	38.4	38.4	38.4	38.4	40.0	43.0	45.0	49.0	51.0	C
GSH904	NP	4.5	441473.0	4789473.0	1506.4	G_WTG55	14156.9	-	-	-	-	-	-	-	-	-	-	-
GSH900	NP	4.5	441483.0	4789804.0	1250.4	G_WTG53	14024.4	33.6	33.7	33.7	33.7	33.7	40.0	43.0	45.0	49.0	51.0	C
GSH896	NP	4.5	441587.0	4790457.0	686.8	G_WTG53	13702.9	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH898	NP	4.5	441597.0	4790069.0	965.7	G_WTG53	13823.7	34.4	34.5	34.5	34.5	34.5	40.0	43.0	45.0	49.0	51.0	C
GSH936	NP	4.5	441612.0	4788459.0	1458.5	G_WTG52	14449.9	31.4	31.5	31.5	31.5	31.5	40.0	43.0	45.0	49.0	51.0	C
GSH906	NP	4.5	441663.0	4789566.0	1387.7	G_WTG53	13945.8	32.7	32.8	32.8	32.8	32.8	40.0	43.0	45.0	49.0	51.0	C
GSH862	NP	4.5	441673.0	4793563.0	1439.0	G_WTG83	12949.9	30.6	30.7	30.7	30.7	30.7	40.0	43.0	45.0	49.0	51.0	C
GSH864	NP	4.5	441678.0	4793548.0	1423.6	G_WTG83	12946.5	30.7	30.9	30.9	30.9	30.9	40.0	43.0	45.0	49.0	51.0	C
GSH909	NP	4.5	441705.0	4789334.0	1596.0	G_WTG53	13997.3	-	-	-	-	-	-	-	-	-	-	-
GSH911	NP	4.5	441754.0	4789162.0	1751.0	G_WTG53	14021.6	-	-	-	-	-	-	-	-	-	-	-
GSH937	NP	4.5	441825.0	4788441.0	1670.4	G_WTG52	14267.5	-	-	-	-	-	-	-	-	-	-	-
GSH1028	NP	4.5	442477.0	4791796.0	585.8	G_WTG79	12466.7	38.6	38.8	38.8	38.8	38.8	40.0	43.0	45.0	49.0	51.0	C
GSH2273	NP	4.5	442659.0	4789760.0	1228.4	G_WTG53	12952.6	31.7	31.8	31.8	31.8	31.8	40.0	43.0	45.0	49.0	51.0	C
GSH1029	NP	4.5	443303.0	4793567.0	1115.0	G_WTG17	11329.1	33.9	34.0	34.0	34.0	34.0	40.0	43.0	45.0	49.0	51.0	C
GSH1024	NP	4.5	443423.0	4791787.0	1044.0	G_WTG17	11554.9	34.1	34.3	34.3	34.3	34.3	40.0	43.0	45.0	49.0	51.0	C
GSH1025	NP	4.5	443429.0	4791737.0	1083.8	G_WTG17	11562.6	34.0	34.1	34.1	34.1	34.1	40.0	43.0	45.0	49.0	51.0	C
GSH1017	NP	4.5	443458.0	4790531.0	1366.0	G_WTG53	11920.2	31.5	31.6	31.6	31.6	31.6	40.0	43.0	45.0	49.0	51.0	C
GSH1015	NP	4.5	443546.0	4790322.0	1514.0	G_WTG53	11916.8	-	-	-	-	-	-	-	-	-	-	-
GSH1016	NP	4.5	443562.0	4790344.0	1521.2	G_WTG53	11893.6	-	-	-	-	-	-	-	-	-	-	-
GSH1012	NP	4.5	443566.0	4790146.0	1604.2	G_WTG53	11966.9	-	-	-	-	-	-	-	-	-	-	-
GSH1011	NP	4.5	443570.0	4790177.0	1594.0	G_WTG53	11951.0	-	-	-	-	-	-	-	-	-	-	-
GSH1010	NP	4.5	443583.0	4790175.0	1606.6	G_WTG53	11939.8	-	-	-	-	-	-	-	-	-	-	-
GSH1020	NP	4.5	443618.0	4790648.0	1499.7	G_WTG53	11728.7	31.4	31.5	31.5	31.5	31.5	40.0	43.0	45.0	49.0	51.0	C
GSH1005	NP	4.5	443625.0	4789873.0	1793.3	G_WTG53	12023.9	-	-	-	-	-	-	-	-	-	-	-
GSH1022	NP	4.5	443626.0	4790691.0	1501.8	G_WTG53	11705.8	-	-	-	-	-	-	-	-	-	-	-

Noise Impact Summary Table

Point of Reception ID	Description	Height	UTM Coordinates		Distance to Nearest Project Turbine (m)	Nearest Project Turbine ID	Distance to Project Transformer Substation (m)	Calculated Sound Level at Selected Wind Speeds (dBA)					Sound Level Limit (dBA)					Compliance Test
			X	Y				6	7	8	9	10	6	7	8	9	10	
GSH1001	NP	4.5	443655.0	4789604.0	1978.8	G_WTG53	12111.4	-	-	-	-	-	-	-	-	-	-	-
GSH1009	NP	4.5	443678.0	4790126.0	1713.4	G_WTG53	11872.1	-	-	-	-	-	-	-	-	-	-	-
GSH1004	NP	4.5	443765.0	4789815.0	1942.2	G_WTG53	11921.3	-	-	-	-	-	-	-	-	-	-	-
GSH564	NP	4.5	444506.0	4797953.0	1921.2	G_WTG80	10508.0	-	-	-	-	-	-	-	-	-	-	-
GSH2379	NP	4.5	444593.0	4798034.0	1948.3	G_WTG80	10448.9	-	-	-	-	-	-	-	-	-	-	-
GSH567	NP	4.5	444605.0	4798053.0	1959.5	G_WTG80	10443.2	-	-	-	-	-	-	-	-	-	-	-
GSH2380	NP	4.5	444605.0	4798053.0	1959.5	G_WTG80	10443.2	-	-	-	-	-	-	-	-	-	-	-
GSH568	NP	4.5	444626.0	4797735.0	1672.7	G_WTG80	10331.0	-	-	-	-	-	-	-	-	-	-	-
GSH559	NP	4.5	444673.0	4796896.0	1018.9	G_WTG80	10085.4	33.2	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH550	NP	4.5	444751.0	4796385.0	762.2	G_WTG80	9918.9	36.1	36.2	36.2	36.2	36.2	40.0	43.0	45.0	49.0	51.0	C
GSH544	NP	4.5	444765.0	4796014.0	803.5	G_WTG80	9855.6	37.0	37.1	37.1	37.1	37.1	40.0	43.0	45.0	49.0	51.0	C
GSH556	NP	4.5	444800.0	4796584.0	759.3	G_WTG80	9902.7	35.7	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH553	NP	4.5	444852.0	4796297.0	658.2	G_WTG80	9806.0	37.4	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH541	NP	7.5	444946.0	4795496.0	680.3	G_WTG19	9629.0	39.0	39.1	39.1	39.1	39.1	40.0	43.0	45.0	49.0	51.0	C
GSH539	NP	4.5	445006.0	4794507.0	837.7	G_WTG16	9556.8	37.9	38.0	38.0	38.0	38.0	40.0	43.0	45.0	49.0	51.0	C
GSH522	NP	4.5	445102.0	4793796.0	734.7	G_WTG16	9515.7	38.0	38.1	38.1	38.1	38.1	40.0	43.0	45.0	49.0	51.0	C
GSH537	NP	4.5	445127.0	4794547.0	834.1	G_WTG21	9434.4	38.3	38.5	38.5	38.5	38.5	40.0	43.0	45.0	49.0	51.0	C
GSH533	NP	4.5	445158.0	4794251.0	700.2	G_WTG21	9418.7	38.6	38.7	38.7	38.7	38.7	40.0	43.0	45.0	49.0	51.0	C
GSH521	NP	4.5	445162.0	4793358.0	976.6	G_WTG16	9516.4	36.7	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH512	NP	4.5	445216.0	4793124.0	1171.0	G_WTG16	9503.6	36.2	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH523	NP	4.5	445244.0	4793778.0	696.2	G_WTG21	9376.8	38.2	38.3	38.3	38.3	38.3	40.0	43.0	45.0	49.0	51.0	C
GSH524	NP	4.5	445268.0	4793737.0	697.5	G_WTG21	9357.9	38.1	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH513	NP	4.5	445320.0	4793008.0	1189.7	G_WTG36	9423.8	36.2	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH508	NP	4.5	445321.0	4792198.0	875.0	G_WTG36	9616.8	36.5	36.6	36.6	36.6	36.6	40.0	43.0	45.0	49.0	51.0	C
GSH563	NP	4.5	445345.0	4796844.0	554.1	G_WTG80	9416.9	37.6	37.8	37.8	37.8	37.8	40.0	43.0	45.0	49.0	51.0	C
GSH507	NP	4.5	445354.0	4792202.0	842.0	G_WTG36	9584.0	36.7	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH495	NP	4.5	445487.0	4791940.0	756.2	G_WTG36	9534.0	37.7	37.8	37.8	37.8	37.8	40.0	43.0	45.0	49.0	51.0	C
GSH481	NP	4.5	445500.0	4791311.0	719.2	G_WTG38	9734.4	37.6	37.7	37.7	37.7	37.7	40.0	43.0	45.0	49.0	51.0	C
GSH201	NP	4.5	445500.0	4805823.0	1985.4	G_WTG07	14201.7	-	-	-	-	-	-	-	-	-	-	-
GSH475	NP	4.5	445532.0	4790613.0	766.3	G_WTG38	9982.7	35.7	35.9	35.9	35.9	35.9	40.0	43.0	45.0	49.0	51.0	C
GSH479	NP	4.5	445542.0	4790920.0	636.8	G_WTG38	9846.1	37.3	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH204	NP	4.5	445566.0	4805372.0	1634.6	G_WTG07	13814.2	-	-	-	-	-	-	-	-	-	-	-
GSH202	NP	4.5	445601.0	4805856.0	1942.1	G_WTG07	14163.0	-	-	-	-	-	-	-	-	-	-	-
GSH220	NP	4.5	445613.0	4804500.0	1261.3	G_WTG07	13132.3	30.4	30.5	30.5	30.5	30.5	40.0	43.0	45.0	49.0	51.0	C
GSH470	NP	4.5	445625.0	4790039.0	1140.1	G_WTG38	10159.5	32.9	33.0	33.0	33.0	33.0	40.0	43.0	45.0	49.0	51.0	C
GSH509	NP	4.5	445698.0	4792822.0	794.5	G_WTG36	9094.0	37.4	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH206	NP	4.5	445738.0	4805399.0	1519.0	G_WTG07	13723.6	-	-	-	-	-	-	-	-	-	-	-
GSH474	NP	4.5	445741.0	4790142.0	995.7	G_WTG38	10008.5	33.9	34.1	34.1	34.1	34.1	40.0	43.0	45.0	49.0	51.0	C
GSH237	NP	4.5	445756.0	4803670.0	1322.9	G_WTG07	12435.6	31.7	31.8	31.8	31.8	31.8	40.0	43.0	45.0	49.0	51.0	C
GSH219	NP	4.5	445798.0	4804521.0	1079.6	G_WTG07	13022.5	31.7	31.8	31.8	31.8	31.8	40.0	43.0	45.0	49.0	51.0	C
GSH242	NP	4.5	445800.0	4803380.0	1271.5	G_WTG08	12200.8	31.9	32.0	32.0	32.0	32.0	40.0	43.0	45.0	49.0	51.0	C
GSH456	NP	4.5	445858.0	4789646.0	1429.8	G_WTG38	10152.4	31.5	31.6	31.6	31.6	31.6	40.0	43.0	45.0	49.0	51.0	C
GSH227	NP	4.5	445861.0	4804092.0	1049.7	G_WTG07	12665.0	32.5	32.7	32.7	32.7	32.7	40.0	43.0	45.0	49.0	51.0	C
GSH1115	NP	4.5	445863.0	4802981.0	1284.3	G_WTG08	11880.2	32.1	32.2	32.2	32.2	32.2	40.0	43.0	45.0	49.0	51.0	C
GSH243	NP	4.5	445976.0	4802403.0	909.6	G_WTG09	11408.7	33.1	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH1110	NP	4.5	446055.0	4801759.0	842.7	G_WTG09	10933.4	33.1	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH259	NP	4.5	446061.0	4800875.0	1437.9	G_WTG09	10395.3	29.2	29.3	29.3	29.3	29.3	40.0	43.0	45.0	49.0	51.0	C
GSH1116	NP	4.5	446097.0	4802942.0	1083.7	G_WTG08	11683.1	33.5	33.6	33.6	33.6	33.6	40.0	43.0	45.0	49.0	51.0	C
GSH244	NP	4.5	446129.0	4802319.0	737.5	G_WTG09	11238.4	34.7	34.8	34.8	34.8	34.8	40.0	43.0	45.0	49.0	51.0	C
GSH1111	NP	4.5	446149.0	4801788.0	745.0	G_WTG09	10878.8	34.2	34.3	34.3	34.3	34.3	40.0	43.0	45.0	49.0	51.0	C
GSH274	NP	4.5	446152.0	4800361.0	1857.2	G_WTG09	10031.3	-	-	-	-	-	-	-	-	-	-	-
GSH250	NP	4.5	446226.0	4801292.0	1000.8	G_WTG09	10509.8	31.7	31.8	31.8	31.8	31.8	40.0	43.0	45.0	49.0	51.0	C
GSH2249	NP	4.5	446372.0	4800946.0	1232.3	G_WTG09	10184.8	30.4	30.5	30.5	30.5	30.5	40.0	43.0	45.0	49.0	51.0	C
GSH260	NP	4.5	446375.0	4800948.0	1229.3	G_WTG09	10183.6	30.4	30.5	30.5	30.5	30.5	40.0	43.0	45.0	49.0	51.0	C
GSH275	NP	4.5	446400.0	4800302.0	1839.0	G_WTG09	9791.7	-	-	-	-	-	-	-	-	-	-	-
GSH270	NP	4.5	446423.0	4800560.0	1583.2	G_WTG09	9918.0	-	-	-	-	-	-	-	-	-	-	-
GSH2248	NP	4.5	446502.0	4800968.0	1169.0	G_WTG09	10093.9	30.8	31.0	31.0	31.0	31.0	40.0	43.0	45.0	49.0	51.0	C
GSH329	NP	4.5	446629.0	4797579.0	1688.2	G_WTG80	8372.4	-	-	-	-	-	-	-	-	-	-	-
GSH330	NP	4.5	446745.0	4797565.0	1651.8	G_WTG23	8258.1	-	-	-	-	-	-	-	-	-	-	-
GSH342	NP	4.5	446758.0	4796597.0	1117.1	G_WTG23	7983.6	35.4	35.5	35.5	35.5	35.5	40.0	43.0	45.0	49.0	51.0	C
GSH393	NP	4.5	446788.0	4788826.0	1910.0	G_WTG78	9849.8	-	-	-	-	-	-	-	-	-	-	-
GSH332	NP	4.5	446791.0	4797288.0	1422.2	G_WTG23	8128.4	32.3	32.5	32.5	32.5	32.5	40.0	43.0	45.0	49.0	51.0	C
GSH335	NP	4.5	446801.0	4797100.0	1295.0	G_WTG23	8065.2	33.2	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH2381	NP	4.5	446807.0	4796605.0	1071.6	G_WTG23	7937.5	35.4	35.5	35.5	35.5	35.5	40.0	43.0	45.0	49.0	51.0	C
GSH344	NP	4.5	446860.0	4796191.0	818.4	G_WTG22	7805.8	37.1	37.3	37.3	37.3	37.3	40.0	43.0	45.0	49.0	51.0	C
GSH350	NP	4.5	446911.0	4795634.0	625.1	G_WTG22	7681.3	38.9	39.0	39.0	39.0	39.0	40.0	43.0	45.0	49.0	51.0	C
GSH337	NP	4.5	446917.0	4796983.0	1132.5	G_WTG23	7921.9	33.8	33.9	33.9	33.9	33.9	40.0	43.0	45.0	49.0	51.0	C
GSH358	NP	4.5	447121.0	4794355.0	801.3	G_WTG66	7453.2	37.9	38.1	38.1	38.1	38.1	40.0	43.0	45.0	49.0	51.0	C
GSH2386	NP	4.5	447145.0	4794884.0	803.8	G_WTG66	7410.5	38.1	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH365	NP	4.5	447206.0	4793902.0	775.5	G_WTG86	7414.6	38.2	38.3	38.3	38.3	38.3	40.0	43.0	45.0	49.0	51.0	C
GSH371	NP	4.5	447223.0	4792987.0	792.2	G_WTG86	7573.6	37.5	37.6	37.6	37.6	37.6	40.0	43.0	45.0	49.0	51.0	C
GSH370	NP	4.5	447294.0	4793224.0	749.9	G_WTG86	7448.5	37.8	38.0	38.0	38.0	38.0	40.0	43.0	45.0	49.0	51.0	C
GSH388	NP	4.5	447354.0	4788916.0	1834.4	G_WTG78	9352.2	-	-	-	-	-	-	-	-	-	-	-
GSH366	NP	4.5	447368.0	4793656.0	618.4	G_WTG39	7291.4	38.6	38.7	38.7	38.7	38.7	40.0	43.0	45.0	49.0	51.0	C
GSH1177	NP	4.5	447524.0	4806107.0	1842.4	G_WTG07	13244.7	-	-	-	-	-	-	-	-	-	-	-
GSH380	NP	4.5	447548.0	4791410.0	695.2	G_WTG64	7820.8	38.1	38.3	38.3	38.3	38.3	40.0	43.0	45.0	49.0	51.0	C
GSH1185	NP	4.5	447574.0	4805699.0	1491.2	G_WTG07	12873.6	31.5	31.6	31.6	31.6	31.6	40.0	43.0	45.0	49.0	51.0	C
GSH1190	NP	4.5	447593.0	4804867.0	869.8	G_WTG07	12172.0	35.3	35.4	35.4	35.4	35.4	40.0	43.0	45.0	49.0	51.0	C
GSH382	NP	4.5	447606.0	4791043.0	662.5	G_WTG78	7939.7	37.8	37.9	37.9	37.9	37.9	40.0	43.0	45.0	49.0	51.0	C
GSH1196	NP	4.5	447631.0	4804870.0	903.3	G_WTG07	12152.8	35.2	35.3	35.3	35.3	35.3	40.0	43.0	45.0	49.0	51.0	C
GSH1197	NP	4.5	447639.0	4804908.0	930.8	G_WTG07	12179.5	35.0	35.2	35.2	35.2	35.2	40.0	43.0	45.0	49.0	51.0	C
GSH1198	NP	4.5	447657.0	4804842.0	910.9	G_WTG07	12115.0	35.3	35.4	35.4	35.4	35.4	40.0	43.0	45.0	49.0	51.0	C
GSH1179	NP	4.5	447791.0	4806137.0	1795.3	G_WTG10	13130.6	-	-	-	-	-	-	-	-	-	-	-
GSH1286	NP	4.5	447824.0	4799376.0	1766.1	G_WTG15	8093.2	-	-	-	-	-	-	-	-	-	-	-
GSH1208	NP	4.5	447826.0	4804135.0	875.7	G_WTG11	11440.6	37.2	37.3	37.3	37.3	37.3	40.0	43.0	45.0	49.0	51.0	C

Noise Impact Summary Table

Point of Reception ID	Description	Height	UTM Coordinates		Distance to Nearest Project Turbine (m)	Nearest Project Turbine ID	Distance to Project Transformer Substation (m)	Calculated Sound Level at Selected Wind Speeds (dBA)					Sound Level Limit (dBA)					Compliance Test
			X	Y				6	7	8	9	10	6	7	8	9	10	
GSH1271	NP	4.5	447833.0	4799267.0	1827.5	G_WTG15	8025.7	-	-	-	-	-	-	-	-	-	-	-
GSH2336	NP	4.5	447835.0	4804251.0	935.3	G_WTG11	11529.4	37.0	37.1	37.1	37.1	37.1	40.0	43.0	45.0	49.0	51.0	C
GSH1187	NP	4.5	447853.0	4805649.0	1360.7	G_WTG10	12682.0	32.0	32.1	32.1	32.1	32.1	40.0	43.0	45.0	49.0	51.0	C
GSH385	NP	4.5	447885.0	4790558.0	873.3	G_WTG78	7949.8	35.8	36.0	36.0	36.0	36.0	40.0	43.0	45.0	49.0	51.0	C
GSH1218	NP	4.5	447891.0	4803865.0	704.5	G_WTG11	11184.5	37.8	38.0	38.0	38.0	38.0	40.0	43.0	45.0	49.0	51.0	C
GSH1215	NP	4.5	447911.0	4803622.0	658.8	G_WTG11	10978.2	38.1	38.3	38.3	38.3	38.3	40.0	43.0	45.0	49.0	51.0	C
GSH1287	NP	4.5	447977.0	4799311.0	1690.4	G_WTG15	7930.0	-	-	-	-	-	-	-	-	-	-	-
GSH1223	NP	4.5	447984.0	4802763.0	1065.8	G_WTG13	10260.6	36.4	36.6	36.6	36.6	36.6	40.0	43.0	45.0	49.0	51.0	C
GSH1211	NP	4.5	447991.0	4804128.0	736.7	G_WTG11	11338.6	37.7	37.9	37.9	37.9	37.9	40.0	43.0	45.0	49.0	51.0	C
GSH1255	NP	4.5	448070.0	4800513.0	1157.7	G_WTG15	8588.3	32.7	32.8	32.8	32.8	32.8	40.0	43.0	45.0	49.0	51.0	C
GSH2334	NP	4.5	448073.0	4804904.0	715.8	G_WTG10	11935.0	36.3	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH1100	NP	4.5	448145.0	4797329.0	1042.7	G_WTG23	6861.3	32.5	32.7	32.7	32.7	32.7	40.0	43.0	45.0	49.0	51.0	C
GSH1256	NP	4.5	448185.0	4800434.0	1041.1	G_WTG15	8449.7	33.1	33.2	33.2	33.2	33.2	40.0	43.0	45.0	49.0	51.0	C
GSH1247	NP	4.5	448188.0	4801555.0	690.5	G_WTG14	9222.9	36.8	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH1227	NP	4.5	448206.0	4802484.0	747.0	G_WTG13	9904.2	37.2	37.3	37.3	37.3	37.3	40.0	43.0	45.0	49.0	51.0	C
GSH1231	NP	4.5	448207.0	4801884.0	716.8	G_WTG14	9450.9	37.5	37.6	37.6	37.6	37.6	40.0	43.0	45.0	49.0	51.0	C
GSH1224	NP	4.5	448327.0	4802884.0	822.1	G_WTG11	10139.6	37.7	37.8	37.8	37.8	37.8	40.0	43.0	45.0	49.0	51.0	C
GSH1092	NP	4.5	448333.0	4793131.0	676.0	G_WTG39	6464.4	36.7	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH1251	NP	4.5	448338.0	4801383.0	588.6	G_WTG14	8994.9	37.6	37.8	37.8	37.8	37.8	40.0	43.0	45.0	49.0	51.0	C
GSH1259	NP	4.5	448356.0	4800382.0	872.7	G_WTG15	8287.0	34.0	34.2	34.2	34.2	34.2	40.0	43.0	45.0	49.0	51.0	C
GSH1264	NP	4.5	448421.0	4800769.0	865.9	G_WTG15	8501.6	35.3	35.4	35.4	35.4	35.4	40.0	43.0	45.0	49.0	51.0	C
GSH395	NP	4.5	448464.0	4788902.0	1908.9	G_WTG42	8536.8	-	-	-	-	-	-	-	-	-	-	-
GSH1261	NP	4.5	448491.0	4800563.0	743.6	G_WTG15	8309.1	35.5	35.6	35.6	35.6	35.6	40.0	43.0	45.0	49.0	51.0	C
GSH1300	NP	4.5	448601.0	4798579.0	1972.6	G_WTG15	7008.3	-	-	-	-	-	-	-	-	-	-	-
GSH1301	NP	4.5	448689.0	4798634.0	1893.7	G_WTG15	6963.2	-	-	-	-	-	-	-	-	-	-	-
GSH402	NP	4.5	448706.0	4789013.0	1747.2	G_WTG42	8286.8	-	-	-	-	-	-	-	-	-	-	-
GSH1314	NP	4.5	448765.0	4798028.0	1931.3	G_WTG23	6589.5	-	-	-	-	-	-	-	-	-	-	-
GSH401	NP	4.5	448821.0	4789182.0	1564.2	G_WTG42	8086.0	-	-	-	-	-	-	-	-	-	-	-
GSH1331	NP	4.5	448858.0	4796745.0	1096.2	G_WTG23	5994.0	32.4	32.5	32.5	32.5	32.5	40.0	43.0	45.0	49.0	51.0	C
GSH1339	NP	4.5	448865.0	4796453.0	1029.3	G_WTG23	5903.1	33.1	33.2	33.2	33.2	33.2	40.0	43.0	45.0	49.0	51.0	C
GSH1350	NP	4.5	448914.0	4795779.0	1204.9	G_WTG23	5712.2	33.4	33.5	33.5	33.5	33.5	40.0	43.0	45.0	49.0	51.0	C
GSH1345	NP	4.5	448934.0	4796032.0	1131.2	G_WTG23	5737.7	33.2	33.4	33.4	33.4	33.4	40.0	43.0	45.0	49.0	51.0	C
GSH1346	NP	4.5	448959.0	4795875.0	1205.6	G_WTG23	5683.7	33.2	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH1328	NP	4.5	448977.0	4797281.0	1479.3	G_WTG23	6072.1	30.6	30.7	30.7	30.7	30.7	40.0	43.0	45.0	49.0	51.0	C
GSH1341	NP	4.5	449025.0	4796399.0	1184.0	G_WTG23	5734.5	32.4	32.5	32.5	32.5	32.5	40.0	43.0	45.0	49.0	51.0	C
GSH1325	NP	4.5	449046.0	4797555.0	1716.2	G_WTG23	6123.3	-	-	-	-	-	-	-	-	-	-	-
GSH1324	NP	4.5	449065.0	4797535.0	1715.5	G_WTG23	6097.4	-	-	-	-	-	-	-	-	-	-	-
GSH1334	NP	4.5	449086.0	4796816.0	1334.3	G_WTG23	5801.0	31.4	31.6	31.6	31.6	31.6	40.0	43.0	45.0	49.0	51.0	C
GSH1354	NP	4.5	449196.0	4794305.0	984.9	G_WTG81	5390.5	34.6	34.7	34.7	34.7	34.7	40.0	43.0	45.0	49.0	51.0	C
GSH2279	NP	4.5	449234.0	4789179.0	1577.0	G_WTG42	7800.8	-	-	-	-	-	-	-	-	-	-	-
GSH1356	NP	4.5	449244.0	4793939.0	944.6	G_WTG81	5394.7	34.9	35.0	35.0	35.0	35.0	40.0	43.0	45.0	49.0	51.0	C
GSH1305	NP	4.5	449264.0	4799573.0	877.8	G_WTG15	7070.8	33.1	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH1309	NP	4.5	449298.0	4799442.0	1010.6	G_WTG15	6958.9	32.1	32.2	32.2	32.2	32.2	40.0	43.0	45.0	49.0	51.0	C
GSH1380	NP	4.5	449303.0	4792729.0	1194.8	G_WTG41	5676.9	34.6	34.7	34.7	34.7	34.7	40.0	43.0	45.0	49.0	51.0	C
GSH1351	NP	4.5	449319.0	4794762.0	1051.7	G_WTG81	5237.8	33.9	34.0	34.0	34.0	34.0	40.0	43.0	45.0	49.0	51.0	C
GSH1422	NP	4.5	449348.0	4789170.0	1607.4	G_WTG42	7730.1	-	-	-	-	-	-	-	-	-	-	-
GSH1310	NP	4.5	449393.0	4799500.0	964.6	G_WTG15	6925.9	32.4	32.5	32.5	32.5	32.5	40.0	43.0	45.0	49.0	51.0	C
GSH1374	NP	4.5	449423.0	4793049.0	1320.5	G_WTG81	5450.2	34.3	34.4	34.4	34.4	34.4	40.0	43.0	45.0	49.0	51.0	C
GSH1370	NP	4.5	449433.0	4793526.0	956.9	G_WTG81	5299.1	34.8	35.0	35.0	35.0	35.0	40.0	43.0	45.0	49.0	51.0	C
GSH1355	NP	4.5	449450.0	4794316.0	738.3	G_WTG81	5136.8	35.6	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH2354	NP	4.5	449450.0	4807236.0	1805.3	G_WTG02	13366.6	-	-	-	-	-	-	-	-	-	-	-
GSH1369	NP	4.5	449479.0	4793473.0	958.2	G_WTG81	5268.6	34.8	35.0	35.0	35.0	35.0	40.0	43.0	45.0	49.0	51.0	C
GSH1648	NP	4.5	449480.0	4807038.0	1630.7	G_WTG02	13172.2	-	-	-	-	-	-	-	-	-	-	-
GSH1643	NP	4.5	449511.0	4806699.0	1363.4	G_WTG02	12847.9	31.3	31.4	31.4	31.4	31.4	40.0	43.0	45.0	49.0	51.0	C
GSH1371	NP	4.5	449520.0	4793226.0	1119.8	G_WTG81	5301.0	34.5	34.6	34.6	34.6	34.6	40.0	43.0	45.0	49.0	51.0	C
GSH1631	NP	4.5	449559.0	4805994.0	984.1	G_WTG02	12182.8	34.5	34.6	34.6	34.6	34.6	40.0	43.0	45.0	49.0	51.0	C
GSH1647	NP	4.5	449577.0	4806956.0	1505.8	G_WTG02	13059.3	-	-	-	-	-	-	-	-	-	-	-
GSH2352	NP	4.5	449581.0	4807202.0	1702.4	G_WTG02	13285.6	-	-	-	-	-	-	-	-	-	-	-
GSH2343	NP	4.5	449583.0	4792102.0	848.2	G_WTG41	5697.2	36.2	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH1652	NP	4.5	449623.0	4807103.0	1596.8	G_WTG02	13178.0	-	-	-	-	-	-	-	-	-	-	-
GSH1381	NP	4.5	449632.0	4792329.0	1032.4	G_WTG41	5546.4	35.5	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2356	NP	4.5	449669.0	4806476.0	1098.1	G_WTG02	12580.9	32.9	33.0	33.0	33.0	33.0	40.0	43.0	45.0	49.0	51.0	C
GSH1625	NP	4.5	449678.0	4805687.0	847.3	G_WTG02	11854.1	36.1	36.2	36.2	36.2	36.2	40.0	43.0	45.0	49.0	51.0	C
GSH1638	NP	4.5	449687.0	4806454.0	1070.3	G_WTG02	12553.6	33.1	33.2	33.2	33.2	33.2	40.0	43.0	45.0	49.0	51.0	C
GSH1645	NP	4.5	449713.0	4806779.0	1282.7	G_WTG02	12844.0	31.5	31.6	31.6	31.6	31.6	40.0	43.0	45.0	49.0	51.0	C
GSH1621	NP	4.5	449729.0	4805331.0	872.3	G_WTG04	11509.0	37.1	37.2	37.2	37.2	37.2	40.0	43.0	45.0	49.0	51.0	C
GSH1611	NP	4.5	449731.0	4804304.0	939.9	G_WTG72	10584.6	37.6	37.8	37.8	37.8	37.8	40.0	43.0	45.0	49.0	51.0	C
GSH1633	NP	4.5	449749.0	4806022.0	807.5	G_WTG02	12131.9	35.5	35.6	35.6	35.6	35.6	40.0	43.0	45.0	49.0	51.0	C
GSH1619	NP	4.5	449763.0	4805168.0	785.8	G_WTG04	11346.9	37.5	37.7	37.7	37.7	37.7	40.0	43.0	45.0	49.0	51.0	C
GSH1416	NP	4.5	449764.0	4790256.0	911.3	G_WTG42	6660.8	35.7	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH1289	NP	4.5	449768.0	4799683.0	939.2	G_WTG15	6779.4	32.7	32.9	32.9	32.9	32.9	40.0	43.0	45.0	49.0	51.0	C
GSH1400	NP	4.5	449776.0	4791323.0	925.3	G_WTG41	5959.5	37.3	37.4	37.4	37.4	37.4	40.0	43.0	45.0	49.0	51.0	C
GSH1615	NP	4.5	449808.0	4804750.0	749.6	G_WTG04	10949.8	38.1	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH2358	NP	4.5	449878.0	4804018.0	856.9	G_WTG72	10263.0	37.8	37.9	37.9	37.9	37.9	40.0	43.0	45.0	49.0	51.0	C
GSH2357	NP	4.5	449883.0	4803948.0	881.5	G_WTG72	10198.4	37.7	37.9	37.9	37.9	37.9	40.0	43.0	45.0	49.0	51.0	C
GSH1603	NP	4.5	449884.0	4804003.0	857.2	G_WTG72	10246.9	37.8	37.9	37.9	37.9	37.9	40.0	43.0	45.0	49.0	51.0	C
GSH1297	NP	4.5	449917.0	4799463.0	1204.8	G_WTG15	6518.7	31.2	31.3	31.3	31.3	31.3	40.0	43.0	45.0	49.0	51.0	C
GSH1598	NP	4.5	449937.0	4803090.0	735.6	G_WTG12	9417.4	36.9	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH1583	NP	4.5	449944.0	4801637.0	1069.1	G_WTG14	8178.2	34.6	34.8	34.8	34.8	34.8	40.0	43.0	45.0	49.0	51.0	C
GSH1419	NP	4.5	449979.0	4790099.0	845.0	G_WTG68	6620.4	35.1	35.3	35.3	35.3	35.3	40.0	43.0	45.0	49.0	51.0	C
GSH1418	NP	4.5	450000.0	4790292.0	704.4	G_WTG68	6467.5	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH1594	NP	4.5	450011.0	4802721.0	980.5	G_WTG12	9060.3	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH1585	NP	4.5	450058.0	4801625.0	1183.0	G_WTG14	8104.5	34.0	34.2	34.2	34.2	34.2	40.0	43.0	45.0	49.0	51.0	C
GSH1584	NP	4.5	450063.0	4801592.0	1188.4	G_WTG14	8074.3	34.0	34.1	34.1	34.1	34.1	40.0	43.0	45.0	49.0	51.0	C
GSH2244	NP	4.5	450076.0	4801634.0	1201.0	G_WTG14	8102.1	34.0	34.1	34.1	34.1	34.1	40.0	43.0	45.0	49.0	51.0	C

Noise Impact Summary Table

Point of Reception ID	Description	Height	UTM Coordinates		Distance to Nearest Project Turbine (m)	Nearest Project Turbine ID	Distance to Project Transformer Substation (m)	Calculated Sound Level at Selected Wind Speeds (dBA)					Sound Level Limit (dBA)					Compliance Test
			X	Y				6	7	8	9	10	6	7	8	9	10	
GSH1586	NP	4.5	450077.0	4801635.0	1202.1	G_WTG14	8102.3	34.0	34.1	34.1	34.1	34.1	40.0	43.0	45.0	49.0	51.0	C
GSH2242	NP	4.5	450081.0	4801634.0	1206.0	G_WTG14	8099.3	33.9	34.1	34.1	34.1	34.1	40.0	43.0	45.0	49.0	51.0	C
GSH1599	NP	4.5	450121.0	4803517.0	900.1	G_WTG12	9706.3	37.1	37.2	37.2	37.2	37.2	40.0	43.0	45.0	49.0	51.0	C
GSH1588	NP	4.5	450148.0	4802369.0	1244.0	G_WTG13	8687.2	34.4	34.6	34.6	34.6	34.6	40.0	43.0	45.0	49.0	51.0	C
GSH1581	NP	4.5	450182.0	4801079.0	1144.4	G_WTG15	7584.1	33.3	33.4	33.4	33.4	33.4	40.0	43.0	45.0	49.0	51.0	C
GSH1578	NP	4.5	450196.0	4801119.0	1178.3	G_WTG15	7608.8	33.2	33.4	33.4	33.4	33.4	40.0	43.0	45.0	49.0	51.0	C
GSH1579	NP	4.5	450205.0	4801132.0	1193.1	G_WTG15	7614.3	33.2	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH2241	NP	4.5	450209.0	4801760.0	1340.9	G_WTG14	8135.5	33.5	33.6	33.6	33.6	33.6	40.0	43.0	45.0	49.0	51.0	C
GSH1596	NP	4.5	450260.0	4802750.0	1171.5	G_WTG12	8963.4	34.8	35.0	35.0	35.0	35.0	40.0	43.0	45.0	49.0	51.0	C
GSH1561	NP	4.5	450288.0	4799607.0	1355.9	G_WTG15	6366.2	30.9	31.1	31.1	31.1	31.1	40.0	43.0	45.0	49.0	51.0	C
GSH2361	NP	4.5	450291.0	4802770.0	1189.1	G_WTG12	8966.2	34.8	34.9	34.9	34.9	34.9	40.0	43.0	45.0	49.0	51.0	C
GSH1590	NP	4.5	450399.0	4801516.0	1527.8	G_WTG14	7827.8	-	-	-	-	-	-	-	-	-	-	-
GSH1376	NP	4.5	450461.0	4793490.0	713.4	G_WTG81	4324.9	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH1573	NP	4.5	450466.0	4800782.0	1283.7	G_WTG15	7178.0	32.0	32.2	32.2	32.2	32.2	40.0	43.0	45.0	49.0	51.0	C
GSH1562	NP	4.5	450472.0	4799714.0	1447.1	G_WTG15	6325.7	30.8	30.9	30.9	30.9	30.9	40.0	43.0	45.0	49.0	51.0	C
GSH1377	NP	4.5	450502.0	4793501.0	721.5	G_WTG81	4282.5	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH2228	NP	4.5	450504.0	4799641.0	1512.5	G_WTG15	6249.3	-	-	-	-	-	-	-	-	-	-	-
GSH1563	NP	4.5	450531.0	4799604.0	1555.2	G_WTG15	6203.6	-	-	-	-	-	-	-	-	-	-	-
GSH1568	NP	7.5	450653.0	4799892.0	1532.2	G_WTG15	6349.8	-	-	-	-	-	-	-	-	-	-	-
GSH1427	NP	4.5	450683.0	4789376.0	1324.2	G_WTG68	6732.1	31.2	31.3	31.3	31.3	31.3	40.0	43.0	45.0	49.0	51.0	C
GSH1550	NP	4.5	450736.0	4798244.0	1629.5	G_WTG31	5087.8	-	-	-	-	-	-	-	-	-	-	-
GSH1540	NP	4.5	450770.0	4797603.0	1598.8	G_WTG31	4661.4	-	-	-	-	-	-	-	-	-	-	-
GSH1558	NP	4.5	450782.0	4798700.0	1733.4	G_WTG31	5367.4	-	-	-	-	-	-	-	-	-	-	-
GSH1543	NP	4.5	450784.0	4797512.0	1606.3	G_WTG31	4597.4	-	-	-	-	-	-	-	-	-	-	-
GSH1556	NP	4.5	450788.0	4798464.0	1636.6	G_WTG31	5197.9	-	-	-	-	-	-	-	-	-	-	-
GSH1542	NP	4.5	450824.0	4797565.0	1554.5	G_WTG31	4595.4	-	-	-	-	-	-	-	-	-	-	-
GSH1569	NP	4.5	450826.0	4799522.0	1849.6	G_WTG15	5952.3	-	-	-	-	-	-	-	-	-	-	-
GSH1428	NP	7.5	450862.0	4789245.0	1478.7	G_WTG68	6740.0	30.9	31.0	31.0	31.0	31.0	40.0	43.0	45.0	49.0	51.0	C
GSH1551	NP	4.5	450884.0	4798279.0	1492.4	G_WTG31	5001.3	30.9	31.0	31.0	31.0	31.0	40.0	43.0	45.0	49.0	51.0	C
GSH1539	NP	4.5	450942.0	4796645.0	1422.9	G_WTG71	4020.2	33.1	33.2	33.2	33.2	33.2	40.0	43.0	45.0	49.0	51.0	C
GSH1532	NP	7.5	451001.0	4796251.0	1100.6	G_WTG71	3808.7	34.5	34.6	34.6	34.6	34.6	40.0	43.0	45.0	49.0	51.0	C
GSH2373	NP	4.5	451005.0	4798141.0	1346.6	G_WTG31	4818.8	31.7	31.8	31.8	31.8	31.8	40.0	43.0	45.0	49.0	51.0	C
GSH1530	NP	4.5	451124.0	4795721.0	743.6	G_WTG71	3532.3	35.8	35.9	35.9	35.9	35.9	40.0	43.0	45.0	49.0	51.0	C
GSH1514	NP	4.5	451128.0	4794533.0	1038.3	G_WTG81	3445.3	34.8	35.0	35.0	35.0	35.0	40.0	43.0	45.0	49.0	51.0	C
GSH1519	NP	4.5	451133.0	4794971.0	917.4	G_WTG71	3423.6	35.2	35.3	35.3	35.3	35.3	40.0	43.0	45.0	49.0	51.0	C
GSH1523	NP	4.5	451143.0	4795331.0	736.4	G_WTG71	3441.7	35.9	36.1	36.1	36.1	36.1	40.0	43.0	45.0	49.0	51.0	C
GSH1535	NP	4.5	451187.0	4796239.0	956.3	G_WTG71	3631.2	35.0	35.1	35.1	35.1	35.1	40.0	43.0	45.0	49.0	51.0	C
GSH1723	NP	4.5	451261.0	4807323.0	1709.9	G_WTG02	12869.0	-	-	-	-	-	-	-	-	-	-	-
GSH1521	NP	4.5	451281.0	4795140.0	697.1	G_WTG71	3284.5	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH2372	NP	4.5	451284.0	4795146.0	691.2	G_WTG71	3282.0	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH2371	NP	4.5	451311.0	4795103.0	696.0	G_WTG71	3251.9	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH1511	NP	4.5	451313.0	4794212.0	1148.3	G_WTG81	3311.1	34.9	35.0	35.0	35.0	35.0	40.0	43.0	45.0	49.0	51.0	C
GSH1434	NP	4.5	451325.0	4789474.0	1432.8	G_WTG68	6300.1	31.2	31.3	31.3	31.3	31.3	40.0	43.0	45.0	49.0	51.0	C
GSH1435	NP	4.5	451343.0	4789362.0	1538.3	G_WTG68	6387.5	-	-	-	-	-	-	-	-	-	-	-
GSH1489	NP	4.5	451390.0	4792571.0	682.3	G_WTG70	3919.8	38.1	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH1500	NP	4.5	451396.0	4793534.0	931.1	G_WTG82	3435.3	36.0	36.1	36.1	36.1	36.1	40.0	43.0	45.0	49.0	51.0	C
GSH1506	NP	4.5	451405.0	4793696.0	1002.1	G_WTG82	3366.6	35.7	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH1515	NP	4.5	451423.0	4794636.0	1004.8	G_WTG71	3142.2	34.9	35.1	35.1	35.1	35.1	40.0	43.0	45.0	49.0	51.0	C
GSH2370	NP	4.5	451423.0	4794638.0	1003.0	G_WTG71	3142.0	34.9	35.1	35.1	35.1	35.1	40.0	43.0	45.0	49.0	51.0	C
GSH1728	NP	4.5	451440.0	4806938.0	1477.4	G_WTG02	12451.2	30.6	30.8	30.8	30.8	30.8	40.0	43.0	45.0	49.0	51.0	C
GSH1494	NP	4.5	451473.0	4793154.0	769.1	G_WTG82	3534.2	37.2	37.4	37.4	37.4	37.4	40.0	43.0	45.0	49.0	51.0	C
GSH1493	NP	4.5	451480.0	4793090.0	764.0	G_WTG82	3559.9	37.4	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH1492	NP	4.5	451488.0	4793057.0	759.1	G_WTG82	3569.7	37.4	37.6	37.6	37.6	37.6	40.0	43.0	45.0	49.0	51.0	C
GSH1516	NP	4.5	451488.0	4794619.0	995.0	G_WTG71	3078.8	35.0	35.1	35.1	35.1	35.1	40.0	43.0	45.0	49.0	51.0	C
GSH1491	NP	4.5	451490.0	4793025.0	761.5	G_WTG82	3584.5	37.5	37.6	37.6	37.6	37.6	40.0	43.0	45.0	49.0	51.0	C
GSH1505	NP	4.5	451493.0	4793832.0	1016.4	G_WTG82	3237.7	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH1733	NP	4.5	451495.0	4806598.0	1271.4	G_WTG02	12108.3	32.3	32.5	32.5	32.5	32.5	40.0	43.0	45.0	49.0	51.0	C
GSH1800	NP	4.5	451496.0	4799880.0	1641.0	G_WTG34	5859.3	-	-	-	-	-	-	-	-	-	-	-
GSH1739	NP	4.5	451505.0	4806093.0	861.4	G_WTG03	11617.8	35.5	35.6	35.6	35.6	35.6	40.0	43.0	45.0	49.0	51.0	C
GSH1517	NP	4.5	451513.0	4794653.0	954.4	G_WTG71	3051.1	35.1	35.2	35.2	35.2	35.2	40.0	43.0	45.0	49.0	51.0	C
GSH1440	NP	4.5	451545.0	4789493.0	1531.6	G_WTG46	6173.6	-	-	-	-	-	-	-	-	-	-	-
GSH1726	NP	4.5	451610.0	4807028.0	1655.5	G_WTG02	12497.2	-	-	-	-	-	-	-	-	-	-	-
GSH1504	NP	4.5	451614.0	4793578.0	762.8	G_WTG82	3217.9	36.8	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH1724	NP	4.5	451638.0	4807219.0	1820.7	G_WTG02	12676.4	-	-	-	-	-	-	-	-	-	-	-
GSH1507	NP	4.5	451673.0	4793697.0	792.8	G_WTG82	3116.9	36.6	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH1751	NP	4.5	451686.0	4805313.0	636.8	G_WTG03	10817.6	38.2	38.4	38.4	38.4	38.4	40.0	43.0	45.0	49.0	51.0	C
GSH1734	NP	4.5	451719.0	4806428.0	1258.9	G_WTG03	11888.5	32.4	32.5	32.5	32.5	32.5	40.0	43.0	45.0	49.0	51.0	C
GSH1802	NP	4.5	451890.0	4799945.0	1273.5	G_WTG34	5721.0	32.5	32.7	32.7	32.7	32.7	40.0	43.0	45.0	49.0	51.0	C
GSH1803	NP	4.5	451915.0	4799802.0	1214.8	G_WTG34	5583.0	32.7	32.8	32.8	32.8	32.8	40.0	43.0	45.0	49.0	51.0	C
GSH1755	NP	4.5	451933.0	4804437.0	657.8	G_WTG05	9907.5	37.4	37.6	37.6	37.6	37.6	40.0	43.0	45.0	49.0	51.0	C
GSH2256	NP	4.5	451980.0	4804591.0	680.5	G_WTG05	10043.9	37.0	37.2	37.2	37.2	37.2	40.0	43.0	45.0	49.0	51.0	C
GSH1759	NP	4.5	451987.0	4803780.0	784.1	G_WTG06	9260.4	35.9	36.0	36.0	36.0	36.0	40.0	43.0	45.0	49.0	51.0	C
GSH1760	NP	4.5	452000.0	4803776.0	797.0	G_WTG06	9253.0	35.8	35.9	35.9	35.9	35.9	40.0	43.0	45.0	49.0	51.0	C
GSH2350	NP	4.5	452069.0	4803433.0	929.3	G_WTG06	8904.3	34.2	34.4	34.4	34.4	34.4	40.0	43.0	45.0	49.0	51.0	C
GSH1769	NP	4.5	452086.0	4803053.0	1137.4	G_WTG06	8535.2	32.7	32.8	32.8	32.8	32.8	40.0	43.0	45.0	49.0	51.0	C
GSH1761	NP	4.5	452107.0	4803792.0	904.3	G_WTG06	9239.5	34.9	35.1	35.1	35.1	35.1	40.0	43.0	45.0	49.0	51.0	C
GSH1776	NP	4.5	452128.0	4802506.0	1566.3	G_WTG06	8000.3	-	-	-	-	-	-	-	-	-	-	-
GSH1461	NP	4.5	452178.0	4789465.0	1158.7	G_WTG46	5916.6	31.6	31.8	31.8	31.8	31.8	40.0	43.0	45.0	49.0	51.0	C
GSH1786	NP	4.5	452232.0	4801322.0	1161.0	G_WTG73	6845.5	32.1	32.2	32.2	32.2	32.2	40.0	43.0	45.0	49.0	51.0	C
GSH1779	NP	4.5	452283.0	4802059.0	1660.8	G_WTG73	7527.3	-	-	-	-	-	-	-	-	-	-	-
GSH1777	NP	4.5	452313.0	4802512.0	1677.7	G_WTG06	7951.9	-	-	-	-	-	-	-	-	-	-	-
GSH1792	NP	4.5	452325.0	4800984.0	922.4	G_WTG73	6496.1	33.5	33.6	33.6	33.6	33.6	40.0	43.0	45.0	49.0	51.0	C
GSH1783	NP	4.5	452328.0	4801730.0	1368.3	G_WTG73	7200.3	31.2	31.4	31.4	31.4	31.4	40.0	43.0	45.0	49.0	51.0	C
GSH1462	NP	4.5	452339.0	4789605.0	964.7	G_WTG46	5724.4	32.8	32.9	32.9	32.9	32.9	40.0	43.0	45.0	49.0	51.0	C
GSH1807	NP	4.5	452364.0	4799975.0	845.7	G_WTG34	5543.7	35.2	35.4	35.4	35.4	35.4	40.0	43.0	45.0	49.0	51.0	C

Noise Impact Summary Table

Point of Reception ID	Description	Height	UTM Coordinates		Distance to Nearest Project Turbine (m)	Nearest Project Turbine ID	Distance to Project Transformer Substation (m)	Calculated Sound Level at Selected Wind Speeds (dBA)					Sound Level Limit (dBA)					Compliance Test
			X	Y				6	7	8	9	10	6	7	8	9	10	
GSH1808	NP	4.5	452449.0	4799790.0	693.8	G_WTG34	5340.1	36.3	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH1465	NP	4.5	452556.0	4789627.0	884.6	G_WTG46	5623.3	33.3	33.4	33.4	33.4	33.4	40.0	43.0	45.0	49.0	51.0	C
GSH1795	NP	4.5	452605.0	4800407.0	642.8	G_WTG73	5858.4	36.8	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH1466	NP	4.5	452700.0	4789647.0	853.0	G_WTG46	5554.9	33.5	33.7	33.7	33.7	33.7	40.0	43.0	45.0	49.0	51.0	C
GSH1830	NP	4.5	452751.0	4798768.0	880.6	G_WTG34	4283.7	36.2	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH1837	NP	4.5	452804.0	4798234.0	558.9	G_WTG31	3781.2	38.0	38.1	38.1	38.1	38.1	40.0	43.0	45.0	49.0	51.0	C
GSH1471	NP	4.5	452824.0	4789565.0	943.3	G_WTG46	5592.6	32.8	32.9	32.9	32.9	32.9	40.0	43.0	45.0	49.0	51.0	C
GSH1831	NP	4.5	452900.0	4798934.0	672.0	G_WTG34	4376.3	37.2	37.4	37.4	37.4	37.4	40.0	43.0	45.0	49.0	51.0	C
GSH1845	NP	4.5	452978.0	4797983.0	645.2	G_WTG31	3478.4	37.4	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH1849	NP	4.5	453086.0	4797320.0	637.1	G_WTG32	2845.9	38.1	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH1851	NP	4.5	453105.0	4797378.0	685.8	G_WTG32	2886.1	37.8	37.9	37.9	37.9	37.9	40.0	43.0	45.0	49.0	51.0	C
GSH1856	NP	4.5	453171.0	4796987.0	618.2	G_WTG32	2518.7	38.5	38.6	38.6	38.6	38.6	40.0	43.0	45.0	49.0	51.0	C
GSH1871	NP	4.5	453272.0	4795396.0	620.3	G_WTG74	1382.2	38.9	39.0	39.0	39.0	39.0	40.0	43.0	45.0	49.0	51.0	C
GSH1479	NP	4.5	453316.0	4789759.0	964.2	G_WTG46	5271.6	32.8	33.0	33.0	33.0	33.0	40.0	43.0	45.0	49.0	51.0	C
GSH1879	NP	4.5	453350.0	4794838.0	839.4	G_WTG74	1206.3	36.9	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH1859	NP	4.5	453365.0	4796520.0	729.0	G_WTG35	2024.2	38.3	38.4	38.4	38.4	38.4	40.0	43.0	45.0	49.0	51.0	C
GSH1839	NP	4.5	453407.0	4798162.0	1028.3	G_WTG65	3474.4	35.6	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH1868	NP	4.5	453418.0	4795994.0	692.2	G_WTG74	1590.1	38.8	38.9	38.9	38.9	38.9	40.0	43.0	45.0	49.0	51.0	C
GSH1883	NP	4.5	453421.0	4794949.0	708.8	G_WTG74	1136.4	39.2	39.2	39.2	39.2	39.2	40.0	43.0	45.0	49.0	51.0	C
GSH1891	NP	4.5	453494.0	4794358.0	894.6	G_WTG76	1184.1	37.1	37.2	37.2	37.2	37.2	40.0	43.0	45.0	49.0	51.0	C
GSH1895	NP	4.5	453511.0	4793740.0	626.0	G_WTG76	1548.2	38.7	38.9	38.9	38.9	38.9	40.0	43.0	45.0	49.0	51.0	C
GSH1884	NP	4.5	453528.0	4794481.0	962.2	G_WTG76	1103.2	37.1	37.2	37.2	37.2	37.2	40.0	43.0	45.0	49.0	51.0	C
GSH1914	NP	4.5	453550.0	4792409.0	1105.8	G_WTG48	2670.4	36.6	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH1900	NP	4.5	453620.0	4793474.0	579.6	G_WTG76	1691.1	39.2	39.3	39.3	39.3	39.3	40.0	43.0	45.0	49.0	51.0	C
GSH1909	NP	4.5	453630.0	4792937.0	861.6	G_WTG48	2154.7	37.8	38.0	38.0	38.0	38.0	40.0	43.0	45.0	49.0	51.0	C
GSH1843	NP	4.5	453664.0	4797983.0	1068.0	G_WTG65	3225.8	35.2	35.3	35.3	35.3	35.3	40.0	43.0	45.0	49.0	51.0	C
GSH1911	NP	4.5	453737.0	4792690.0	861.8	G_WTG49	2340.6	37.3	37.4	37.4	37.4	37.4	40.0	43.0	45.0	49.0	51.0	C
GSH1919	NP	4.5	453747.0	4792041.0	980.4	G_WTG77	2954.6	35.9	36.0	36.0	36.0	36.0	40.0	43.0	45.0	49.0	51.0	C
GSH1934	NP	4.5	453781.0	4789819.0	1278.5	G_WTG46	5122.7	31.1	31.2	31.2	31.2	31.2	40.0	43.0	45.0	49.0	51.0	C
GSH1937	NP	4.5	453881.0	4789655.0	1453.0	G_WTG46	5271.2	30.0	30.1	30.1	30.1	30.1	40.0	43.0	45.0	49.0	51.0	C
GSH1941	NP	4.5	453894.0	4789720.0	1427.0	G_WTG46	5205.1	30.2	30.3	30.3	30.3	30.3	40.0	43.0	45.0	49.0	51.0	C
GSH1938	NP	4.5	453904.0	4789661.0	1468.3	G_WTG46	5262.3	29.9	30.1	30.1	30.1	30.1	40.0	43.0	45.0	49.0	51.0	C
GSH1924	NP	4.5	453908.0	4791640.0	826.9	G_WTG77	3306.9	35.5	35.6	35.6	35.6	35.6	40.0	43.0	45.0	49.0	51.0	C
GSH1929	NP	4.5	454030.0	4791272.0	844.7	G_WTG77	3648.9	34.7	34.9	34.9	34.9	34.9	40.0	43.0	45.0	49.0	51.0	C
GSH2118	NP	4.5	454045.0	4798011.0	981.5	G_WTG65	3169.5	34.7	34.8	34.8	34.8	34.8	40.0	43.0	45.0	49.0	51.0	C
GSH1943	NP	4.5	454068.0	4790392.0	1221.5	G_WTG77	4517.2	32.1	32.2	32.2	32.2	32.2	40.0	43.0	45.0	49.0	51.0	C
GSH1933	NP	4.5	454141.0	4791000.0	984.0	G_WTG77	3904.9	33.5	33.6	33.6	33.6	33.6	40.0	43.0	45.0	49.0	51.0	C
GSH1947	NP	4.5	454224.0	4789891.0	1642.1	G_WTG46	5002.9	-	-	-	-	-	-	-	-	-	-	-
GSH2128	NP	4.5	454293.0	4800236.0	627.8	G_WTG67	5359.6	36.8	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH1923	NP	4.5	454327.0	4791934.0	940.4	G_WTG49	2957.7	35.0	35.1	35.1	35.1	35.1	40.0	43.0	45.0	49.0	51.0	C
GSH2129	NP	4.5	454384.0	4800243.0	686.5	G_WTG67	5362.9	36.1	36.2	36.2	36.2	36.2	40.0	43.0	45.0	49.0	51.0	C
GSH2120	NP	4.5	454401.0	4798169.0	909.4	G_WTG65	3289.8	34.4	34.5	34.5	34.5	34.5	40.0	43.0	45.0	49.0	51.0	C
GSH2131	NP	4.5	454456.0	4800122.0	650.6	G_WTG67	5240.1	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH2125	NP	4.5	454554.0	4798816.0	568.0	G_WTG65	3933.1	37.4	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH2305	NP	4.5	454802.0	4799768.0	849.2	G_WTG67	4891.3	34.7	34.8	34.8	34.8	34.8	40.0	43.0	45.0	49.0	51.0	C
GSH2108	NP	4.5	454897.0	4797509.0	1212.5	G_WTG35	2648.2	32.7	32.8	32.8	32.8	32.8	40.0	43.0	45.0	49.0	51.0	C
GSH2095	NP	4.5	454929.0	4796717.0	847.4	G_WTG35	1871.8	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2121	NP	4.5	455028.0	4798430.0	1159.3	G_WTG65	3578.5	32.3	32.4	32.4	32.4	32.4	40.0	43.0	45.0	49.0	51.0	C
GSH2115	NP	4.5	455087.0	4797752.0	1520.4	G_WTG35	2918.0	-	-	-	-	-	-	-	-	-	-	-
GSH2080	NP	4.5	455210.0	4795939.0	1041.7	G_WTG75	1242.5	37.1	37.1	37.1	37.1	37.1	40.0	43.0	45.0	49.0	51.0	C
GSH2097	NP	4.5	455276.0	4796786.0	1200.7	G_WTG35	2035.0	33.7	33.8	33.8	33.8	33.8	40.0	43.0	45.0	49.0	51.0	C
GSH2104	NP	4.5	455276.0	4797249.0	1350.4	G_WTG35	2473.4	32.4	32.5	32.5	32.5	32.5	40.0	43.0	45.0	49.0	51.0	C
GSH2053	NP	4.5	455299.0	4794758.0	623.0	G_WTG75	754.0	39.2	39.3	39.3	39.3	39.3	40.0	43.0	45.0	49.0	51.0	C
GSH2086	NP	4.5	455345.0	4796371.0	1277.6	G_WTG35	1684.6	34.7	34.8	34.8	34.8	34.8	40.0	43.0	45.0	49.0	51.0	C
GSH2072	NP	4.5	455414.0	4795568.0	879.4	G_WTG75	1098.4	37.9	38.0	38.0	38.0	38.0	40.0	43.0	45.0	49.0	51.0	C
GSH2133	NP	4.5	455415.0	4800278.0	1567.7	G_WTG67	5463.2	-	-	-	-	-	-	-	-	-	-	-
GSH2075	NP	4.5	455456.0	4795732.0	1020.4	G_WTG75	1237.7	36.8	36.9	36.9	36.9	36.9	40.0	43.0	45.0	49.0	51.0	C
GSH2059	NP	4.5	455493.0	4794847.0	780.1	G_WTG75	938.2	37.9	37.9	37.9	37.9	37.9	40.0	43.0	45.0	49.0	51.0	C
GSH2054	NP	4.5	455538.0	4794770.0	843.1	G_WTG75	989.0	37.1	37.2	37.2	37.2	37.2	40.0	43.0	45.0	49.0	51.0	C
GSH2061	NP	4.5	455547.0	4795139.0	825.5	G_WTG75	1024.1	38.5	38.5	38.5	38.5	38.5	40.0	43.0	45.0	49.0	51.0	C
GSH2055	NP	4.5	455566.0	4794774.0	868.8	G_WTG75	1016.4	35.5	35.6	35.6	35.6	35.6	40.0	43.0	45.0	49.0	51.0	C
GSH2044	NP	4.5	455576.0	4793695.0	683.4	G_WTG50	1566.1	36.6	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH2046	NP	4.5	455582.0	4793651.0	661.9	G_WTG50	1603.5	36.8	36.9	36.9	36.9	36.9	40.0	43.0	45.0	49.0	51.0	C
GSH2047	NP	4.5	455583.0	4793589.0	629.3	G_WTG50	1652.3	37.0	37.2	37.2	37.2	37.2	40.0	43.0	45.0	49.0	51.0	C
GSH2034	NP	4.5	455618.0	4793828.0	802.7	G_WTG50	1497.3	35.8	35.9	35.9	35.9	35.9	40.0	43.0	45.0	49.0	51.0	C
GSH2037	NP	4.5	455626.0	4793788.0	781.5	G_WTG50	1531.3	35.9	36.0	36.0	36.0	36.0	40.0	43.0	45.0	49.0	51.0	C
GSH2038	NP	4.5	455628.0	4793766.0	768.6	G_WTG50	1548.5	35.9	36.0	36.0	36.0	36.0	40.0	43.0	45.0	49.0	51.0	C
GSH2033	NP	4.5	455631.0	4793436.0	613.6	G_WTG50	1802.8	37.1	37.2	37.2	37.2	37.2	40.0	43.0	45.0	49.0	51.0	C
GSH2039	NP	4.5	455631.0	4793746.0	758.2	G_WTG50	1565.0	36.0	36.1	36.1	36.1	36.1	40.0	43.0	45.0	49.0	51.0	C
GSH2021	NP	4.5	455647.0	4792690.0	840.2	G_WTG50	2449.5	35.0	35.2	35.2	35.2	35.2	40.0	43.0	45.0	49.0	51.0	C
GSH2136	NP	4.5	455650.0	4800444.0	1848.3	G_WTG67	5667.8	-	-	-	-	-	-	-	-	-	-	-
GSH2029	NP	4.5	455702.0	4793223.0	663.7	G_WTG50	2017.4	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH2017	NP	4.5	455739.0	4792365.0	1144.3	G_WTG50	2782.2	32.9	33.0	33.0	33.0	33.0	40.0	43.0	45.0	49.0	51.0	C
GSH2009	NP	4.5	455756.0	4792063.0	1403.4	G_WTG49	3064.8	31.6	31.7	31.7	31.7	31.7	40.0	43.0	45.0	49.0	51.0	C
GSH2000	NP	4.5	455800.0	4791522.0	1790.4	G_WTG49	3583.9	-	-	-	-	-	-	-	-	-	-	-
GSH2005	NP	4.5	455807.0	4791726.0	1651.5	G_WTG49	3395.9	-	-	-	-	-	-	-	-	-	-	-
GSH2022	NP	4.5	455810.0	4792813.0	895.9	G_WTG50	2420.4	34.3	34.4	34.4	34.4	34.4	40.0	43.0	45.0	49.0	51.0	C
GSH2137	NP	4.5	455854.0	4800248.0	1974.6	G_WTG67	5520.0	-	-	-	-	-	-	-	-	-	-	-
GSH2226	NP	4.5	455854.0	4800293.0	1987.4	G_WTG67	5563.8	-	-	-	-	-	-	-	-	-	-	-
GSH2014	NP	4.5	456013.0	4792045.0	1565.2	G_WTG50	3190.3	-	-	-	-	-	-	-	-	-	-	-
GSH759	PR	4.5	439153.0	4788974.0	773.7	G_WTG56	16497.0	38.1	38.2	38.2	38.2	38.2	-	-	-	-	-	-
GSH797	PR	4.5	439548.0	4789871.0	460.9	G_WTG55	15822.2	40.9	41.0	41.0	41.0	41.0	-	-	-	-	-	-
GSH771	PR	4.5	439692.0	4787986.0	604.2	G_WTG52	16385.6	38.2	38.2	38.2	38.2	38.2	-	-	-	-	-	-
GSH880	PR	4.5	441343.0	4791958.0	502.7	G_WTG83	13532.3	39.4	39.5	39.5	39.5	39.5	-	-	-	-	-	-
GSH888	PR	4.5	441465.0	4791444.0	487.5	G_WTG79	13534.6	39.6	39.8	39.8	39.8	39.8	-	-	-	-	-	-

Noise Impact Summary Table

Point of Reception ID	Description	Height	UTM Coordinates		Distance to Nearest Project Turbine (m)	Nearest Project Turbine ID	Distance to Project Transformer Substation (m)	Calculated Sound Level at Selected Wind Speeds (dBA)					Sound Level Limit (dBA)					Compliance Test
			X	Y				6	7	8	9	10	6	7	8	9	10	
GSH891	PR	4.5	441507.0	4790753.0	639.0	G_WTG53	13686.4	37.3	37.4	37.4	37.4	37.4	-	-	-	-	-	-
GSH549	PR	4.5	444903.0	4795827.0	646.2	G_WTG19	9698.5	38.4	38.5	38.5	38.5	38.5	-	-	-	-	-	-
GSH505	PR	4.5	445370.0	4792094.0	833.2	G_WTG36	9599.5	36.8	37.0	37.0	37.0	37.0	-	-	-	-	-	-
GSH504	PR	4.5	445476.0	4792102.0	727.0	G_WTG36	9495.8	37.6	37.7	37.7	37.7	37.7	-	-	-	-	-	-
GSH2225	PR	4.5	445640.0	4791758.0	658.0	G_WTG37	9447.2	39.0	39.1	39.1	39.1	39.1	-	-	-	-	-	-
GSH482	PR	4.5	445658.0	4791230.0	542.6	G_WTG38	9618.1	39.2	39.4	39.4	39.4	39.4	-	-	-	-	-	-
GSH247	PR	4.5	446217.0	4802093.0	613.0	G_WTG09	11023.4	35.9	36.1	36.1	36.1	36.1	-	-	-	-	-	-
GSH354	PR	4.5	447050.0	4795874.0	503.8	G_WTG22	7570.6	39.5	39.6	39.6	39.6	39.6	-	-	-	-	-	-
GSH347	PR	4.5	447126.0	4796046.0	518.5	G_WTG22	7519.9	39.4	39.5	39.5	39.5	39.5	-	-	-	-	-	-
GSH1200	PR	4.5	447755.0	4804428.0	887.0	G_WTG07	11719.9	36.6	36.7	36.7	36.7	36.7	-	-	-	-	-	-
GSH1212	PR	4.5	447994.0	4803552.0	586.0	G_WTG11	10872.3	38.6	38.7	38.7	38.7	38.7	-	-	-	-	-	-
GSH1087	PR	4.5	448088.0	4793098.0	620.8	G_WTG39	6709.2	37.3	37.5	37.5	37.5	37.5	-	-	-	-	-	-
GSH1202	PR	4.5	448105.0	4804620.0	617.3	G_WTG10	11679.9	37.6	37.7	37.7	37.7	37.7	-	-	-	-	-	-
GSH1201	PR	4.5	448122.0	4804561.0	601.4	G_WTG10	11621.3	37.9	38.0	38.0	38.0	38.0	-	-	-	-	-	-
GSH1220	PR	4.5	448162.0	4803315.0	539.3	G_WTG11	10581.9	38.9	39.1	39.1	39.1	39.1	-	-	-	-	-	-
GSH1230	PR	4.5	448252.0	4802066.0	680.8	G_WTG13	9556.7	37.9	38.0	38.0	38.0	38.0	-	-	-	-	-	-
GSH1365	PR	4.5	448825.0	4793293.0	938.7	G_WTG39	5946.9	35.1	35.2	35.2	35.2	35.2	-	-	-	-	-	-
GSH1389	PR	4.5	449404.0	4791861.0	569.3	G_WTG41	5972.4	38.1	38.2	38.2	38.2	38.2	-	-	-	-	-	-
GSH1359	PR	4.5	449445.0	4793859.0	774.8	G_WTG81	5212.0	35.6	35.7	35.7	35.7	35.7	-	-	-	-	-	-
GSH1360	PR	4.5	449459.0	4793863.0	760.3	G_WTG81	5197.5	35.7	35.8	35.8	35.8	35.8	-	-	-	-	-	-
GSH1394	PR	4.5	449644.0	4791574.0	749.7	G_WTG41	5922.1	37.3	37.5	37.5	37.5	37.5	-	-	-	-	-	-
GSH1398	PR	4.5	449718.0	4791624.0	823.2	G_WTG41	5832.8	37.1	37.2	37.2	37.2	37.2	-	-	-	-	-	-
GSH1401	PR	4.5	449867.0	4791093.0	813.5	G_WTG68	6028.7	37.5	37.6	37.6	37.6	37.6	-	-	-	-	-	-
GSH1410	PR	4.5	449873.0	4790670.0	704.5	G_WTG68	6298.7	37.4	37.5	37.5	37.5	37.5	-	-	-	-	-	-
GSH1627	PR	4.5	449897.0	4805604.0	647.9	G_WTG02	11689.5	37.9	38.1	38.1	38.1	38.1	-	-	-	-	-	-
GSH1618	PR	4.5	449940.0	4804807.0	606.9	G_WTG04	10944.9	39.0	39.2	39.2	39.2	39.2	-	-	-	-	-	-
GSH1412	PR	4.5	449975.0	4790684.0	602.1	G_WTG68	6213.8	37.9	38.1	38.1	38.1	38.1	-	-	-	-	-	-
GSH2362	PR	4.5	449977.0	4803374.0	737.4	G_WTG12	9646.8	37.3	37.4	37.4	37.4	37.4	-	-	-	-	-	-
GSH1606	PR	4.5	450209.0	4803972.0	593.0	G_WTG72	10074.9	39.0	39.1	39.1	39.1	39.1	-	-	-	-	-	-
GSH1544	PR	4.5	451132.0	4797733.0	1219.0	G_WTG31	4454.6	32.7	32.8	32.8	32.8	32.8	-	-	-	-	-	-
GSH1525	PR	4.5	451223.0	4795488.0	626.8	G_WTG71	3386.9	36.9	37.0	37.0	37.0	37.0	-	-	-	-	-	-
GSH1524	PR	4.5	451250.0	4795453.0	604.4	G_WTG71	3354.3	37.1	37.2	37.2	37.2	37.2	-	-	-	-	-	-
GSH1743	PR	4.5	451257.0	4805829.0	511.3	G_WTG03	11432.3	39.5	39.6	39.6	39.6	39.6	-	-	-	-	-	-
GSH1742	PR	4.5	451265.0	4805937.0	614.5	G_WTG03	11533.5	38.3	38.4	38.4	38.4	38.4	-	-	-	-	-	-
GSH1748	PR	4.5	451478.0	4805493.0	446.9	G_WTG03	11047.4	40.1	40.3	40.3	40.3	40.3	-	-	-	-	-	-
GSH1483	PR	4.5	451591.0	4792148.0	753.3	G_WTG70	4033.3	37.9	38.1	38.1	38.1	38.1	-	-	-	-	-	-
GSH1752	PR	4.5	451756.0	4804847.0	511.2	G_WTG05	10349.9	39.3	39.4	39.4	39.4	39.4	-	-	-	-	-	-
GSH1758	PR	4.5	451913.0	4804213.0	733.6	G_WTG05	9697.1	37.3	37.4	37.4	37.4	37.4	-	-	-	-	-	-
GSH1810	PR	4.5	452797.0	4799872.0	431.4	G_WTG34	5289.9	39.9	40.0	40.0	40.0	40.0	-	-	-	-	-	-
GSH1848	PR	4.5	452856.0	4797283.0	434.9	G_WTG32	2940.9	40.4	40.5	40.5	40.5	40.5	-	-	-	-	-	-
GSH1876	PR	4.5	453384.0	4795194.0	579.7	G_WTG74	1212.1	39.6	39.6	39.6	39.6	39.6	-	-	-	-	-	-
GSH1818	PR	4.5	453469.0	4800150.0	588.3	G_WTG73	5378.0	39.7	39.9	39.9	39.9	39.9	-	-	-	-	-	-
GSH1825	PR	4.5	453507.0	4800005.0	538.1	G_WTG67	5228.3	40.3	40.5	40.5	40.5	40.5	-	-	-	-	-	-
GSH1904	PR	4.5	453574.0	4793256.0	739.8	G_WTG76	1900.0	38.6	38.8	38.8	38.8	38.8	-	-	-	-	-	-
GSH1898	PR	4.5	453707.0	4793848.0	444.3	G_WTG76	1338.2	40.2	40.3	40.3	40.3	40.3	-	-	-	-	-	-
GSH2071	PR	4.5	455292.0	4795533.0	764.3	G_WTG75	982.4	39.0	39.1	39.1	39.1	39.1	-	-	-	-	-	-
GSH2028	PR	4.5	455615.0	4793122.0	594.0	G_WTG50	2055.1	37.3	37.4	37.4	37.4	37.4	-	-	-	-	-	-
GSH2424	VNP	4.5	436477.0	4787726.0	1097.6	G_WTG61	19443.5	33.8	33.9	33.9	33.9	33.9	40.0	43.0	45.0	49.0	51.0	C
GSH2425	VNP	4.5	436520.0	4787936.0	934.1	G_WTG61	19327.1	34.8	35.0	35.0	35.0	35.0	40.0	43.0	45.0	49.0	51.0	C
GSH2423	VNP	4.5	436604.0	4787754.0	986.5	G_WTG61	19315.2	34.7	34.8	34.8	34.8	34.8	40.0	43.0	45.0	49.0	51.0	C
GSH2427	VNP	4.5	436628.0	4788178.0	722.9	G_WTG61	19140.2	36.6	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH2430	VNP	4.5	436800.0	4789342.0	759.4	G_WTG60	18599.9	37.0	37.1	37.1	37.1	37.1	40.0	43.0	45.0	49.0	51.0	C
GSH2433	VNP	4.5	436817.0	4789801.0	1015.8	G_WTG60	18452.0	35.3	35.4	35.4	35.4	35.4	40.0	43.0	45.0	49.0	51.0	C
GSH2428	VNP	4.5	436831.0	4788946.0	672.0	G_WTG61	18692.3	38.7	38.8	38.8	38.8	38.8	40.0	43.0	45.0	49.0	51.0	C
GSH2429	VNP	4.5	436867.0	4789121.0	638.0	G_WTG60	18603.2	38.4	38.6	38.6	38.6	38.6	40.0	43.0	45.0	49.0	51.0	C
GSH2422	VNP	4.5	436905.0	4787494.0	987.8	G_WTG62	19134.6	35.3	35.4	35.4	35.4	35.4	40.0	43.0	45.0	49.0	51.0	C
GSH2435	VNP	4.5	436905.0	4789846.0	994.4	G_WTG60	18355.1	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2432	VNP	4.5	436916.0	4789636.0	828.0	G_WTG60	18403.3	36.6	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH2434	VNP	4.5	436993.0	4790022.0	1096.7	G_WTG60	18222.7	35.5	35.6	35.6	35.6	35.6	40.0	43.0	45.0	49.0	51.0	C
GSH2431	VNP	4.5	437052.0	4789605.0	713.9	G_WTG60	18281.9	37.7	37.8	37.8	37.8	37.8	40.0	43.0	45.0	49.0	51.0	C
GSH2426	VNP	4.5	437084.0	4787575.0	793.5	G_WTG62	18938.2	36.9	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH2421	VNP	4.5	437122.0	4787431.0	853.8	G_WTG62	18959.3	36.1	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH2436	VNP	4.5	438851.0	4789724.0	889.4	G_WTG57	16530.1	38.4	38.5	38.5	38.5	38.5	40.0	43.0	45.0	49.0	51.0	C
GSH2441	VNP	4.5	438956.0	4790782.0	562.4	G_WTG84	16129.5	38.8	38.9	38.9	38.9	38.9	40.0	43.0	45.0	49.0	51.0	C
GSH3068	VNP	4.5	438962.0	4789583.0	1001.1	G_WTG58	16469.5	38.0	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH2442	VNP	4.5	439022.0	4791413.0	980.5	G_WTG84	15916.3	34.6	34.7	34.7	34.7	34.7	40.0	43.0	45.0	49.0	51.0	C
GSH2443	VNP	4.5	439163.0	4791115.0	886.6	G_WTG84	15846.9	36.2	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH2445	VNP	4.5	439254.0	4792030.0	1620.2	G_WTG84	15565.1	-	-	-	-	-	-	-	-	-	-	-
GSH2413	VNP	4.5	440712.0	4787971.0	686.1	G_WTG52	15473.0	36.3	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH2926	VNP	4.5	440936.0	4793674.0	1775.8	G_WTG83	13673.0	-	-	-	-	-	-	-	-	-	-	-
GSH2928	VNP	4.5	441119.0	4792468.0	773.3	G_WTG83	13651.7	35.1	35.2	35.2	35.2	35.2	40.0	43.0	45.0	49.0	51.0	C
GSH2929	VNP	4.5	441153.0	4792285.0	679.7	G_WTG83	13651.9	36.3	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH2932	VNP	4.5	441235.0	4792654.0	781.0	G_WTG83	13505.6	34.8	34.9	34.9	34.9	34.9	40.0	43.0	45.0	49.0	51.0	C
GSH3067	VNP	4.5	441275.0	4788022.0	1172.8	G_WTG52	14948.0	32.3	32.4	32.3	32.3	32.3	40.0	43.0	45.0	49.0	51.0	C
GSH2931	VNP	4.5	441315.0	4790996.0	829.5	G_WTG53	13799.2	36.6	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH2923	VNP	4.5	441502.0	4791004.0	646.8	G_WTG53	13617.6	38.0	38.1	38.1	38.1	38.1	40.0	43.0	45.0	49.0	51.0	C
GSH2953	VNP	4.5	441542.0	4787934.0	1453.9	G_WTG52	14752.5	30.8	30.8	30.8	30.8	30.8	40.0	43.0	45.0	49.0	51.0	C
GSH2952	VNP	4.5	441637.0	4787953.0	1539.4	G_WTG52	14659.8	-	-	-	-	-	-	-	-	-	-	-
GSH2912	VNP	4.5	441656.0	4789981.0	1010.7	G_WTG53	13799.4	34.0	34.1	34.1	34.1	34.1	40.0	43.0	45.0	49.0	51.0	C
GSH2911	VNP	4.5	441685.0	4789831.0	1133.2	G_WTG53	13826.4	33.4	33.6	33.6	33.6	33.6	40.0	43.0	45.0	49.0	51.0	C
GSH2412	VNP	4.5	441787.0	4788961.0	1733.8	G_WTG52	14074.9	-	-	-	-	-	-	-	-	-	-	-
GSH2916	VNP	4.5	441865.0	4788189.0	1718.9	G_WTG52	14347.7	-	-	-	-	-	-	-	-	-	-	-
GSH2917	VNP	4.5	441868.0	4788169.0	1724.1	G_WTG52	14354.4	-	-	-	-	-	-	-	-	-	-	-
GSH2918	VNP	4.5	442118.0	4788111.0	1979.4	G_WTG52	14161.5	-	-	-	-	-	-	-	-	-	-	-
GSH2500	VNP	4.5	442919.0	4794545.0	1581.4	G_WTG16	11641.4	-	-	-	-	-	-	-	-	-	-	-

Noise Impact Summary Table

Point of Reception ID	Description	Height	UTM Coordinates		Distance to Nearest Project Turbine (m)	Nearest Project Turbine ID	Distance to Project Transformer Substation (m)	Calculated Sound Level at Selected Wind Speeds (dBA)					Sound Level Limit (dBA)					Compliance Test
			X	Y				6	7	8	9	10	6	7	8	9	10	
GSH2914	VNP	4.5	442954.0	4790393.0	948.3	G_WTG53	12440.0	33.4	33.5	33.5	33.5	33.5	40.0	43.0	45.0	49.0	51.0	C
GSH2921	VNP	4.5	443291.0	4791736.0	1159.9	G_WTG17	11695.8	34.0	34.2	34.2	34.2	34.2	40.0	43.0	45.0	49.0	51.0	C
GSH2919	VNP	4.5	443390.0	4791133.0	1282.1	G_WTG53	11778.3	32.9	33.1	33.1	33.1	33.1	40.0	43.0	45.0	49.0	51.0	C
GSH2905	VNP	4.5	443503.0	4791507.0	1258.6	G_WTG17	11556.5	33.3	33.5	33.5	33.5	33.5	40.0	43.0	45.0	49.0	51.0	C
GSH2904	VNP	4.5	443528.0	4791308.0	1437.3	G_WTG17	11592.4	32.9	33.0	33.0	33.0	33.0	40.0	43.0	45.0	49.0	51.0	C
GSH2910	VNP	4.5	443618.0	4789697.0	1891.4	G_WTG53	12104.6	-	-	-	-	-	-	-	-	-	-	-
GSH2871	VNP	4.5	444376.0	4794785.0	838.0	G_WTG16	10179.9	35.8	35.9	35.9	35.9	35.9	40.0	43.0	45.0	49.0	51.0	C
GSH2859	VNP	4.5	444380.0	4796698.0	1193.1	G_WTG80	10336.1	32.3	32.5	32.5	32.5	32.5	40.0	43.0	45.0	49.0	51.0	C
GSH2851	VNP	4.5	444522.0	4797772.0	1760.4	G_WTG80	10441.1	-	-	-	-	-	-	-	-	-	-	-
GSH2850	VNP	4.5	444530.0	4797580.0	1600.2	G_WTG80	10381.9	-	-	-	-	-	-	-	-	-	-	-
GSH2849	VNP	4.5	444592.0	4797164.0	1250.4	G_WTG80	10221.2	31.4	31.6	31.6	31.6	31.6	40.0	43.0	45.0	49.0	51.0	C
GSH2848	VNP	4.5	444622.0	4796977.0	1107.6	G_WTG80	10151.8	32.5	32.6	32.6	32.6	32.6	40.0	43.0	45.0	49.0	51.0	C
GSH2858	VNP	4.5	444676.0	4796748.0	939.7	G_WTG80	10054.0	33.9	34.1	34.1	34.1	34.1	40.0	43.0	45.0	49.0	51.0	C
GSH2847	VNP	4.5	444688.0	4797597.0	1522.9	G_WTG80	10233.9	-	-	-	-	-	-	-	-	-	-	-
GSH2903	VNP	4.5	444701.0	4790638.0	1520.6	G_WTG38	10729.8	-	-	-	-	-	-	-	-	-	-	-
GSH2846	VNP	4.5	444726.0	4797460.0	1387.7	G_WTG80	10161.7	30.5	30.6	30.6	30.6	30.6	40.0	43.0	45.0	49.0	51.0	C
GSH2845	VNP	4.5	444817.0	4796944.0	935.9	G_WTG80	9954.2	33.7	33.9	33.9	33.9	33.9	40.0	43.0	45.0	49.0	51.0	C
GSH2874	VNP	4.5	444821.0	4795587.0	761.7	G_WTG19	9759.9	37.5	37.6	37.6	37.6	37.6	40.0	43.0	45.0	49.0	51.0	C
GSH2873	VNP	4.5	444871.0	4795276.0	810.0	G_WTG20	9692.4	37.6	37.7	37.7	37.7	37.7	40.0	43.0	45.0	49.0	51.0	C
GSH2870	VNP	4.5	444900.0	4794847.0	863.3	G_WTG20	9655.5	37.4	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH2811	VNP	4.5	445017.0	4805017.0	1956.9	G_WTG07	13917.0	-	-	-	-	-	-	-	-	-	-	-
GSH3041	VNP	4.5	445033.0	4792656.0	1061.2	G_WTG17	9779.4	35.7	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH2887	VNP	4.5	445038.0	4792776.0	1070.8	G_WTG17	9747.9	35.8	35.9	35.9	35.9	35.9	40.0	43.0	45.0	49.0	51.0	C
GSH2888	VNP	4.5	445096.0	4792647.0	1124.3	G_WTG17	9720.1	35.7	35.9	35.9	35.9	35.9	40.0	43.0	45.0	49.0	51.0	C
GSH3040	VNP	4.5	445103.0	4792735.0	1132.6	G_WTG17	9693.4	35.8	35.9	35.9	35.9	35.9	40.0	43.0	45.0	49.0	51.0	C
GSH3042	VNP	4.5	445141.0	4792673.0	1155.0	G_WTG36	9670.3	35.8	35.9	35.9	35.9	35.9	40.0	43.0	45.0	49.0	51.0	C
GSH3039	VNP	4.5	445187.0	4792738.0	1142.1	G_WTG36	9610.8	35.9	36.0	36.0	36.0	36.0	40.0	43.0	45.0	49.0	51.0	C
GSH2898	VNP	4.5	445212.0	4792335.0	992.8	G_WTG36	9684.6	36.0	36.1	36.1	36.1	36.1	40.0	43.0	45.0	49.0	51.0	C
GSH2889	VNP	4.5	445225.0	4792655.0	1071.0	G_WTG36	9592.7	35.9	36.1	36.1	36.1	36.1	40.0	43.0	45.0	49.0	51.0	C
GSH3037	VNP	4.5	445279.0	4792810.0	1099.7	G_WTG36	9505.2	36.0	36.2	36.2	36.2	36.2	40.0	43.0	45.0	49.0	51.0	C
GSH3038	VNP	4.5	445291.0	4792752.0	1058.5	G_WTG36	9506.3	36.1	36.2	36.2	36.2	36.2	40.0	43.0	45.0	49.0	51.0	C
GSH3043	VNP	4.5	445298.0	4792699.0	1025.9	G_WTG36	9511.6	36.1	36.2	36.2	36.2	36.2	40.0	43.0	45.0	49.0	51.0	C
GSH2880	VNP	4.5	445300.0	4793244.0	1037.9	G_WTG21	9399.4	36.5	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH3044	VNP	4.5	445309.0	4792625.0	982.3	G_WTG36	9518.1	36.2	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH3045	VNP	4.5	445321.0	4792536.0	936.2	G_WTG36	9528.0	36.3	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH3050	VNP	4.5	445326.0	4792881.0	1103.0	G_WTG36	9444.1	36.1	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH3036	VNP	4.5	445331.0	4792814.0	1059.0	G_WTG36	9453.6	36.1	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH3046	VNP	4.5	445333.0	4792459.0	900.2	G_WTG36	9535.7	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH3035	VNP	4.5	445339.0	4792759.0	1021.6	G_WTG36	9458.0	36.2	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH3047	VNP	4.5	445350.0	4792354.0	859.4	G_WTG36	9546.5	36.5	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH3048	VNP	4.5	445353.0	4792327.0	852.1	G_WTG36	9550.8	36.6	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH2893	VNP	4.5	445374.0	4792664.0	942.4	G_WTG36	9445.8	36.3	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH2896	VNP	4.5	445378.0	4792824.0	1027.0	G_WTG36	9405.6	36.3	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH3034	VNP	4.5	445381.0	4792771.0	993.4	G_WTG36	9414.4	36.3	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH2892	VNP	4.5	445391.0	4792618.0	905.7	G_WTG36	9440.2	36.4	36.6	36.6	36.6	36.6	40.0	43.0	45.0	49.0	51.0	C
GSH3049	VNP	4.5	445401.0	4792383.0	815.1	G_WTG36	9489.6	36.8	36.9	36.9	36.9	36.9	40.0	43.0	45.0	49.0	51.0	C
GSH2895	VNP	4.5	445406.0	4792710.0	938.7	G_WTG36	9403.9	36.4	36.6	36.6	36.6	36.6	40.0	43.0	45.0	49.0	51.0	C
GSH2891	VNP	4.5	445416.0	4792572.0	862.9	G_WTG36	9427.1	36.6	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH3029	VNP	4.5	445435.0	4792721.0	920.6	G_WTG36	9373.2	36.5	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH3033	VNP	4.5	445444.0	4792783.0	949.7	G_WTG36	9350.3	36.5	36.6	36.6	36.6	36.6	40.0	43.0	45.0	49.0	51.0	C
GSH3028	VNP	4.5	445482.0	4792721.0	882.1	G_WTG36	9327.4	36.7	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH3032	VNP	4.5	445483.0	4792790.0	923.5	G_WTG36	9310.7	36.6	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH2934	VNP	4.5	445492.0	4805667.0	1881.4	G_WTG07	14087.0	-	-	-	-	-	-	-	-	-	-	-
GSH3031	VNP	4.5	445514.0	4792796.0	903.8	G_WTG36	9279.2	36.7	36.9	36.9	36.9	36.9	40.0	43.0	45.0	49.0	51.0	C
GSH3027	VNP	4.5	445540.0	4792725.0	838.3	G_WTG36	9270.1	36.9	37.1	37.1	37.1	37.1	40.0	43.0	45.0	49.0	51.0	C
GSH3030	VNP	4.5	445559.0	4792800.0	873.0	G_WTG36	9234.4	36.9	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH2812	VNP	4.5	445603.0	4804655.0	1294.5	G_WTG07	13253.0	30.1	30.2	30.2	30.2	30.2	40.0	43.0	45.0	49.0	51.0	C
GSH3026	VNP	4.5	445619.0	4792695.0	758.3	G_WTG36	9200.4	37.3	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH3082	VNP	4.5	445662.0	4804277.0	1211.8	G_WTG07	12936.1	31.0	31.1	31.1	31.1	31.1	40.0	43.0	45.0	49.0	51.0	C
GSH2909	VNP	4.5	445677.0	4789766.0	1366.8	G_WTG38	10247.4	31.7	31.8	31.8	31.8	31.8	40.0	43.0	45.0	49.0	51.0	C
GSH2844	VNP	4.5	445682.0	4797044.0	749.0	G_WTG80	9132.8	35.5	35.6	35.6	35.6	35.6	40.0	43.0	45.0	49.0	51.0	C
GSH2813	VNP	4.5	445682.0	4804077.0	1226.3	G_WTG07	12777.7	31.2	31.4	31.4	31.4	31.4	40.0	43.0	45.0	49.0	51.0	C
GSH2894	VNP	4.5	445749.0	4792714.0	678.9	G_WTG36	9069.6	38.0	38.1	38.1	38.1	38.1	40.0	43.0	45.0	49.0	51.0	C
GSH2798	VNP	4.5	445795.0	4804722.0	1125.6	G_WTG07	13174.0	31.2	31.3	31.3	31.3	31.3	40.0	43.0	45.0	49.0	51.0	C
GSH2815	VNP	4.5	445828.0	4803092.0	1284.8	G_WTG08	11981.6	31.8	32.0	32.0	32.0	32.0	40.0	43.0	45.0	49.0	51.0	C
GSH2819	VNP	4.5	445989.0	4802260.0	858.0	G_WTG09	11305.1	33.4	33.5	33.5	33.5	33.5	40.0	43.0	45.0	49.0	51.0	C
GSH2792	VNP	4.5	446102.0	4802709.0	955.6	G_WTG09	11519.9	33.7	33.8	33.8	33.8	33.8	40.0	43.0	45.0	49.0	51.0	C
GSH2938	VNP	4.5	446113.0	4802214.0	727.6	G_WTG09	11181.3	34.6	34.8	34.8	34.8	34.8	40.0	43.0	45.0	49.0	51.0	C
GSH2791	VNP	4.5	446169.0	4801841.0	706.3	G_WTG09	10897.2	34.6	34.7	34.7	34.7	34.7	40.0	43.0	45.0	49.0	51.0	C
GSH3051	VNP	4.5	446180.0	4796960.0	930.0	G_WTG80	8629.2	34.7	34.8	34.8	34.8	34.8	40.0	43.0	45.0	49.0	51.0	C
GSH3085	VNP	4.5	446184.0	4800680.0	1550.9	G_WTG09	10182.7	-	-	-	-	-	-	-	-	-	-	-
GSH2879	VNP	4.5	446247.0	4792930.0	613.9	G_WTG86	8534.9	39.3	39.4	39.4	39.4	39.4	40.0	43.0	45.0	49.0	51.0	C
GSH2405	VNP	4.5	446524.0	4788802.0	1983.8	G_WTG78	10073.8	-	-	-	-	-	-	-	-	-	-	-
GSH2841	VNP	4.5	446536.0	4798024.0	1993.3	G_WTG80	8612.7	-	-	-	-	-	-	-	-	-	-	-
GSH3081	VNP	4.5	446661.0	4805364.0	1000.9	G_WTG07	13121.6	32.4	32.5	32.5	32.5	32.5	40.0	43.0	45.0	49.0	51.0	C
GSH2857	VNP	4.5	446701.0	4797019.0	1333.2	G_WTG23	8139.7	33.5	33.6	33.6	33.6	33.6	40.0	43.0	45.0	49.0	51.0	C
GSH2861	VNP	4.5	446814.0	4796332.0	941.3	G_WTG22	7875.9	36.5	36.6	36.6	36.6	36.6	40.0	43.0	45.0	49.0	51.0	C
GSH2862	VNP	4.5	446926.0	4795546.0	628.8	G_WTG22	7658.2	39.0	39.1	39.1	39.1	39.1	40.0	43.0	45.0	49.0	51.0	C
GSH2780	VNP	4.5	446976.0	4796403.0	870.0	G_WTG23	7730.4	36.7	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH2404	VNP	4.5	447107.0	4788893.0	1829.7	G_WTG78	9558.1	-	-	-	-	-	-	-	-	-	-	-
GSH2772	VNP	4.5	447181.0	4794729.0	808.9	G_WTG66	7376.1	37.8	38.0	38.0	38.0	38.0	40.0	43.0	45.0	49.0	51.0	C
GSH2877	VNP	4.5	447192.0	4793737.0	679.0	G_WTG86	7452.1	38.5	38.6	38.6	38.6	38.6	40.0	43.0	45.0	49.0	51.0	C
GSH2773	VNP	4.5	447272.0	4794151.0	837.5	G_WTG39	7320.1	37.7	37.8	37.8	37.8	37.8	40.0	43.0	45.0	49.0	51.0	C
GSH2685	VNP	4.5	447364.0	4801388.0	882.0	G_WTG09	9697.1	34.1	34.2	34.2	34.2	34.2	40.0	43.0	45.0	49.0	51.0	C
GSH2401	VNP	4.5	447410.0	4788770.0	1988.2	G_WTG78	9403.4	-	-	-	-	-	-	-	-	-	-	-

Noise Impact Summary Table

Point of Reception ID	Description	Height	UTM Coordinates		Distance to Nearest Project Turbine (m)	Nearest Project Turbine ID	Distance to Project Transformer Substation (m)	Calculated Sound Level at Selected Wind Speeds (dBA)					Sound Level Limit (dBA)					Compliance Test
			X	Y				6	7	8	9	10	6	7	8	9	10	
GSH3080	VNP	4.5	447537.0	4806178.0	1913.4	G_WTG07	13298.1	-	-	-	-	-	-	-	-	-	-	-
GSH2806	VNP	4.5	447550.0	4805795.0	1565.8	G_WTG07	12967.3	-	-	-	-	-	-	-	-	-	-	-
GSH2403	VNP	4.5	447575.0	4788963.0	1841.4	G_WTG78	9152.7	-	-	-	-	-	-	-	-	-	-	-
GSH2790	VNP	4.5	447587.0	4799402.0	1945.4	G_WTG15	8305.5	-	-	-	-	-	-	-	-	-	-	-
GSH2763	VNP	4.5	447589.0	4792077.0	652.9	G_WTG64	7510.3	37.8	37.9	37.9	37.9	37.9	40.0	43.0	45.0	49.0	51.0	C
GSH2761	VNP	4.5	447604.0	4791982.0	636.4	G_WTG64	7532.4	37.9	38.1	38.1	38.1	38.1	40.0	43.0	45.0	49.0	51.0	C
GSH2684	VNP	4.5	447655.0	4801316.0	1131.2	G_WTG09	9434.1	33.7	33.9	33.9	33.9	33.9	40.0	43.0	45.0	49.0	51.0	C
GSH2908	VNP	4.5	447675.0	4790500.0	684.6	G_WTG78	8157.8	36.6	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH3025	VNP	4.5	447720.0	4790250.0	837.9	G_WTG78	8257.5	35.2	35.4	35.4	35.4	35.4	40.0	43.0	45.0	49.0	51.0	C
GSH2659	VNP	4.5	447767.0	4805340.0	1206.9	G_WTG10	12467.3	33.2	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH2751	VNP	4.5	447779.0	4789844.0	1155.3	G_WTG78	8444.6	33.0	33.1	33.1	33.1	33.1	40.0	43.0	45.0	49.0	51.0	C
GSH2662	VNP	4.5	447805.0	4805247.0	1121.1	G_WTG10	12368.7	33.7	33.8	33.8	33.8	33.8	40.0	43.0	45.0	49.0	51.0	C
GSH2797	VNP	4.5	447849.0	4803711.0	720.2	G_WTG11	11086.6	37.9	38.0	38.0	38.0	38.0	40.0	43.0	45.0	49.0	51.0	C
GSH2793	VNP	4.5	447891.0	4803358.0	745.4	G_WTG11	10781.6	37.7	37.9	37.9	37.9	37.9	40.0	43.0	45.0	49.0	51.0	C
GSH2753	VNP	4.5	447900.0	4790428.0	920.9	G_WTG78	8008.8	35.4	35.5	35.5	35.5	35.5	40.0	43.0	45.0	49.0	51.0	C
GSH2754	VNP	4.5	447924.0	4790347.0	971.8	G_WTG78	8034.3	35.0	35.1	35.1	35.1	35.1	40.0	43.0	45.0	49.0	51.0	C
GSH2755	VNP	4.5	447937.0	4790235.0	1031.6	G_WTG78	8087.4	34.6	34.7	34.7	34.7	34.7	40.0	43.0	45.0	49.0	51.0	C
GSH2794	VNP	4.5	448013.0	4802577.0	960.2	G_WTG13	10099.7	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH2692	VNP	4.5	448028.0	4799663.0	1433.4	G_WTG15	8090.6	30.1	30.2	30.2	30.2	30.2	40.0	43.0	45.0	49.0	51.0	C
GSH3087	VNP	4.5	448035.0	4799428.0	1569.4	G_WTG15	7948.2	-	-	-	-	-	-	-	-	-	-	-
GSH2665	VNP	4.5	448061.0	4802988.0	849.8	G_WTG11	10386.1	37.0	37.2	37.2	37.2	37.2	40.0	43.0	45.0	49.0	51.0	C
GSH2697	VNP	4.5	448093.0	4799320.0	1600.2	G_WTG15	7839.1	-	-	-	-	-	-	-	-	-	-	-
GSH2693	VNP	4.5	448118.0	4799602.0	1395.3	G_WTG15	7981.9	30.1	30.2	30.2	30.2	30.2	40.0	43.0	45.0	49.0	51.0	C
GSH2700	VNP	4.5	448128.0	4799229.0	1642.1	G_WTG15	7758.9	-	-	-	-	-	-	-	-	-	-	-
GSH2698	VNP	4.5	448140.0	4799345.0	1549.3	G_WTG15	7814.6	-	-	-	-	-	-	-	-	-	-	-
GSH2699	VNP	4.5	448141.0	4799308.0	1575.2	G_WTG15	7792.7	-	-	-	-	-	-	-	-	-	-	-
GSH2696	VNP	4.5	448151.0	4799518.0	1422.8	G_WTG15	7905.8	30.0	30.1	30.1	30.1	30.1	40.0	43.0	45.0	49.0	51.0	C
GSH2666	VNP	4.5	448157.0	4802750.0	912.0	G_WTG13	10140.6	36.9	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH2683	VNP	4.5	448161.0	4801353.0	763.7	G_WTG14	9096.8	35.9	36.1	36.1	36.1	36.1	40.0	43.0	45.0	49.0	51.0	C
GSH2691	VNP	4.5	448163.0	4799689.0	1307.3	G_WTG15	7997.6	30.6	30.7	30.7	30.7	30.7	40.0	43.0	45.0	49.0	51.0	C
GSH2667	VNP	4.5	448170.0	4802576.0	814.9	G_WTG13	9997.9	36.9	37.1	37.1	37.1	37.1	40.0	43.0	45.0	49.0	51.0	C
GSH2711	VNP	4.5	448216.0	4799238.0	1577.7	G_WTG15	7691.3	-	-	-	-	-	-	-	-	-	-	-
GSH2681	VNP	4.5	448266.0	4800796.0	1020.4	G_WTG15	8632.6	34.5	34.6	34.6	34.6	34.6	40.0	43.0	45.0	49.0	51.0	C
GSH2690	VNP	4.5	448283.0	4799707.0	1200.5	G_WTG15	7913.0	31.0	31.1	31.1	31.1	31.1	40.0	43.0	45.0	49.0	51.0	C
GSH2687	VNP	4.5	448319.0	4799793.0	1120.0	G_WTG15	7937.4	31.6	31.7	31.7	31.7	31.7	40.0	43.0	45.0	49.0	51.0	C
GSH2713	VNP	4.5	448325.0	4799327.0	1439.8	G_WTG15	7653.0	29.9	30.1	30.1	30.1	30.1	40.0	43.0	45.0	49.0	51.0	C
GSH2686	VNP	4.5	448336.0	4800142.0	941.8	G_WTG15	8144.9	33.1	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH2712	VNP	4.5	448346.0	4799332.0	1422.8	G_WTG15	7638.8	30.0	30.1	30.1	30.1	30.1	40.0	43.0	45.0	49.0	51.0	C
GSH2694	VNP	4.5	448349.0	4799557.0	1251.6	G_WTG15	7769.7	30.7	30.8	30.8	30.8	30.8	40.0	43.0	45.0	49.0	51.0	C
GSH2710	VNP	4.5	448362.0	4799482.0	1297.5	G_WTG15	7714.3	30.5	30.6	30.6	30.6	30.6	40.0	43.0	45.0	49.0	51.0	C
GSH2689	VNP	4.5	448388.0	4799719.0	1112.0	G_WTG15	7837.4	31.6	31.8	31.8	31.8	31.8	40.0	43.0	45.0	49.0	51.0	C
GSH2695	VNP	4.5	448393.0	4799542.0	1232.2	G_WTG15	7725.5	30.8	30.9	30.9	30.9	30.9	40.0	43.0	45.0	49.0	51.0	C
GSH2670	VNP	4.5	448403.0	4800983.0	796.0	G_WTG14	8664.0	35.9	36.0	36.0	36.0	36.0	40.0	43.0	45.0	49.0	51.0	C
GSH2399	VNP	4.5	448425.0	4789090.0	1741.2	G_WTG42	8434.4	-	-	-	-	-	-	-	-	-	-	-
GSH2702	VNP	4.5	448486.0	4799145.0	1500.2	G_WTG15	7416.5	-	-	-	-	-	-	-	-	-	-	-
GSH2701	VNP	4.5	448496.0	4799068.0	1563.0	G_WTG15	7364.3	-	-	-	-	-	-	-	-	-	-	-
GSH2719	VNP	4.5	448532.0	4798890.0	1707.4	G_WTG15	7234.6	-	-	-	-	-	-	-	-	-	-	-
GSH2718	VNP	4.5	448560.0	4799685.0	1014.3	G_WTG15	7681.5	32.2	32.3	32.3	32.3	32.3	40.0	43.0	45.0	49.0	51.0	C
GSH2703	VNP	4.5	448624.0	4798883.0	1678.7	G_WTG15	7154.2	-	-	-	-	-	-	-	-	-	-	-
GSH2660	VNP	4.5	448632.0	4805613.0	1015.0	G_WTG10	12256.5	33.6	33.8	33.8	33.8	33.8	40.0	43.0	45.0	49.0	51.0	C
GSH2717	VNP	4.5	448638.0	4799563.0	1064.2	G_WTG15	7544.5	31.7	31.8	31.8	31.8	31.8	40.0	43.0	45.0	49.0	51.0	C
GSH2705	VNP	4.5	448650.0	4798793.0	1754.3	G_WTG15	7082.6	-	-	-	-	-	-	-	-	-	-	-
GSH2704	VNP	4.5	448650.0	4798826.0	1723.1	G_WTG15	7100.9	-	-	-	-	-	-	-	-	-	-	-
GSH2723	VNP	4.5	448677.0	4798715.0	1819.8	G_WTG15	7017.2	-	-	-	-	-	-	-	-	-	-	-
GSH2398	VNP	4.5	448686.0	4789131.0	1634.5	G_WTG42	8217.9	-	-	-	-	-	-	-	-	-	-	-
GSH2714	VNP	4.5	448690.0	4799254.0	1310.6	G_WTG15	7315.1	30.4	30.6	30.6	30.6	30.6	40.0	43.0	45.0	49.0	51.0	C
GSH2958	VNP	4.5	448696.0	4799216.0	1343.0	G_WTG15	7287.6	30.3	30.4	30.4	30.4	30.4	40.0	43.0	45.0	49.0	51.0	C
GSH2661	VNP	4.5	448704.0	4805649.0	1047.2	G_WTG10	12253.5	33.4	33.5	33.5	33.5	33.5	40.0	43.0	45.0	49.0	51.0	C
GSH2781	VNP	4.5	448735.0	4797659.0	1599.8	G_WTG23	6448.6	-	-	-	-	-	-	-	-	-	-	-
GSH2722	VNP	4.5	448744.0	4798529.0	1980.5	G_WTG15	6860.6	-	-	-	-	-	-	-	-	-	-	-
GSH2715	VNP	4.5	448749.0	4799558.0	1011.5	G_WTG15	7454.6	32.0	32.2	32.2	32.2	32.2	40.0	43.0	45.0	49.0	51.0	C
GSH2778	VNP	4.5	448761.0	4797264.0	1308.9	G_WTG23	6264.6	31.2	31.3	31.3	31.3	31.3	40.0	43.0	45.0	49.0	51.0	C
GSH2777	VNP	4.5	448814.0	4796861.0	1106.2	G_WTG23	6072.7	32.2	32.3	32.3	32.3	32.3	40.0	43.0	45.0	49.0	51.0	C
GSH2706	VNP	4.5	448870.0	4799364.0	1142.9	G_WTG15	7239.1	31.2	31.4	31.4	31.4	31.4	40.0	43.0	45.0	49.0	51.0	C
GSH2776	VNP	4.5	448910.0	4796099.0	1091.9	G_WTG23	5775.0	33.3	33.4	33.4	33.4	33.4	40.0	43.0	45.0	49.0	51.0	C
GSH2775	VNP	4.5	448956.0	4795634.0	1313.2	G_WTG23	5649.6	33.2	33.4	33.4	33.4	33.4	40.0	43.0	45.0	49.0	51.0	C
GSH2707	VNP	4.5	448967.0	4799444.0	1038.8	G_WTG15	7213.5	31.9	32.0	32.0	32.0	32.0	40.0	43.0	45.0	49.0	51.0	C
GSH2774	VNP	4.5	448993.0	4795421.0	1466.5	G_WTG23	5588.4	33.1	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH2708	VNP	4.5	449006.0	4799444.0	1029.8	G_WTG15	7183.3	31.9	32.0	32.0	32.0	32.0	40.0	43.0	45.0	49.0	51.0	C
GSH2709	VNP	4.5	449026.0	4799460.0	1010.0	G_WTG15	7178.1	32.0	32.2	32.2	32.2	32.2	40.0	43.0	45.0	49.0	51.0	C
GSH2716	VNP	4.5	449047.0	4799529.0	938.2	G_WTG15	7206.2	32.6	32.7	32.7	32.7	32.7	40.0	43.0	45.0	49.0	51.0	C
GSH2771	VNP	4.5	449064.0	4795268.0	1577.7	G_WTG81	5504.9	-	-	-	-	-	-	-	-	-	-	-
GSH2770	VNP	4.5	449090.0	4795145.0	1473.1	G_WTG81	5471.7	33.2	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH2679	VNP	4.5	449101.0	4799452.0	1005.8	G_WTG15	7115.3	32.1	32.3	32.3	32.3	32.3	40.0	43.0	45.0	49.0	51.0	C
GSH2678	VNP	4.5	449143.0	4799535.0	918.8	G_WTG15	7137.0	32.8	32.9	32.9	32.9	32.9	40.0	43.0	45.0	49.0	51.0	C
GSH2728	VNP	4.5	449158.0	4795671.0	1471.3	G_WTG23	5454.7	32.6	32.8	32.8	32.8	32.8	40.0	43.0	45.0	49.0	51.0	C
GSH2737	VNP	4.5	449197.0	4794348.0	992.1	G_WTG81	5385.1	34.5	34.6	34.6	34.6	34.6	40.0	43.0	45.0	49.0	51.0	C
GSH2677	VNP	4.5	449209.0	4799556.0	894.2	G_WTG15	7100.9	33.0	33.1	33.1	33.1	33.1	40.0	43.0	45.0	49.0	51.0	C
GSH2768	VNP	4.5	449232.0	4794036.0	940.8	G_WTG81	5390.4	34.9	35.0	35.0	35.0	35.0	40.0	43.0	45.0	49.0	51.0	C
GSH3023	VNP	4.5	449300.0	4789175.0	1592.5	G_WTG42	7758.8	-	-	-	-	-	-	-	-	-	-	-
GSH2730	VNP	4.5	449309.0	4795060.0	1258.0	G_WTG81	5249.4	33.2	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH2756	VNP	4.5	449372.0	4793200.0	1231.1	G_WTG81	5449.8	34.3	34.5	34.5	34.5	34.5	40.0	43.0	45.0	49.0	51.0	C
GSH2736	VNP	4.5	449374.0	4794188.0	794.5	G_WTG81	5227.8	35.4	35.5	35.5	35.5	35.5	40.0	43.0	45.0	49.0	51.0	C
GSH2757	VNP	4.5	449397.0	4792937.0	1422.5	G_WTG41	5513.3	34.3	34.4	34.4	34.4	34.4	40.0	43.0	45.0	49.0	51.0	C
GSH2740	VNP	4.5	449577.0	4792805.0	1379.4	G_WTG41	5394.7	34.5	34.6	34.6	34.6	34.6	40.0	43.0	45.0	49.0	51.0	C

Noise Impact Summary Table

Point of Reception ID	Description	Height	UTM Coordinates		Distance to Nearest Project Turbine (m)	Nearest Project Turbine ID	Distance to Project Transformer Substation (m)	Calculated Sound Level at Selected Wind Speeds (dBA)					Sound Level Limit (dBA)					Compliance Test
			X	Y				6	7	8	9	10	6	7	8	9	10	
GSH2396	VNP	4.5	449587.0	4789251.0	1601.4	G_WTG42	7510.2	-	-	-	-	-	-	-	-	-	-	-
GSH2657	VNP	4.5	449599.0	4806177.0	1002.1	G_WTG02	12333.8	34.0	34.1	34.1	34.1	34.1	40.0	43.0	45.0	49.0	51.0	C
GSH2741	VNP	4.5	449614.0	4792596.0	1223.5	G_WTG41	5445.0	34.9	35.0	35.0	35.0	35.0	40.0	43.0	45.0	49.0	51.0	C
GSH2658	VNP	4.5	449630.0	4805824.0	891.0	G_WTG02	11998.7	35.4	35.5	35.5	35.5	35.5	40.0	43.0	45.0	49.0	51.0	C
GSH2742	VNP	4.5	449708.0	4791946.0	881.2	G_WTG41	5667.7	36.5	36.6	36.6	36.6	36.6	40.0	43.0	45.0	49.0	51.0	C
GSH2650	VNP	4.5	449778.0	4805861.0	746.2	G_WTG02	11972.6	36.3	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH2663	VNP	4.5	449791.0	4804663.0	795.5	G_WTG04	10878.9	38.0	38.1	38.1	38.1	38.1	40.0	43.0	45.0	49.0	51.0	C
GSH3021	VNP	4.5	449794.0	4789222.0	1669.1	G_WTG68	7397.1	-	-	-	-	-	-	-	-	-	-	-
GSH2664	VNP	4.5	449849.0	4804415.0	824.0	G_WTG72	10630.7	38.0	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH2395	VNP	4.5	449858.0	4789235.0	1628.3	G_WTG68	7346.1	-	-	-	-	-	-	-	-	-	-	-
GSH3019	VNP	4.5	449913.0	4789238.0	1602.1	G_WTG68	7308.7	-	-	-	-	-	-	-	-	-	-	-
GSH2747	VNP	4.5	449937.0	4790551.0	656.2	G_WTG68	6332.1	37.3	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH3018	VNP	4.5	449942.0	4789242.0	1586.6	G_WTG68	7287.2	-	-	-	-	-	-	-	-	-	-	-
GSH2748	VNP	4.5	449954.0	4790401.0	689.3	G_WTG68	6423.4	36.8	36.9	36.9	36.9	36.9	40.0	43.0	45.0	49.0	51.0	C
GSH2674	VNP	4.5	449954.0	4799743.0	1014.8	G_WTG15	6692.8	32.3	32.4	32.4	32.4	32.4	40.0	43.0	45.0	49.0	51.0	C
GSH3017	VNP	4.5	449974.0	4789249.0	1567.6	G_WTG68	7261.6	-	-	-	-	-	-	-	-	-	-	-
GSH2956	VNP	4.5	449997.0	4789981.0	920.7	G_WTG68	6693.9	34.5	34.6	34.6	34.6	34.6	40.0	43.0	45.0	49.0	51.0	C
GSH3020	VNP	4.5	450003.0	4789295.0	1514.0	G_WTG68	7207.6	-	-	-	-	-	-	-	-	-	-	-
GSH3016	VNP	4.5	450006.0	4789254.0	1550.9	G_WTG68	7237.5	-	-	-	-	-	-	-	-	-	-	-
GSH2669	VNP	4.5	450021.0	4801727.0	1150.6	G_WTG14	8210.0	34.3	34.4	34.4	34.4	34.4	40.0	43.0	45.0	49.0	51.0	C
GSH3015	VNP	4.5	450032.0	4789521.0	1295.2	G_WTG68	7015.1	31.9	32.1	32.1	32.1	32.1	40.0	43.0	45.0	49.0	51.0	C
GSH3014	VNP	4.5	450039.0	4789470.0	1338.9	G_WTG68	7049.6	31.7	31.8	31.8	31.8	31.8	40.0	43.0	45.0	49.0	51.0	C
GSH2394	VNP	4.5	450046.0	4789394.0	1406.1	G_WTG68	7103.7	31.3	31.5	31.5	31.5	31.5	40.0	43.0	45.0	49.0	51.0	C
GSH3013	VNP	4.5	450047.0	4789434.0	1368.8	G_WTG68	7072.2	31.5	31.6	31.6	31.6	31.6	40.0	43.0	45.0	49.0	51.0	C
GSH2393	VNP	4.5	450089.0	4789307.0	1472.2	G_WTG68	7144.2	31.0	31.1	31.1	31.1	31.1	40.0	43.0	45.0	49.0	51.0	C
GSH2641	VNP	4.5	450141.0	4802963.0	971.2	G_WTG12	9207.4	35.7	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH3012	VNP	4.5	450148.0	4789310.0	1450.9	G_WTG68	7105.1	31.0	31.1	31.1	31.1	31.1	40.0	43.0	45.0	49.0	51.0	C
GSH2392	VNP	4.5	450236.0	4789282.0	1454.5	G_WTG68	7073.0	30.9	31.0	31.0	31.0	31.0	40.0	43.0	45.0	49.0	51.0	C
GSH2642	VNP	4.5	450245.0	4802655.0	1208.7	G_WTG12	8887.4	34.6	34.8	34.8	34.8	34.8	40.0	43.0	45.0	49.0	51.0	C
GSH2640	VNP	4.5	450278.0	4802451.0	1358.1	G_WTG12	8693.3	34.1	34.3	34.3	34.3	34.3	40.0	43.0	45.0	49.0	51.0	C
GSH2637	VNP	4.5	450324.0	4801702.0	1451.1	G_WTG14	8025.3	33.0	33.2	33.2	33.2	33.2	40.0	43.0	45.0	49.0	51.0	C
GSH2676	VNP	4.5	450328.0	4799736.0	1313.1	G_WTG15	6436.2	31.2	31.3	31.3	31.3	31.3	40.0	43.0	45.0	49.0	51.0	C
GSH2639	VNP	4.5	450341.0	4801885.0	1472.7	G_WTG13	8172.6	33.2	33.3	33.3	33.3	33.3	40.0	43.0	45.0	49.0	51.0	C
GSH2391	VNP	4.5	450432.0	4789350.0	1353.8	G_WTG68	6900.4	31.1	31.2	31.2	31.2	31.2	40.0	43.0	45.0	49.0	51.0	C
GSH2951	VNP	4.5	450539.0	4799506.0	1617.1	G_WTG15	6124.1	-	-	-	-	-	-	-	-	-	-	-
GSH2937	VNP	4.5	450657.0	4799803.0	1570.5	G_WTG15	6277.4	-	-	-	-	-	-	-	-	-	-	-
GSH2724	VNP	4.5	450803.0	4797318.0	1649.7	G_WTG31	4473.3	-	-	-	-	-	-	-	-	-	-	-
GSH3011	VNP	4.5	450831.0	4789373.0	1347.2	G_WTG68	6650.6	31.0	31.1	31.1	31.1	31.1	40.0	43.0	45.0	49.0	51.0	C
GSH3009	VNP	4.5	450855.0	4798145.0	1495.5	G_WTG31	4933.0	31.1	31.2	31.2	31.2	31.2	40.0	43.0	45.0	49.0	51.0	C
GSH2632	VNP	4.5	450932.0	4797600.0	1441.3	G_WTG31	4529.0	32.0	32.1	32.1	32.1	32.1	40.0	43.0	45.0	49.0	51.0	C
GSH2726	VNP	4.5	450951.0	4796559.0	1351.7	G_WTG71	3975.1	33.3	33.4	33.4	33.4	33.4	40.0	43.0	45.0	49.0	51.0	C
GSH2631	VNP	4.5	451070.0	4796663.0	1322.6	G_WTG33	3913.7	33.6	33.7	33.7	33.7	33.7	40.0	43.0	45.0	49.0	51.0	C
GSH2630	VNP	4.5	451132.0	4796335.0	1064.0	G_WTG71	3718.7	34.5	34.6	34.6	34.6	34.6	40.0	43.0	45.0	49.0	51.0	C
GSH2734	VNP	4.5	451195.0	4794881.0	932.0	G_WTG71	3360.5	35.0	35.2	35.2	35.2	35.2	40.0	43.0	45.0	49.0	51.0	C
GSH2628	VNP	4.5	451209.0	4795697.0	655.4	G_WTG71	3444.1	36.6	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH2735	VNP	4.5	451229.0	4794705.0	1044.5	G_WTG71	3331.2	34.8	35.0	35.0	35.0	35.0	40.0	43.0	45.0	49.0	51.0	C
GSH2626	VNP	4.5	451263.0	4795364.0	612.0	G_WTG71	3327.4	37.0	37.1	37.1	37.1	37.1	40.0	43.0	45.0	49.0	51.0	C
GSH2627	VNP	4.5	451333.0	4794906.0	821.6	G_WTG71	3222.5	35.7	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH2950	VNP	4.5	451374.0	4793821.0	1100.2	G_WTG82	3354.0	35.4	35.5	35.5	35.5	35.5	40.0	43.0	45.0	49.0	51.0	C
GSH2963	VNP	4.5	451445.0	4794253.0	1283.0	G_WTG81	3173.6	34.8	34.9	34.9	34.9	34.9	40.0	43.0	45.0	49.0	51.0	C
GSH2738	VNP	4.5	451489.0	4793121.0	753.4	G_WTG82	3536.6	37.4	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH2651	VNP	4.5	451491.0	4807140.0	1669.4	G_WTG02	12634.4	-	-	-	-	-	-	-	-	-	-	-
GSH2739	VNP	4.5	451509.0	4792874.0	781.5	G_WTG82	3649.2	37.7	37.9	37.9	37.9	37.9	40.0	43.0	45.0	49.0	51.0	C
GSH3022	VNP	4.5	451509.0	4792982.0	750.9	G_WTG82	3590.8	37.6	37.8	37.8	37.8	37.8	40.0	43.0	45.0	49.0	51.0	C
GSH2949	VNP	4.5	451542.0	4797688.0	829.1	G_WTG31	4117.0	35.2	35.3	35.3	35.3	35.3	40.0	43.0	45.0	49.0	51.0	C
GSH2542	VNP	4.5	451634.0	4807347.0	1921.0	G_WTG02	12801.9	-	-	-	-	-	-	-	-	-	-	-
GSH2541	VNP	4.5	451648.0	4806914.0	1598.1	G_WTG02	12377.5	-	-	-	-	-	-	-	-	-	-	-
GSH2745	VNP	4.5	451687.0	4791494.0	899.1	G_WTG69	4439.9	36.7	36.9	36.9	36.9	36.9	40.0	43.0	45.0	49.0	51.0	C
GSH2540	VNP	4.5	451691.0	4806697.0	1481.4	G_WTG03	12156.4	31.1	31.2	31.2	31.2	31.2	40.0	43.0	45.0	49.0	51.0	C
GSH2617	VNP	4.5	451721.0	4792343.0	745.4	G_WTG47	3805.9	38.2	38.3	38.3	38.3	38.3	40.0	43.0	45.0	49.0	51.0	C
GSH2746	VNP	4.5	451741.0	4791072.0	1046.3	G_WTG69	4737.5	36.0	36.2	36.2	36.2	36.2	40.0	43.0	45.0	49.0	51.0	C
GSH2675	VNP	4.5	451784.0	4799946.0	1375.5	G_WTG34	5772.0	32.1	32.2	32.2	32.2	32.2	40.0	43.0	45.0	49.0	51.0	C
GSH2959	VNP	4.5	451792.0	4806090.0	1039.5	G_WTG03	11542.8	33.7	33.9	33.9	33.9	33.9	40.0	43.0	45.0	49.0	51.0	C
GSH2547	VNP	4.5	451802.0	4805986.0	977.0	G_WTG03	11439.4	34.2	34.4	34.4	34.4	34.4	40.0	43.0	45.0	49.0	51.0	C
GSH3010	VNP	4.5	451808.0	4799796.0	1319.0	G_WTG34	5629.1	32.3	32.4	32.4	32.4	32.4	40.0	43.0	45.0	49.0	51.0	C
GSH2648	VNP	4.5	451817.0	4805188.0	771.0	G_WTG05	10662.8	37.3	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH2647	VNP	4.5	451822.0	4805104.0	714.6	G_WTG05	10580.3	37.5	37.7	37.7	37.7	37.7	40.0	43.0	45.0	49.0	51.0	C
GSH2612	VNP	4.5	451833.0	4791502.0	1045.0	G_WTG69	4340.7	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH2615	VNP	4.5	451847.0	4791670.0	1071.9	G_WTG69	4202.2	36.6	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH2749	VNP	4.5	451850.0	4790478.0	849.3	G_WTG46	5169.4	35.3	35.5	35.5	35.5	35.5	40.0	43.0	45.0	49.0	51.0	C
GSH2638	VNP	4.5	451863.0	4801996.0	1878.1	G_WTG73	7605.6	-	-	-	-	-	-	-	-	-	-	-
GSH2548	VNP	4.5	451917.0	4805301.0	868.1	G_WTG03	10747.0	36.1	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH2550	VNP	4.5	451938.0	4805181.0	852.2	G_WTG05	10625.6	36.3	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH2620	VNP	4.5	452021.0	4793756.0	649.7	G_WTG82	2773.7	37.9	38.0	38.0	38.0	38.0	40.0	43.0	45.0	49.0	51.0	C
GSH2643	VNP	4.5	452076.0	4803349.0	969.2	G_WTG06	8821.7	33.8	34.0	34.0	34.0	34.0	40.0	43.0	45.0	49.0	51.0	C
GSH2556	VNP	4.5	452105.0	4803964.0	922.6	G_WTG06	9405.9	35.2	35.4	35.4	35.4	35.4	40.0	43.0	45.0	49.0	51.0	C
GSH2558	VNP	4.5	452191.0	4803373.0	1064.8	G_WTG06	8813.2	33.3	33.4	33.4	33.4	33.4	40.0	43.0	45.0	49.0	51.0	C
GSH2546	VNP	4.5	452205.0	4806042.0	1340.0	G_WTG03	11404.0	31.7	31.9	31.9	31.9	31.9	40.0	43.0	45.0	49.0	51.0	C
GSH2559	VNP	4.5	452214.0	4803272.0	1127.0	G_WTG06	8709.8	32.8	33.0	33.0	33.0	33.0	40.0	43.0	45.0	49.0	51.0	C
GSH2644	VNP	4.5	452225.0	4802364.0	1738.2	G_WTG06	7835.7	-	-	-	-	-	-	-	-	-	-	-
GSH2635	VNP	4.5	452250.0	4799781.0	882.9	G_WTG34	5413.6	34.7	34.8	34.8	34.8	34.8	40.0	43.0	45.0	49.0	51.0	C
GSH2560	VNP	4.5	452292.0	4802676.0	1543.6	G_WTG06	8115.2	-	-	-	-	-	-	-	-	-	-	-
GSH2545	VNP	4.5	452321.0	4806049.0	1444.4	G_WTG03	11387.5	31.1	31.3	31.3	31.3	31.3	40.0	43.0	45.0	49.0	51.0	C
GSH2557	VNP	4.5	452381.0	4802067.0	1616.2	G_WTG73	7506.0	-	-	-	-	-	-	-	-	-	-	-
GSH2561	VNP	4.5	452395.0	4801940.0	1500.2	G_WTG73	7380.4	-	-	-	-	-	-	-	-	-	-	-

Noise Impact Summary Table

Point of Reception ID	Description	Height	UTM Coordinates		Distance to Nearest Project Turbine (m)	Nearest Project Turbine ID	Distance to Project Transformer Substation (m)	Calculated Sound Level at Selected Wind Speeds (dBA)					Sound Level Limit (dBA)					Compliance Test
			X	Y				6	7	8	9	10	6	7	8	9	10	
GSH2562	VNP	4.5	452473.0	4801361.0	997.9	G_WTG73	6804.6	32.8	33.0	33.0	33.0	33.0	40.0	43.0	45.0	49.0	51.0	C
GSH2563	VNP	4.5	452514.0	4801149.0	830.7	G_WTG73	6590.3	34.1	34.2	34.2	34.2	34.2	40.0	43.0	45.0	49.0	51.0	C
GSH2611	VNP	4.5	452687.0	4791611.0	623.6	G_WTG77	3767.8	38.0	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH2616	VNP	4.5	452687.0	4791769.0	729.4	G_WTG77	3631.4	37.7	37.8	37.8	37.8	37.8	40.0	43.0	45.0	49.0	51.0	C
GSH2565	VNP	4.5	452883.0	4798693.0	908.3	G_WTG34	4161.0	36.3	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH2569	VNP	4.5	452996.0	4797885.0	662.5	G_WTG31	3383.0	37.4	37.5	37.5	37.5	37.5	40.0	43.0	45.0	49.0	51.0	C
GSH3008	VNP	4.5	453149.0	4795962.0	878.4	G_WTG74	1772.7	38.1	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH2625	VNP	4.5	453153.0	4795821.0	806.8	G_WTG74	1687.3	38.1	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH2624	VNP	4.5	453236.0	4795134.0	738.2	G_WTG74	1343.1	38.4	38.4	38.4	38.4	38.4	40.0	43.0	45.0	49.0	51.0	C
GSH2573	VNP	4.5	453320.0	4795823.0	659.8	G_WTG74	1552.5	38.7	38.9	38.9	38.9	38.9	40.0	43.0	45.0	49.0	51.0	C
GSH2623	VNP	4.5	453361.0	4794456.0	1058.6	G_WTG76	1268.4	36.6	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH2622	VNP	4.5	453396.0	4794327.0	947.8	G_WTG76	1285.8	36.8	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH2621	VNP	4.5	453421.0	4794207.0	857.0	G_WTG76	1320.5	37.2	37.3	37.3	37.3	37.3	40.0	43.0	45.0	49.0	51.0	C
GSH2619	VNP	4.5	453425.0	4794103.0	801.0	G_WTG76	1373.4	37.4	37.6	37.6	37.6	37.6	40.0	43.0	45.0	49.0	51.0	C
GSH2577	VNP	4.5	453502.0	4794785.0	797.5	G_WTG74	1058.0	37.3	37.4	37.4	37.4	37.4	40.0	43.0	45.0	49.0	51.0	C
GSH2610	VNP	4.5	453739.0	4791724.0	736.9	G_WTG77	3262.7	36.3	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH2609	VNP	4.5	453768.0	4791520.0	647.2	G_WTG77	3453.8	36.7	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH2603	VNP	4.5	453773.0	4792539.0	866.2	G_WTG49	2471.0	36.9	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH2604	VNP	4.5	453810.0	4792360.0	911.4	G_WTG49	2630.7	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH2607	VNP	4.5	453831.0	4791066.0	667.3	G_WTG77	3885.0	36.2	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH2957	VNP	4.5	453892.0	4798017.0	982.6	G_WTG65	3203.6	35.0	35.2	35.2	35.2	35.2	40.0	43.0	45.0	49.0	51.0	C
GSH2605	VNP	4.5	453907.0	4791743.0	880.8	G_WTG77	3206.1	35.4	35.6	35.6	35.6	35.6	40.0	43.0	45.0	49.0	51.0	C
GSH2941	VNP	4.5	454021.0	4789879.0	1460.6	G_WTG46	5032.3	30.3	30.5	30.5	30.5	30.5	40.0	43.0	45.0	49.0	51.0	C
GSH2579	VNP	4.5	454588.0	4794079.0	566.6	G_WTG76	804.5	39.6	39.7	39.7	39.7	39.7	40.0	43.0	45.0	49.0	51.0	C
GSH2580	VNP	4.5	454684.0	4794092.0	652.6	G_WTG76	801.2	39.1	39.3	39.3	39.3	39.3	40.0	43.0	45.0	49.0	51.0	C
GSH2967	VNP	4.5	454736.0	4794098.0	699.9	G_WTG76	805.4	38.9	39.1	39.1	39.1	39.1	40.0	43.0	45.0	49.0	51.0	C
GSH2968	VNP	4.5	454781.0	4794104.0	741.7	G_WTG76	810.9	38.8	38.9	38.9	38.9	38.9	40.0	43.0	45.0	49.0	51.0	C
GSH2567	VNP	4.5	454801.0	4798889.0	793.7	G_WTG65	4013.6	34.9	35.1	35.1	35.1	35.1	40.0	43.0	45.0	49.0	51.0	C
GSH2969	VNP	4.5	454824.0	4794104.0	779.4	G_WTG76	823.9	38.6	38.8	38.8	38.8	38.8	40.0	43.0	45.0	49.0	51.0	C
GSH2566	VNP	4.5	454850.0	4798479.0	980.8	G_WTG65	3608.2	33.4	33.5	33.5	33.5	33.5	40.0	43.0	45.0	49.0	51.0	C
GSH2970	VNP	4.5	454871.0	4794114.0	825.6	G_WTG76	831.1	38.5	38.6	38.6	38.6	38.6	40.0	43.0	45.0	49.0	51.0	C
GSH2948	VNP	4.5	454876.0	4798358.0	1070.0	G_WTG65	3489.9	32.9	33.1	33.1	33.1	33.1	40.0	43.0	45.0	49.0	51.0	C
GSH2570	VNP	4.5	454895.0	4798136.0	1228.4	G_WTG65	3270.8	32.4	32.5	32.5	32.5	32.5	40.0	43.0	45.0	49.0	51.0	C
GSH2581	VNP	4.5	454907.0	4794125.0	862.7	G_WTG76	835.4	38.4	38.5	38.5	38.5	38.5	40.0	43.0	45.0	49.0	51.0	C
GSH2583	VNP	4.5	454986.0	4794217.0	836.8	G_WTG75	792.9	38.2	38.3	38.3	38.3	38.3	40.0	43.0	45.0	49.0	51.0	C
GSH2971	VNP	4.5	455001.0	4794130.0	859.9	G_WTG50	874.8	38.1	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH2584	VNP	4.5	455065.0	4794136.0	865.4	G_WTG50	904.1	37.8	38.0	38.0	38.0	38.0	40.0	43.0	45.0	49.0	51.0	C
GSH2947	VNP	4.5	455120.0	4796643.0	1031.7	G_WTG35	1848.5	34.8	34.9	34.9	34.9	34.9	40.0	43.0	45.0	49.0	51.0	C
GSH2972	VNP	4.5	455133.0	4794143.0	876.9	G_WTG50	938.6	37.6	37.7	37.7	37.7	37.7	40.0	43.0	45.0	49.0	51.0	C
GSH2571	VNP	4.5	455137.0	4796548.0	1049.5	G_WTG35	1763.8	35.0	35.1	35.1	35.1	35.1	40.0	43.0	45.0	49.0	51.0	C
GSH2572	VNP	4.5	455169.0	4796333.0	1113.7	G_WTG35	1574.6	35.6	35.6	35.6	35.6	35.6	40.0	43.0	45.0	49.0	51.0	C
GSH2966	VNP	4.5	455190.0	4796108.0	1186.4	G_WTG75	1379.7	36.4	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH2973	VNP	4.5	455234.0	4794154.0	904.1	G_WTG50	995.8	37.2	37.3	37.3	37.3	37.3	40.0	43.0	45.0	49.0	51.0	C
GSH2574	VNP	4.5	455250.0	4795718.0	874.6	G_WTG75	1086.2	38.2	38.2	38.2	38.2	38.2	40.0	43.0	45.0	49.0	51.0	C
GSH3006	VNP	4.5	455272.0	4794096.0	857.0	G_WTG50	1064.2	37.0	37.1	37.1	37.1	37.1	40.0	43.0	45.0	49.0	51.0	C
GSH2974	VNP	4.5	455276.0	4794157.0	916.9	G_WTG50	1022.8	36.9	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH3005	VNP	4.5	455297.0	4794101.0	868.9	G_WTG50	1077.6	36.8	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH2597	VNP	4.5	455304.0	4794193.0	959.1	G_WTG50	1018.0	36.7	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH2975	VNP	4.5	455313.0	4794165.0	934.8	G_WTG50	1043.7	36.7	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH3004	VNP	4.5	455321.0	4794106.0	881.0	G_WTG50	1090.7	36.7	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH2976	VNP	4.5	455345.0	4794223.0	999.7	G_WTG50	1029.0	36.5	36.6	36.6	36.6	36.6	40.0	43.0	45.0	49.0	51.0	C
GSH2585	VNP	4.5	455345.0	4794313.0	931.9	G_WTG75	973.7	36.9	37.0	37.0	37.0	37.0	40.0	43.0	45.0	49.0	51.0	C
GSH3003	VNP	4.5	455351.0	4794118.0	902.3	G_WTG50	1103.6	36.5	36.7	36.7	36.7	36.7	40.0	43.0	45.0	49.0	51.0	C
GSH3002	VNP	4.5	455380.0	4794122.0	916.4	G_WTG50	1122.0	36.4	36.5	36.5	36.5	36.5	40.0	43.0	45.0	49.0	51.0	C
GSH2588	VNP	4.5	455388.0	4794295.0	974.0	G_WTG75	1019.2	36.2	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH2587	VNP	4.5	455393.0	4794173.0	968.6	G_WTG50	1097.9	36.3	36.4	36.4	36.4	36.4	40.0	43.0	45.0	49.0	51.0	C
GSH2589	VNP	4.5	455400.0	4794219.0	1014.1	G_WTG50	1074.2	36.2	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH2586	VNP	4.5	455404.0	4794370.0	931.5	G_WTG75	991.5	36.7	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH2590	VNP	4.5	455413.0	4794179.0	981.6	G_WTG50	1109.4	36.1	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH3001	VNP	4.5	455420.0	4794126.0	935.6	G_WTG50	1149.0	36.2	36.3	36.3	36.3	36.3	40.0	43.0	45.0	49.0	51.0	C
GSH2993	VNP	4.5	455427.0	4794304.0	994.2	G_WTG75	1046.3	36.0	36.1	36.1	36.1	36.1	40.0	43.0	45.0	49.0	51.0	C
GSH2992	VNP	4.5	455432.0	4794269.0	1022.9	G_WTG75	1070.1	36.0	36.1	36.1	36.1	36.1	40.0	43.0	45.0	49.0	51.0	C
GSH2991	VNP	4.5	455433.0	4794245.0	1041.2	G_WTG75	1084.9	36.0	36.1	36.1	36.1	36.1	40.0	43.0	45.0	49.0	51.0	C
GSH2990	VNP	4.5	455446.0	4794172.0	988.2	G_WTG50	1139.5	36.0	36.1	36.1	36.1	36.1	40.0	43.0	45.0	49.0	51.0	C
GSH2989	VNP	4.5	455463.0	4794175.0	998.1	G_WTG50	1151.0	35.9	36.0	36.0	36.0	36.0	40.0	43.0	45.0	49.0	51.0	C
GSH2977	VNP	4.5	455467.0	4794543.0	873.8	G_WTG75	972.8	36.7	36.8	36.8	36.8	36.8	40.0	43.0	45.0	49.0	51.0	C
GSH3000	VNP	4.5	455470.0	4794133.0	963.3	G_WTG50	1182.7	35.9	36.0	36.0	36.0	36.0	40.0	43.0	45.0	49.0	51.0	C
GSH2988	VNP	4.5	455480.0	4794176.0	1006.3	G_WTG50	1163.8	35.8	35.9	35.9	35.9	35.9	40.0	43.0	45.0	49.0	51.0	C
GSH2978	VNP	4.5	455487.0	4794421.0	960.8	G_WTG75	1039.8	35.7	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH2999	VNP	4.5	455490.0	4794134.0	973.3	G_WTG50	1197.6	35.8	35.9	35.9	35.9	35.9	40.0	43.0	45.0	49.0	51.0	C
GSH2979	VNP	4.5	455492.0	4794392.0	982.9	G_WTG75	1057.4	35.7	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH2980	VNP	4.5	455498.0	4794365.0	1004.7	G_WTG75	1075.4	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2981	VNP	4.5	455500.0	4794349.0	1016.7	G_WTG75	1085.0	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2982	VNP	4.5	455504.0	4794323.0	1036.8	G_WTG75	1101.5	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2994	VNP	4.5	455505.0	4794133.0	979.4	G_WTG50	1209.9	35.7	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH2983	VNP	4.5	455505.0	4794299.0	1053.7	G_WTG75	1114.7	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2984	VNP	4.5	455509.0	4794277.0	1071.7	G_WTG75	1129.8	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2985	VNP	4.5	455512.0	4794261.0	1084.9	G_WTG75	1140.9	35.5	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2986	VNP	4.5	455513.0	4794241.0	1079.2	G_WTG50	1152.8	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2987	VNP	4.5	455525.0	4794183.0	1032.9	G_WTG50	1195.8	35.5	35.6	35.6	35.6	35.6	40.0	43.0	45.0	49.0	51.0	C
GSH2593	VNP	4.5	455529.0	4794074.0	940.2	G_WTG50	1265.7	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2595	VNP	4.5	455533.0	4794109.0	972.3	G_WTG50	1246.8	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2594	VNP	4.5	455535.0	4794092.0	958.7	G_WTG50	1259.0	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2596	VNP	4.5	455536.0	4794120.0	983.3	G_WTG50	1242.4	35.5	35.6	35.6	35.6	35.6	40.0	43.0	45.0	49.0	51.0	C
GSH2995	VNP	4.5	455543.0	4794060.0	935.7	G_WTG50	1285.4	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C

Noise Impact Summary Table

Point of Reception ID	Description	Height	UTM Coordinates		Distance to Nearest Project Turbine (m)	Nearest Project Turbine ID	Distance to Project Transformer Substation (m)	Calculated Sound Level at Selected Wind Speeds (dBA)					Sound Level Limit (dBA)					Compliance Test
			X	Y				6	7	8	9	10	6	7	8	9	10	
GSH2592	VNP	4.5	455546.0	4793954.0	850.0	G_WTG50	1357.9	35.8	35.9	35.9	35.9	35.9	40.0	43.0	45.0	49.0	51.0	C
GSH2996	VNP	4.5	455547.0	4794037.0	918.6	G_WTG50	1303.3	35.6	35.7	35.7	35.7	35.7	40.0	43.0	45.0	49.0	51.0	C
GSH2997	VNP	4.5	455551.0	4794014.0	901.8	G_WTG50	1321.4	35.6	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH2998	VNP	4.5	455555.0	4793986.0	881.2	G_WTG50	1342.9	35.7	35.8	35.8	35.8	35.8	40.0	43.0	45.0	49.0	51.0	C
GSH2416	VPR	4.5	438675.0	4788087.0	650.8	G_WTG63	17273.5	39.0	39.2	39.2	39.2	39.2	-	-	-	-	-	-
GSH2420	VPR	4.5	438798.0	4789310.0	833.4	G_WTG58	16713.9	38.4	38.5	38.5	38.5	38.5	-	-	-	-	-	-
GSH2438	VPR	4.5	438903.0	4790183.0	677.0	G_WTG84	16342.8	39.1	39.2	39.2	39.2	39.2	-	-	-	-	-	-
GSH2440	VPR	4.5	438938.0	4790565.0	534.3	G_WTG84	16203.4	39.5	39.6	39.6	39.6	39.6	-	-	-	-	-	-
GSH2437	VPR	4.5	439057.0	4790109.0	804.5	G_WTG54	16217.0	38.6	38.7	38.7	38.7	38.7	-	-	-	-	-	-
GSH2439	VPR	4.5	439106.0	4790344.0	692.1	G_WTG54	16102.4	38.9	39.0	39.0	39.0	39.0	-	-	-	-	-	-
GSH2414	VPR	4.5	440232.0	4787905.0	474.1	G_WTG52	15932.7	39.4	39.4	39.3	39.3	39.3	-	-	-	-	-	-
GSH2930	VPR	4.5	441419.0	4790176.0	997.8	G_WTG53	13954.2	34.6	34.7	34.7	34.7	34.7	-	-	-	-	-	-
GSH3069	VPR	4.5	441504.0	4790133.0	971.0	G_WTG53	13888.9	34.5	34.6	34.6	34.6	34.6	-	-	-	-	-	-
GSH2915	VPR	4.5	441539.0	4790651.0	635.3	G_WTG53	13687.1	37.1	37.3	37.3	37.3	37.3	-	-	-	-	-	-
GSH2913	VPR	4.5	441635.0	4790205.0	832.8	G_WTG53	13741.2	35.1	35.2	35.2	35.2	35.2	-	-	-	-	-	-
GSH2922	VPR	4.5	443187.0	4792335.0	855.5	G_WTG17	11650.5	35.1	35.2	35.2	35.2	35.2	-	-	-	-	-	-
GSH2885	VPR	4.5	443361.0	4792560.0	621.7	G_WTG17	11432.9	36.6	36.8	36.8	36.8	36.8	-	-	-	-	-	-
GSH2906	VPR	4.5	443374.0	4792373.0	669.9	G_WTG17	11459.7	36.2	36.3	36.3	36.3	36.3	-	-	-	-	-	-
GSH2886	VPR	4.5	444414.0	4792693.0	442.4	G_WTG17	10375.2	39.3	39.5	39.5	39.5	39.5	-	-	-	-	-	-
GSH2945	VPR	4.5	444970.0	4794218.0	646.5	G_WTG16	9608.5	38.4	38.5	38.5	38.5	38.5	-	-	-	-	-	-
GSH2868	VPR	4.5	445018.0	4795341.0	672.2	G_WTG20	9548.4	38.9	39.1	39.1	39.1	39.1	-	-	-	-	-	-
GSH2867	VPR	4.5	445146.0	4794872.0	636.0	G_WTG20	9409.5	39.0	39.1	39.1	39.1	39.1	-	-	-	-	-	-
GSH2881	VPR	4.5	445181.0	4794137.0	666.1	G_WTG21	9404.1	38.7	38.8	38.8	38.8	38.8	-	-	-	-	-	-
GSH2890	VPR	4.5	445416.0	4792472.0	825.1	G_WTG36	9452.1	36.7	36.9	36.9	36.9	36.9	-	-	-	-	-	-
GSH2902	VPR	4.5	445437.0	4791470.0	846.2	G_WTG38	9736.2	37.2	37.3	37.3	37.3	37.3	-	-	-	-	-	-
GSH2897	VPR	4.5	446572.0	4790890.0	432.6	G_WTG38	8926.3	42.0	42.2	42.2	42.2	42.2	-	-	-	-	-	-
GSH2863	VPR	4.5	446968.0	4795176.0	782.9	G_WTG22	7593.1	39.0	39.1	39.1	39.1	39.1	-	-	-	-	-	-
GSH2864	VPR	4.5	447005.0	4794947.0	695.6	G_WTG66	7550.7	38.9	39.0	39.0	39.0	39.0	-	-	-	-	-	-
GSH2865	VPR	4.5	447038.0	4794743.0	668.5	G_WTG66	7518.8	38.7	38.8	38.8	38.8	38.8	-	-	-	-	-	-
GSH2866	VPR	4.5	447076.0	4794527.0	710.7	G_WTG66	7487.9	38.3	38.4	38.4	38.4	38.4	-	-	-	-	-	-
GSH2878	VPR	4.5	447213.0	4793546.0	642.7	G_WTG86	7463.2	38.6	38.7	38.7	38.7	38.7	-	-	-	-	-	-
GSH2762	VPR	4.5	447469.0	4791984.0	507.5	G_WTG64	7656.4	39.2	39.4	39.4	39.4	39.4	-	-	-	-	-	-
GSH2764	VPR	4.5	447536.0	4792370.0	775.0	G_WTG64	7455.7	37.1	37.3	37.3	37.3	37.3	-	-	-	-	-	-
GSH2767	VPR	4.5	447579.0	4793554.0	434.0	G_WTG39	7101.9	40.0	40.1	40.1	40.1	40.1	-	-	-	-	-	-
GSH2907	VPR	4.5	447627.0	4790892.0	623.9	G_WTG78	7995.7	37.8	37.9	37.9	37.9	37.9	-	-	-	-	-	-
GSH2759	VPR	4.5	447756.0	4791074.0	810.0	G_WTG78	7793.6	37.0	37.1	37.1	37.1	37.1	-	-	-	-	-	-
GSH2955	VPR	4.5	447776.0	4790935.0	779.0	G_WTG78	7845.2	36.9	37.0	37.0	37.0	37.0	-	-	-	-	-	-
GSH2796	VPR	4.5	447883.0	4803520.0	701.2	G_WTG11	10914.3	38.0	38.1	38.1	38.1	38.1	-	-	-	-	-	-
GSH2795	VPR	4.5	448045.0	4802358.0	874.4	G_WTG13	9912.8	36.5	36.6	36.6	36.6	36.6	-	-	-	-	-	-
GSH3084	VPR	4.5	448237.0	4801796.0	660.8	G_WTG14	9365.6	37.7	37.8	37.8	37.8	37.8	-	-	-	-	-	-
GSH2672	VPR	4.5	448477.0	4800353.0	755.3	G_WTG15	8177.4	34.9	35.0	35.0	35.0	35.0	-	-	-	-	-	-
GSH2673	VPR	4.5	448494.0	4800147.0	792.2	G_WTG15	8028.2	34.3	34.4	34.4	34.4	34.4	-	-	-	-	-	-
GSH2766	VPR	4.5	449316.0	4793619.0	997.8	G_WTG81	5389.7	34.8	34.9	34.9	34.9	34.9	-	-	-	-	-	-
GSH2752	VPR	4.5	449605.0	4791116.0	722.4	G_WTG42	6220.6	37.8	37.9	37.9	37.9	37.9	-	-	-	-	-	-
GSH2649	VPR	4.5	449861.0	4805296.0	737.9	G_WTG04	11422.4	38.0	38.2	38.2	38.2	38.2	-	-	-	-	-	-
GSH2744	VPR	4.5	449887.0	4790942.0	732.5	G_WTG68	6109.4	37.6	37.7	37.7	37.7	37.7	-	-	-	-	-	-
GSH2646	VPR	4.5	449959.0	4804424.0	715.4	G_WTG72	10590.6	38.7	38.8	38.8	38.8	38.8	-	-	-	-	-	-
GSH3007	VPR	4.5	451623.0	4792852.0	684.8	G_WTG82	3567.0	38.3	38.5	38.5	38.5	38.5	-	-	-	-	-	-
GSH2618	VPR	4.5	451707.0	4792467.0	728.1	G_WTG47	3735.0	38.4	38.5	38.5	38.5	38.5	-	-	-	-	-	-
GSH2613	VPR	4.5	451971.0	4790619.0	737.7	G_WTG46	4986.0	36.2	36.3	36.3	36.3	36.3	-	-	-	-	-	-
GSH2645	VPR	4.5	451989.0	4803944.0	805.0	G_WTG06	9417.6	36.2	36.3	36.3	36.3	36.3	-	-	-	-	-	-
GSH2614	VPR	4.5	452009.0	4790468.0	690.7	G_WTG46	5096.6	36.2	36.4	36.4	36.4	36.4	-	-	-	-	-	-
GSH2634	VPR	4.5	452807.0	4798013.0	479.2	G_WTG31	3585.4	39.1	39.2	39.2	39.2	39.2	-	-	-	-	-	-
GSH2575	VPR	4.5	453290.0	4796624.0	799.2	G_WTG35	2152.4	38.3	38.4	38.4	38.4	38.4	-	-	-	-	-	-
GSH2601	VPR	4.5	453725.0	4792943.0	867.4	G_WTG49	2110.2	37.9	38.0	38.0	38.0	38.0	-	-	-	-	-	-
GSH2608	VPR	4.5	453806.0	4791216.0	620.4	G_WTG77	3742.7	36.7	36.9	36.9	36.9	36.9	-	-	-	-	-	-
GSH2564	VPR	4.5	454065.0	4800249.0	553.0	G_WTG67	5388.5	38.1	38.2	38.2	38.2	38.2	-	-	-	-	-	-
GSH2568	VPR	4.5	454778.0	4799081.0	769.2	G_WTG65	4204.0	35.4	35.6	35.6	35.6	35.6	-	-	-	-	-	-
GSH2582	VPR	4.5	454955.0	4794129.0	862.2	G_WTG50	853.2	38.2	38.3	38.3	38.3	38.3	-	-	-	-	-	-
GSH2576	VPR	4.5	455253.0	4795134.0	535.6	G_WTG75	741.4	41.8	41.8	41.8	41.8	41.8	-	-	-	-	-	-
GSH2598	VPR	4.5	455503.0	4793828.0	724.3	G_WTG50	1418.0	36.6	36.7	36.7	36.7	36.7	-	-	-	-	-	-

Appendix B: Site Plan

Lake Huron

South Huron

Legend

- Wind Energy Centre Study Area
- Goshen Transmission Line Study Area
- 120 m Area of Investigation
- Municipal Division
- Freeway
- Expressway / Highway
- Major Road
- Local Road
- Ramp

Natural Features

- Watercourse (ABCA, UTRCA)
- Watercourse (MNR)
- Waterbody
- Wooded Area
- Participating Receptor
- Non-participating Receptor
- Vacant Lot Participating Receptor
- Vacant Lot Non-participating Receptor

Project Location

- GE Turbine
- Permanent Meteorological Tower
- Access Road
- Collection Line
- Transmission Line
- Temporary Laydown Area
- Transformer Substation

Name

- Breaker Switch Station
- Disturbance Area
- Existing 500kV Transmission Line

Metres
0 500 1,000 1,500 2,000

1:50,000
UTM Zone 17N, NAD 83

Goshen Wind Energy Centre
Noise Modelling Assessment

Noise Modelling Site Plan

January 2013
Project 60155032

AECOM

Appendix C: Noise Contour Maps

Noise contours calculated at 4.5 metres above grade

Legend

- Wind Energy Centre Study Area
- Goshen Transmission Line Study Area
- 120 m Area of Investigation
- Municipal Division
- Freeway
- Expressway / Highway
- Major Road
- Local Road
- Ramp

Natural Features

- Watercourse (ABCA, UTRCA)
- Watercourse (MNR)
- Waterbody
- Wooded Area

Project Location

- GE Turbine
- Permanent Meteorological Tower
- Access Road
- Collection Line
- Transmission Line
- Temporary Laydown Area
- Transformer Substation

Name

- Breaker Switch Station
- Disturbance Area
- Existing 500kV Transmission Line

- Zurich Wind Farm Turbine
- Participating Receptor
- Non-participating Receptor
- Vacant Lot Participating Receptor
- Vacant Lot Non-participating Receptor

Noise Results

- 40.0 dBA

Lake Huron

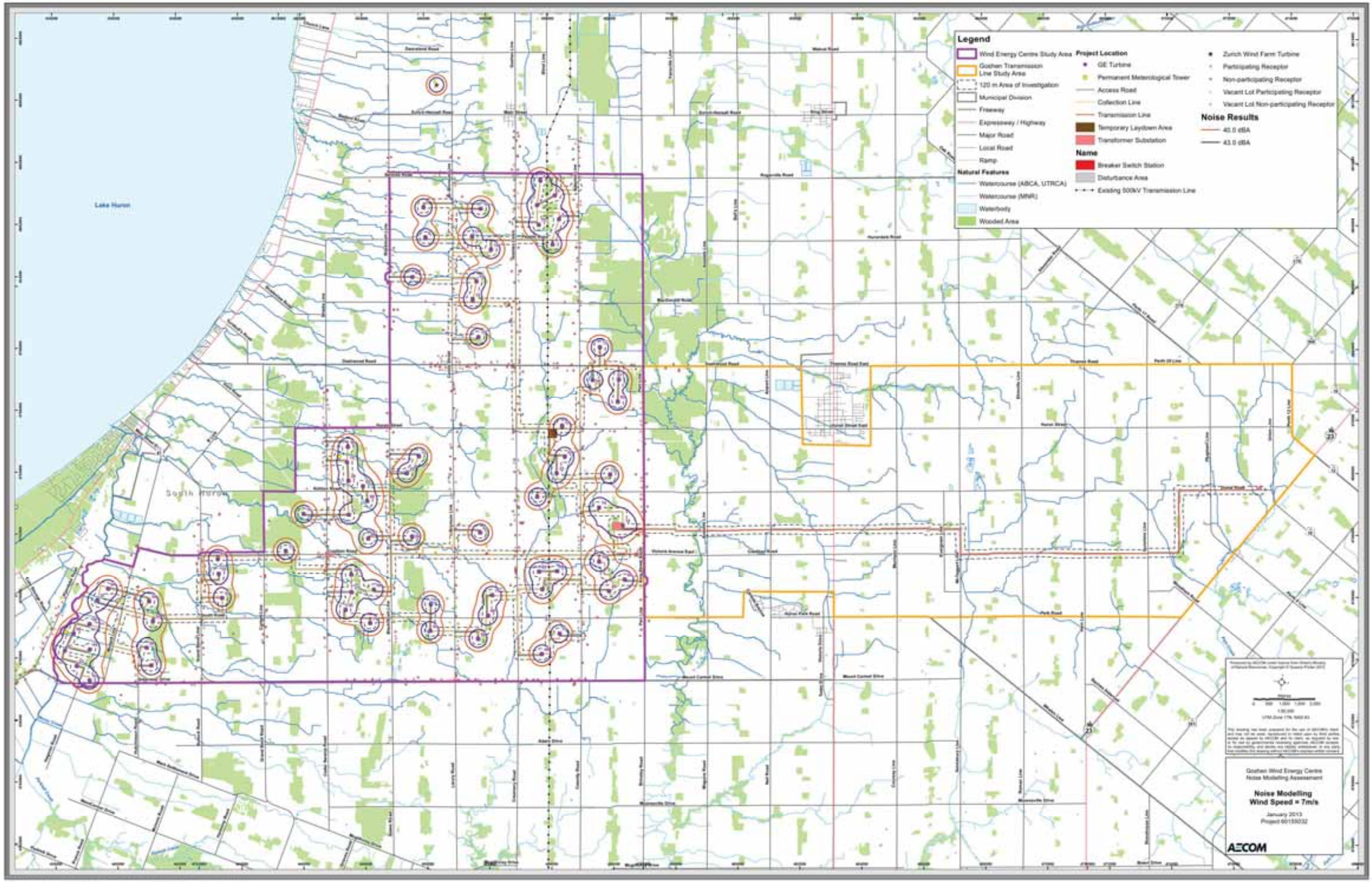
South Huron

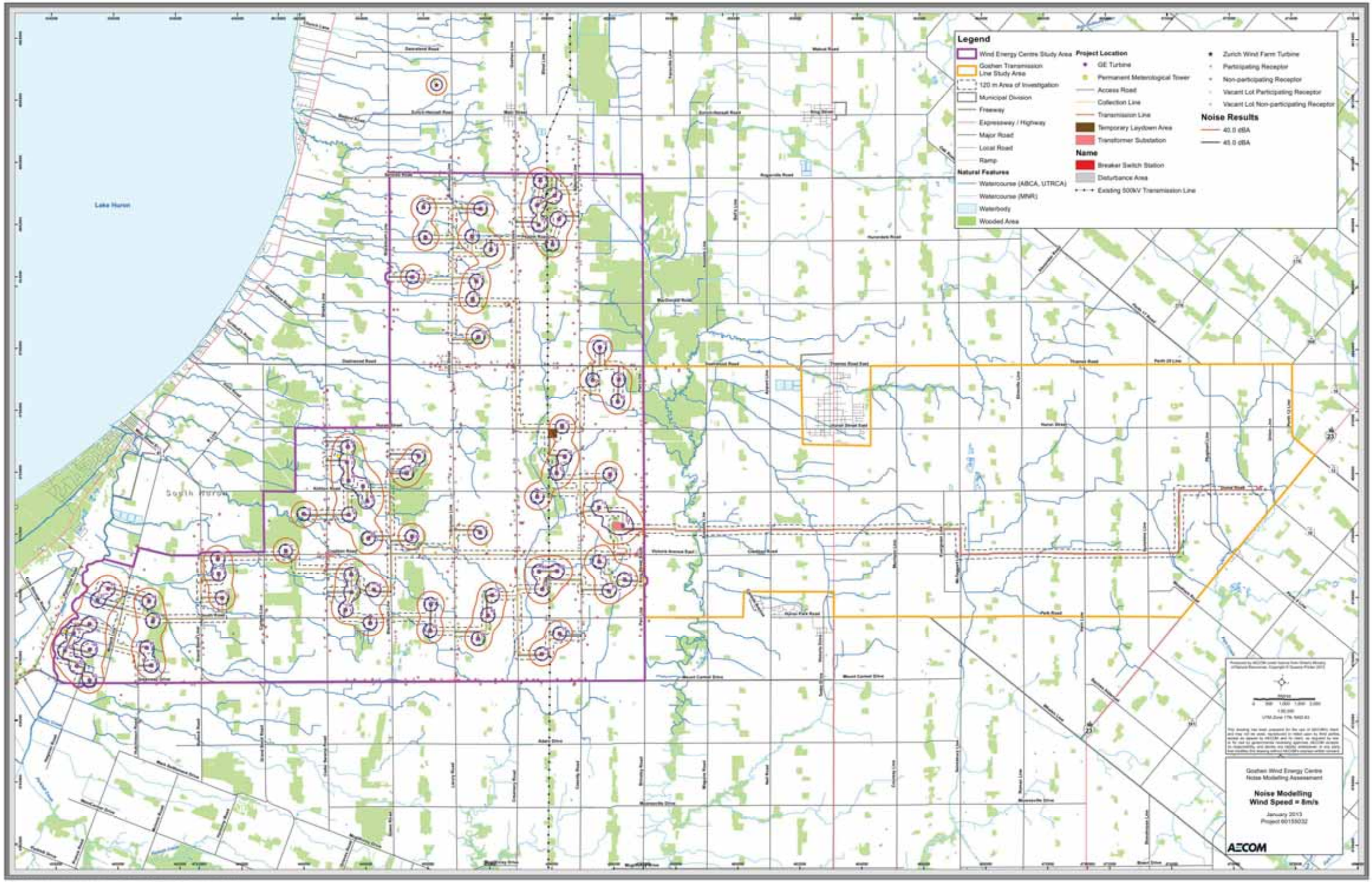
Goshen Wind Energy Centre
Noise Modelling Assessment

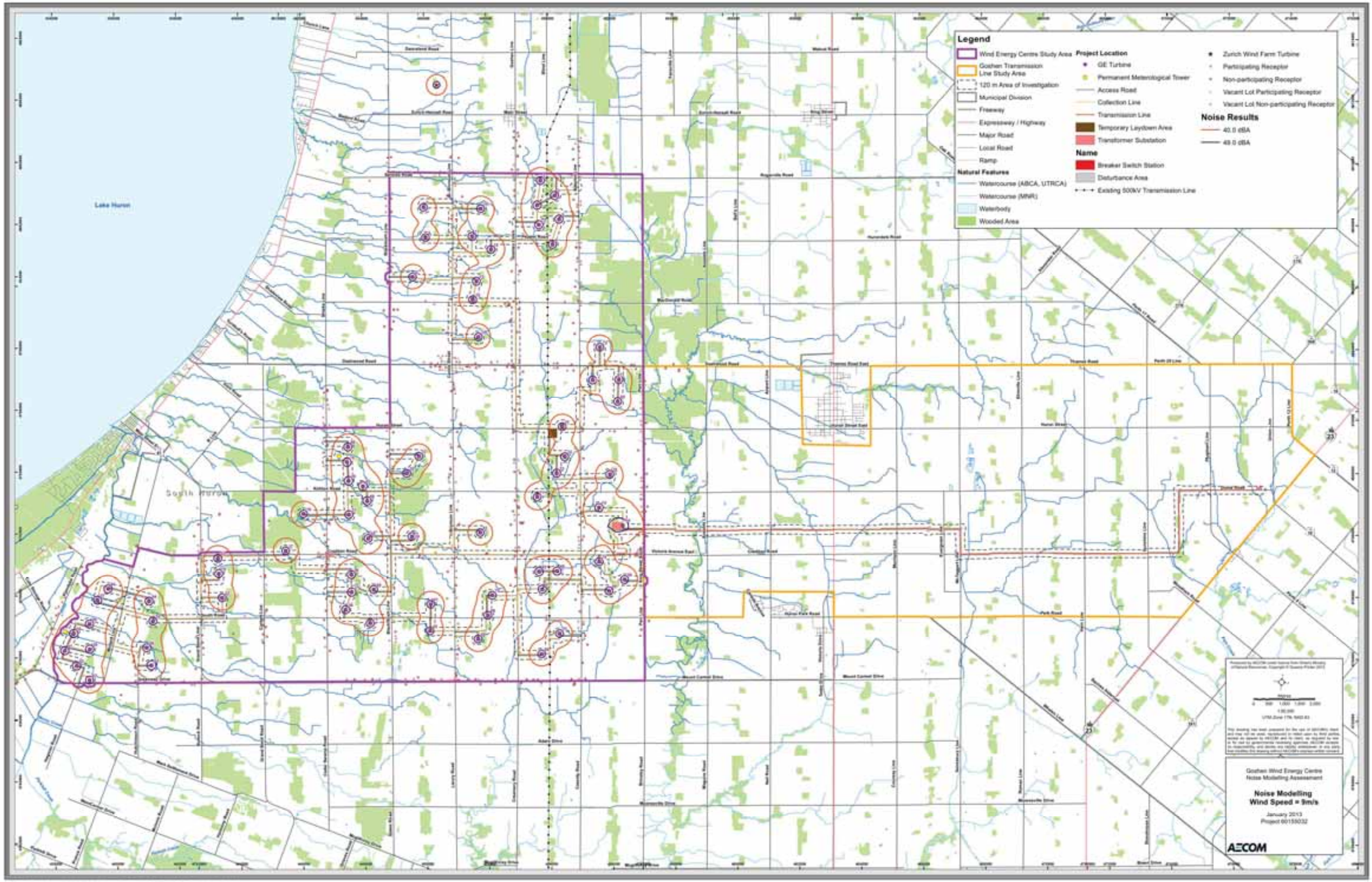
Noise Modelling
Wind Speed = 6m/s

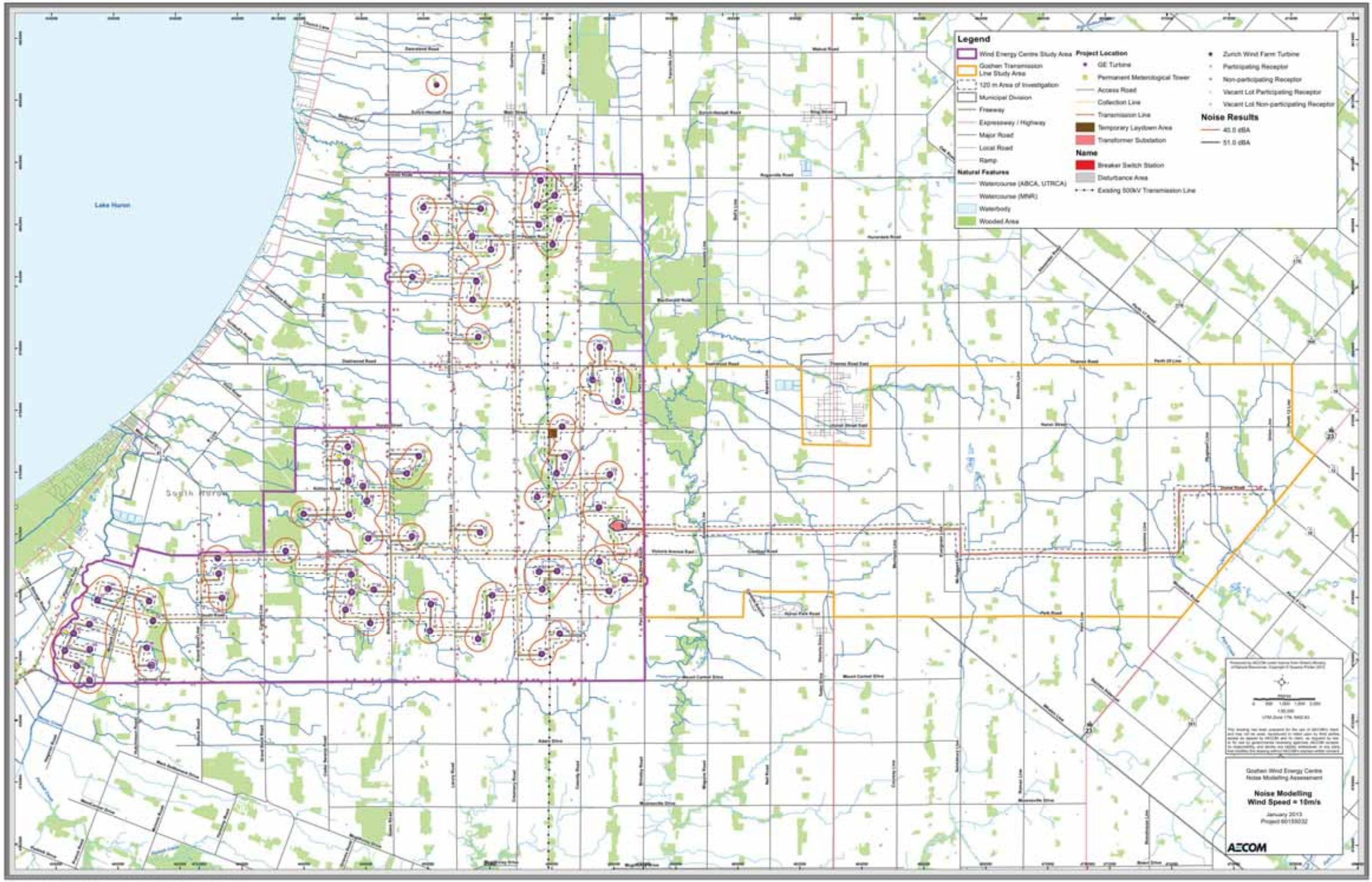
January 2013
Project 60159032

AECOM


Legend
Wind Energy Centre Study Area
Goshen Transmission Line Study Area
120 m Area of Investigation
Municipal Division
Freeway
Expressway / Highway
Major Road
Local Road
Ramp
Natural Features
Watercourse (ABCA, UTRCA)
Watercourse (MNR)
Waterbody
Wooded Area
Project Location
GE Turbine
Permanent Meteorological Tower
Access Road
Collection Line
Transmission Line
Temporary Laydown Area
Transformer Substation
Name
Breaker Switch Station
Disturbance Area
Existing 500kV Transmission Line
Zurich Wind Farm Turbine
Participating Receptor
Non-participating Receptor
Vacant Lot Participating Receptor
Vacant Lot Non-participating Receptor
Noise Results
40.0 dBA
43.0 dBA
Lake Huron
South Huron
Goshen Wind Energy Centre
Noise Modelling Assessment
Noise Modelling
Wind Speed = 7m/s
January 2013
Project 60155032
AECOM


Legend
Wind Energy Centre Study Area
Goshen Transmission Line Study Area
120 m Area of Investigation
Municipal Division
Freeway
Expressway / Highway
Major Road
Local Road
Ramp
Natural Features
Watercourse (ABCA, UTRCA)
Watercourse (MNR)
Waterbody
Wooded Area
Project Location
GE Turbine
Permanent Meteorological Tower
Access Road
Collection Line
Transmission Line
Temporary Laydown Area
Transformer Substation
Name
Breaker Switch Station
Disturbance Area
Existing 500kV Transmission Line
Zurich Wind Farm Turbine
Participating Receptor
Non-participating Receptor
Vacant Lot Participating Receptor
Vacant Lot Non-participating Receptor
Noise Results
40.0 dBA
45.0 dBA
Lake Huron
South Huron
Goshen Wind Energy Centre
Noise Modelling Assessment
Noise Modelling
Wind Speed = 8m/s
January 2013
Project 60159032
AECOM


Legend
Wind Energy Centre Study Area
Goshen Transmission Line Study Area
120 m Area of Investigation
Municipal Division
Freeway
Expressway / Highway
Major Road
Local Road
Ramp
Natural Features
Watercourse (ABCA, UTRCA)
Watercourse (MNR)
Waterbody
Wooded Area
Project Location
GE Turbine
Permanent Meteorological Tower
Access Road
Collection Line
Transmission Line
Temporary Laydown Area
Transformer Substation
Name
Breaker Switch Station
Disturbance Area
Existing 500kV Transmission Line
Zurich Wind Farm Turbine
Participating Receptor
Non-participating Receptor
Vacant Lot Participating Receptor
Vacant Lot Non-participating Receptor
Noise Results
40.0 dBA
49.0 dBA
Lake Huron
South Huron
Goshen Wind Energy Centre
Noise Modelling Assessment
Noise Modelling
Wind Speed = 9m/s
January 2013
Project 60155032
AECOM


Legend
Wind Energy Centre Study Area
Goshen Transmission Line Study Area
120 m Area of Investigation
Municipal Division
Freeway
Expressway / Highway
Major Road
Local Road
Ramp
Natural Features
Watercourse (ABCA, UTRCA)
Watercourse (MNR)
Waterbody
Wooded Area
Project Location
GE Turbine
Permanent Meteorological Tower
Access Road
Collection Line
Transmission Line
Temporary Laydown Area
Transformer Substation
Name
Breaker Switch Station
Disturbance Area
Existing 500kV Transmission Line
Zurich Wind Farm Turbine
Participating Receptor
Non-participating Receptor
Vacant Lot Participating Receptor
Vacant Lot Non-participating Receptor
Noise Results
40.0 dBA
51.0 dBA
Lake Huron
South Huron
Goshen Wind Energy Centre
Noise Modelling Assessment
Noise Modelling
Wind Speed = 10m/s
January 2013
Project 60159032
AECOM

Appendix D: Sample Calculations

Receiver
Name: Goshen
ID: GSH785
X: 440033.00
Y: 4787833.00
Z: 193.38

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG52"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	440156.00	4788373.00	269.63	0	32	81.5	81.5	0.0	0.0	66.0	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	18.6	18.6
2	440156.00	4788373.00	269.63	0	63	91.2	91.2	0.0	0.0	66.0	0.1	-3.0	0.0	0.0	0.0	0.0	-0.0	28.2	28.2
3	440156.00	4788373.00	269.63	0	125	94.8	94.8	0.0	0.0	66.0	0.2	1.5	0.0	0.0	0.0	0.0	-0.0	27.1	27.1
4	440156.00	4788373.00	269.63	0	250	94.2	94.2	0.0	0.0	66.0	0.6	0.1	0.0	0.0	0.0	0.0	-0.0	27.6	27.6
5	440156.00	4788373.00	269.63	0	500	94.6	94.6	0.0	0.0	66.0	1.1	-0.9	0.0	0.0	0.0	0.0	-0.0	28.5	28.5
6	440156.00	4788373.00	269.63	0	1000	99.1	99.1	0.0	0.0	66.0	2.1	-0.9	0.0	0.0	0.0	0.0	-0.0	32.0	32.0
7	440156.00	4788373.00	269.63	0	2000	98.0	98.0	0.0	0.0	66.0	5.4	-0.9	0.0	0.0	0.0	0.0	-0.0	27.5	27.5
8	440156.00	4788373.00	269.63	0	4000	88.8	88.8	0.0	0.0	66.0	18.3	-0.9	0.0	0.0	0.0	0.0	-0.0	5.4	5.4
9	440156.00	4788373.00	269.63	0	8000	71.2	71.2	0.0	0.0	66.0	65.4	-0.9	0.0	0.0	0.0	0.0	-0.0	-59.3	-59.3

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG53"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	442135.00	4790871.00	273.76	0	32	80.1	80.1	0.0	0.0	82.3	0.0	-3.9	0.0	0.0	0.0	0.0	-0.0	1.7	1.7
2	442135.00	4790871.00	273.76	0	63	89.6	89.6	0.0	0.0	82.3	0.4	-3.9	0.0	0.0	0.0	0.0	-0.0	10.8	10.8
3	442135.00	4790871.00	273.76	0	125	94.4	94.4	0.0	0.0	82.3	1.5	1.5	0.0	0.0	0.0	0.0	-0.0	9.1	9.1
4	442135.00	4790871.00	273.76	0	250	95.1	95.1	0.0	0.0	82.3	3.7	-0.2	0.0	0.0	0.0	0.0	-0.0	9.3	9.3
5	442135.00	4790871.00	273.76	0	500	96.1	96.1	0.0	0.0	82.3	7.0	-1.2	0.0	0.0	0.0	0.0	-0.0	7.9	7.9
6	442135.00	4790871.00	273.76	0	1000	96.9	96.9	0.0	0.0	82.3	13.7	-1.2	0.0	0.0	0.0	0.0	-0.0	2.1	2.1
7	442135.00	4790871.00	273.76	0	2000	95.2	95.2	0.0	0.0	82.3	35.8	-1.2	0.0	0.0	0.0	0.0	-0.0	-21.8	-21.8
8	442135.00	4790871.00	273.76	0	4000	88.6	88.6	0.0	0.0	82.3	121.2	-1.2	0.0	0.0	0.0	0.0	-0.0	-113.8	-113.8
9	442135.00	4790871.00	273.76	0	8000	70.0	70.0	0.0	0.0	82.3	432.3	-1.2	0.0	0.0	0.0	0.0	-0.0	-443.5	-443.5

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG54"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	439792.00	4790436.00	265.00	0	32	80.1	80.1	0.0	0.0	79.3	0.0	-3.1	0.0	0.0	0.0	0.0	-0.0	3.8	3.8
2	439792.00	4790436.00	265.00	0	63	89.6	89.6	0.0	0.0	79.3	0.3	-3.1	0.0	0.0	0.0	0.0	-0.0	13.1	13.1
3	439792.00	4790436.00	265.00	0	125	94.4	94.4	0.0	0.0	79.3	1.1	1.8	0.0	0.0	0.0	0.0	-0.0	12.3	12.3
4	439792.00	4790436.00	265.00	0	250	95.1	95.1	0.0	0.0	79.3	2.6	0.1	0.0	0.0	0.0	0.0	-0.0	13.1	13.1
5	439792.00	4790436.00	265.00	0	500	96.1	96.1	0.0	0.0	79.3	5.0	-0.9	0.0	0.0	0.0	0.0	-0.0	12.7	12.7
6	439792.00	4790436.00	265.00	0	1000	96.9	96.9	0.0	0.0	79.3	9.7	-0.9	0.0	0.0	0.0	0.0	-0.0	8.8	8.8
7	439792.00	4790436.00	265.00	0	2000	95.2	95.2	0.0	0.0	79.3	25.4	-0.9	0.0	0.0	0.0	0.0	-0.0	-8.6	-8.6
8	439792.00	4790436.00	265.00	0	4000	88.6	88.6	0.0	0.0	79.3	85.8	-0.9	0.0	0.0	0.0	0.0	-0.0	-75.6	-75.6
9	439792.00	4790436.00	265.00	0	8000	70.0	70.0	0.0	0.0	79.3	306.0	-0.9	0.0	0.0	0.0	0.0	-0.0	-314.4	-314.4

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG55"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	440005.00	4789811.00	266.23	0	32	80.1	80.1	0.0	0.0	76.9	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	6.2	6.2
2	440005.00	4789811.00	266.23	0	63	89.6	89.6	0.0	0.0	76.9	0.2	-3.0	0.0	0.0	0.0	0.0	-0.0	15.5	15.5
3	440005.00	4789811.00	266.23	0	125	94.4	94.4	0.0	0.0	76.9	0.8	1.8	0.0	0.0	0.0	0.0	-0.0	14.9	14.9
4	440005.00	4789811.00	266.23	0	250	95.1	95.1	0.0	0.0	76.9	2.0	0.1	0.0	0.0	0.0	0.0	-0.0	16.1	16.1
5	440005.00	4789811.00	266.23	0	500	96.1	96.1	0.0	0.0	76.9	3.8	-0.9	0.0	0.0	0.0	0.0	-0.0	16.3	16.3
6	440005.00	4789811.00	266.23	0	1000	96.9	96.9	0.0	0.0	76.9	7.3	-0.9	0.0	0.0	0.0	0.0	-0.0	13.5	13.5
7	440005.00	4789811.00	266.23	0	2000	95.2	95.2	0.0	0.0	76.9	19.2	-0.9	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0
8	440005.00	4789811.00	266.23	0	4000	88.6	88.6	0.0	0.0	76.9	64.9	-0.9	0.0	0.0	0.0	0.0	-0.0	-52.4	-52.4
9	440005.00	4789811.00	266.23	0	8000	70.0	70.0	0.0	0.0	76.9	231.6	-0.9	0.0	0.0	0.0	0.0	-0.0	-237.6	-237.6

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG56"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	439925.00	4788922.00	266.37	0	32	80.1	80.1	0.0	0.0	71.8	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	11.3	11.3

(Wind Speed = 6m/s)

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG56"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
2	439925.00	4788922.00	266.37	0	63	89.6	89.6	0.0	0.0	71.8	0.1	-3.0	0.0	0.0	0.0	0.0	-0.0	20.7	20.7
3	439925.00	4788922.00	266.37	0	125	94.4	94.4	0.0	0.0	71.8	0.4	1.8	0.0	0.0	0.0	0.0	-0.0	20.4	20.4
4	439925.00	4788922.00	266.37	0	250	95.1	95.1	0.0	0.0	71.8	1.1	0.1	0.0	0.0	0.0	0.0	-0.0	22.1	22.1
5	439925.00	4788922.00	266.37	0	500	96.1	96.1	0.0	0.0	71.8	2.1	-0.9	0.0	0.0	0.0	0.0	-0.0	23.1	23.1
6	439925.00	4788922.00	266.37	0	1000	96.9	96.9	0.0	0.0	71.8	4.1	-0.9	0.0	0.0	0.0	0.0	-0.0	21.9	21.9
7	439925.00	4788922.00	266.37	0	2000	95.2	95.2	0.0	0.0	71.8	10.6	-0.9	0.0	0.0	0.0	0.0	-0.0	13.7	13.7
8	439925.00	4788922.00	266.37	0	4000	88.6	88.6	0.0	0.0	71.8	36.0	-0.9	0.0	0.0	0.0	0.0	-0.0	-18.3	-18.3
9	439925.00	4788922.00	266.37	0	8000	70.0	70.0	0.0	0.0	71.8	128.3	-0.9	0.0	0.0	0.0	0.0	-0.0	-129.2	-129.2

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG57"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	438121.00	4790232.00	260.50	0	32	80.1	80.1	0.0	0.0	80.7	0.0	-3.5	0.0	0.0	0.0	0.0	-0.0	2.9	2.9
2	438121.00	4790232.00	260.50	0	63	89.6	89.6	0.0	0.0	80.7	0.3	-3.5	0.0	0.0	0.0	0.0	-0.0	12.1	12.1
3	438121.00	4790232.00	260.50	0	125	94.4	94.4	0.0	0.0	80.7	1.2	1.6	0.0	0.0	0.0	0.0	-0.0	10.8	10.8
4	438121.00	4790232.00	260.50	0	250	95.1	95.1	0.0	0.0	80.7	3.1	-0.1	0.0	0.0	0.0	0.0	-0.0	11.4	11.4
5	438121.00	4790232.00	260.50	0	500	96.1	96.1	0.0	0.0	80.7	5.8	-1.1	0.0	0.0	0.0	0.0	-0.0	10.6	10.6
6	438121.00	4790232.00	260.50	0	1000	96.9	96.9	0.0	0.0	80.7	11.4	-1.1	0.0	0.0	0.0	0.0	-0.0	5.9	5.9
7	438121.00	4790232.00	260.50	0	2000	95.2	95.2	0.0	0.0	80.7	29.8	-1.1	0.0	0.0	0.0	0.0	-0.0	-14.3	-14.3
8	438121.00	4790232.00	260.50	0	4000	88.6	88.6	0.0	0.0	80.7	100.6	-1.1	0.0	0.0	0.0	0.0	-0.0	-91.7	-91.7
9	438121.00	4790232.00	260.50	0	8000	70.0	70.0	0.0	0.0	80.7	359.0	-1.1	0.0	0.0	0.0	0.0	-0.0	-368.7	-368.7

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG58"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	437973.00	4789428.00	260.00	0	32	80.1	80.1	0.0	0.0	79.3	0.0	-3.1	0.0	0.0	0.0	0.0	-0.0	3.9	3.9
2	437973.00	4789428.00	260.00	0	63	89.6	89.6	0.0	0.0	79.3	0.3	-3.1	0.0	0.0	0.0	0.0	-0.0	13.1	13.1
3	437973.00	4789428.00	260.00	0	125	94.4	94.4	0.0	0.0	79.3	1.0	1.8	0.0	0.0	0.0	0.0	-0.0	12.3	12.3
4	437973.00	4789428.00	260.00	0	250	95.1	95.1	0.0	0.0	79.3	2.6	0.1	0.0	0.0	0.0	0.0	-0.0	13.1	13.1
5	437973.00	4789428.00	260.00	0	500	96.1	96.1	0.0	0.0	79.3	5.0	-0.9	0.0	0.0	0.0	0.0	-0.0	12.8	12.8
6	437973.00	4789428.00	260.00	0	1000	96.9	96.9	0.0	0.0	79.3	9.6	-0.9	0.0	0.0	0.0	0.0	-0.0	8.9	8.9
7	437973.00	4789428.00	260.00	0	2000	95.2	95.2	0.0	0.0	79.3	25.3	-0.9	0.0	0.0	0.0	0.0	-0.0	-8.5	-8.5
8	437973.00	4789428.00	260.00	0	4000	88.6	88.6	0.0	0.0	79.3	85.5	-0.9	0.0	0.0	0.0	0.0	-0.0	-75.3	-75.3
9	437973.00	4789428.00	260.00	0	8000	70.0	70.0	0.0	0.0	79.3	304.9	-0.9	0.0	0.0	0.0	0.0	-0.0	-313.3	-313.3

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG59"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	438098.00	4788616.00	260.36	0	32	80.1	80.1	0.0	0.0	77.4	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	5.7	5.7
2	438098.00	4788616.00	260.36	0	63	89.6	89.6	0.0	0.0	77.4	0.2	-3.0	0.0	0.0	0.0	0.0	-0.0	15.0	15.0
3	438098.00	4788616.00	260.36	0	125	94.4	94.4	0.0	0.0	77.4	0.8	1.8	0.0	0.0	0.0	0.0	-0.0	14.4	14.4
4	438098.00	4788616.00	260.36	0	250	95.1	95.1	0.0	0.0	77.4	2.1	0.1	0.0	0.0	0.0	0.0	-0.0	15.5	15.5
5	438098.00	4788616.00	260.36	0	500	96.1	96.1	0.0	0.0	77.4	4.0	-0.9	0.0	0.0	0.0	0.0	-0.0	15.6	15.6
6	438098.00	4788616.00	260.36	0	1000	96.9	96.9	0.0	0.0	77.4	7.7	-0.9	0.0	0.0	0.0	0.0	-0.0	12.7	12.7
7	438098.00	4788616.00	260.36	0	2000	95.2	95.2	0.0	0.0	77.4	20.3	-0.9	0.0	0.0	0.0	0.0	-0.0	-1.6	-1.6
8	438098.00	4788616.00	260.36	0	4000	88.6	88.6	0.0	0.0	77.4	68.5	-0.9	0.0	0.0	0.0	0.0	-0.0	-56.4	-56.4
9	438098.00	4788616.00	260.36	0	8000	70.0	70.0	0.0	0.0	77.4	244.4	-0.9	0.0	0.0	0.0	0.0	-0.0	-250.9	-250.9

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG60"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	437501.00	4789050.00	260.00	0	32	80.1	80.1	0.0	0.0	80.0	0.0	-3.3	0.0	0.0	0.0	0.0	-0.0	3.4	3.4
2	437501.00	4789050.00	260.00	0	63	89.6	89.6	0.0	0.0	80.0	0.3	-3.3	0.0	0.0	0.0	0.0	-0.0	12.6	12.6
3	437501.00	4789050.00	260.00	0	125	94.4	94.4	0.0	0.0	80.0	1.1	1.7	0.0	0.0	0.0	0.0	-0.0	11.6	11.6
4	437501.00	4789050.00	260.00	0	250	95.1	95.1	0.0	0.0	80.0	2.8	-0.0	0.0	0.0	0.0	0.0	-0.0	12.3	12.3
5	437501.00	4789050.00	260.00	0	500	96.1	96.1	0.0	0.0	80.0	5.3	-1.0	0.0	0.0	0.0	0.0	-0.0	11.8	11.8
6	437501.00	4789050.00	260.00	0	1000	96.9	96.9	0.0	0.0	80.0	10.4	-1.0	0.0	0.0	0.0	0.0	-0.0	7.5	7.5
7	437501.00	4789050.00	260.00	0	2000	95.2	95.2	0.0	0.0	80.0	27.3	-1.0	0.0	0.0	0.0	0.0	-0.0	-11.0	-11.0
8	437501.00	4789050.00	260.00	0	4000	88.6	88.6	0.0	0.0	80.0	92.2	-1.0	0.0	0.0	0.0	0.0	-0.0	-82.6	-82.6
9	437501.00	4789050.00	260.00	0	8000	70.0	70.0	0.0	0.0	80.0	328.8	-1.0	0.0	0.0	0.0	0.0	-0.0	-337.8	-337.8

(Wind Speed = 6m/s)

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG61"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	437294.00	4788459.00	260.00	0	32	80.1	80.1	0.0	0.0	80.0	0.0	-3.3	0.0	0.0	0.0	0.0	-0.0	3.4	3.4
2	437294.00	4788459.00	260.00	0	63	89.6	89.6	0.0	0.0	80.0	0.3	-3.3	0.0	0.0	0.0	0.0	-0.0	12.6	12.6
3	437294.00	4788459.00	260.00	0	125	94.4	94.4	0.0	0.0	80.0	1.1	1.7	0.0	0.0	0.0	0.0	-0.0	11.6	11.6
4	437294.00	4788459.00	260.00	0	250	95.1	95.1	0.0	0.0	80.0	2.8	-0.0	0.0	0.0	0.0	0.0	-0.0	12.3	12.3
5	437294.00	4788459.00	260.00	0	500	96.1	96.1	0.0	0.0	80.0	5.3	-1.0	0.0	0.0	0.0	0.0	-0.0	11.8	11.8
6	437294.00	4788459.00	260.00	0	1000	96.9	96.9	0.0	0.0	80.0	10.4	-1.0	0.0	0.0	0.0	0.0	-0.0	7.5	7.5
7	437294.00	4788459.00	260.00	0	2000	95.2	95.2	0.0	0.0	80.0	27.3	-1.0	0.0	0.0	0.0	0.0	-0.0	-11.1	-11.1
8	437294.00	4788459.00	260.00	0	4000	88.6	88.6	0.0	0.0	80.0	92.2	-1.0	0.0	0.0	0.0	0.0	-0.0	-82.6	-82.6
9	437294.00	4788459.00	260.00	0	8000	70.0	70.0	0.0	0.0	80.0	328.8	-1.0	0.0	0.0	0.0	0.0	-0.0	-337.8	-337.8

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG62"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	437743.00	4788017.00	260.00	0	32	80.1	80.1	0.0	0.0	78.2	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	4.9	4.9
2	437743.00	4788017.00	260.00	0	63	89.6	89.6	0.0	0.0	78.2	0.2	-3.0	0.0	0.0	0.0	0.0	-0.0	14.1	14.1
3	437743.00	4788017.00	260.00	0	125	94.4	94.4	0.0	0.0	78.2	0.9	1.8	0.0	0.0	0.0	0.0	-0.0	13.5	13.5
4	437743.00	4788017.00	260.00	0	250	95.1	95.1	0.0	0.0	78.2	2.3	0.1	0.0	0.0	0.0	0.0	-0.0	14.5	14.5
5	437743.00	4788017.00	260.00	0	500	96.1	96.1	0.0	0.0	78.2	4.4	-0.9	0.0	0.0	0.0	0.0	-0.0	14.4	14.4
6	437743.00	4788017.00	260.00	0	1000	96.9	96.9	0.0	0.0	78.2	8.5	-0.9	0.0	0.0	0.0	0.0	-0.0	11.1	11.1
7	437743.00	4788017.00	260.00	0	2000	95.2	95.2	0.0	0.0	78.2	22.3	-0.9	0.0	0.0	0.0	0.0	-0.0	-4.4	-4.4
8	437743.00	4788017.00	260.00	0	4000	88.6	88.6	0.0	0.0	78.2	75.4	-0.9	0.0	0.0	0.0	0.0	-0.0	-64.1	-64.1
9	437743.00	4788017.00	260.00	0	8000	70.0	70.0	0.0	0.0	78.2	268.9	-0.9	0.0	0.0	0.0	0.0	-0.0	-276.2	-276.2

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG63"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	438227.00	4787615.00	261.81	0	32	80.1	80.1	0.0	0.0	76.2	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	6.9	6.9
2	438227.00	4787615.00	261.81	0	63	89.6	89.6	0.0	0.0	76.2	0.2	-3.0	0.0	0.0	0.0	0.0	-0.0	16.2	16.2
3	438227.00	4787615.00	261.81	0	125	94.4	94.4	0.0	0.0	76.2	0.7	1.8	0.0	0.0	0.0	0.0	-0.0	15.7	15.7
4	438227.00	4787615.00	261.81	0	250	95.1	95.1	0.0	0.0	76.2	1.8	0.1	0.0	0.0	0.0	0.0	-0.0	17.0	17.0
5	438227.00	4787615.00	261.81	0	500	96.1	96.1	0.0	0.0	76.2	3.5	-0.9	0.0	0.0	0.0	0.0	-0.0	17.3	17.3
6	438227.00	4787615.00	261.81	0	1000	96.9	96.9	0.0	0.0	76.2	6.7	-0.9	0.0	0.0	0.0	0.0	-0.0	14.9	14.9
7	438227.00	4787615.00	261.81	0	2000	95.2	95.2	0.0	0.0	76.2	17.7	-0.9	0.0	0.0	0.0	0.0	-0.0	2.2	2.2
8	438227.00	4787615.00	261.81	0	4000	88.6	88.6	0.0	0.0	76.2	59.7	-0.9	0.0	0.0	0.0	0.0	-0.0	-46.4	-46.4
9	438227.00	4787615.00	261.81	0	8000	70.0	70.0	0.0	0.0	76.2	213.0	-0.9	0.0	0.0	0.0	0.0	-0.0	-218.3	-218.3

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG79"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	441914.00	4791634.00	272.76	0	32	80.1	80.1	0.0	0.0	83.5	0.0	-4.2	0.0	0.0	0.0	0.0	-0.0	0.8	0.8
2	441914.00	4791634.00	272.76	0	63	89.6	89.6	0.0	0.0	83.5	0.4	-4.2	0.0	0.0	0.0	0.0	-0.0	9.8	9.8
3	441914.00	4791634.00	272.76	0	125	94.4	94.4	0.0	0.0	83.5	1.7	1.4	0.0	0.0	0.0	0.0	-0.0	7.7	7.7
4	441914.00	4791634.00	272.76	0	250	95.1	95.1	0.0	0.0	83.5	4.2	-0.3	0.0	0.0	0.0	0.0	-0.0	7.6	7.6
5	441914.00	4791634.00	272.76	0	500	96.1	96.1	0.0	0.0	83.5	8.1	-1.3	0.0	0.0	0.0	0.0	-0.0	5.8	5.8
6	441914.00	4791634.00	272.76	0	1000	96.9	96.9	0.0	0.0	83.5	15.7	-1.3	0.0	0.0	0.0	0.0	-0.0	-1.1	-1.1
7	441914.00	4791634.00	272.76	0	2000	95.2	95.2	0.0	0.0	83.5	41.1	-1.3	0.0	0.0	0.0	0.0	-0.0	-28.2	-28.2
8	441914.00	4791634.00	272.76	0	4000	88.6	88.6	0.0	0.0	83.5	139.1	-1.3	0.0	0.0	0.0	0.0	-0.0	-132.8	-132.8
9	441914.00	4791634.00	272.76	0	8000	70.0	70.0	0.0	0.0	83.5	496.3	-1.3	0.0	0.0	0.0	0.0	-0.0	-508.6	-508.6

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG83"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	441815.00	4792131.00	273.70	0	32	80.1	80.1	0.0	0.0	84.4	0.0	-4.4	0.0	0.0	0.0	0.0	-0.0	0.1	0.1
2	441815.00	4792131.00	273.70	0	63	89.6	89.6	0.0	0.0	84.4	0.5	-4.4	0.0	0.0	0.0	0.0	-0.0	9.1	9.1
3	441815.00	4792131.00	273.70	0	125	94.4	94.4	0.0	0.0	84.4	1.9	1.4	0.0	0.0	0.0	0.0	-0.0	6.8	6.8
4	441815.00	4792131.00	273.70	0	250	95.1	95.1	0.0	0.0	84.4	4.6	-0.3	0.0	0.0	0.0	0.0	-0.0	6.4	6.4
5	441815.00	4792131.00	273.70	0	500	96.1	96.1	0.0	0.0	84.4	8.8	-1.3	0.0	0.0	0.0	0.0	-0.0	4.2	4.2
6	441815.00	4792131.00	273.70	0	1000	96.9	96.9	0.0	0.0	84.4	17.2	-1.3	0.0	0.0	0.0	0.0	-0.0	-3.4	-3.4
7	441815.00	4792131.00	273.70	0	2000	95.2	95.2	0.0	0.0	84.4	45.1	-1.3	0.0	0.0	0.0	0.0	-0.0	-33.0	-33.0
8	441815.00	4792131.00	273.70	0	4000	88.6	88.6	0.0	0.0	84.4	152.6	-1.3	0.0	0.0	0.0	0.0	-0.0	-147.1	-147.1
9	441815.00	4792131.00	273.70	0	8000	70.0	70.0	0.0	0.0	84.4	544.5	-1.3	0.0	0.0	0.0	0.0	-0.0	-557.5	-557.5

(Wind Speed = 6m/s)

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG84"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	438410.00	4790647.00	260.41	0	32	80.1	80.1	0.0	0.0	81.2	0.0	-3.7	0.0	0.0	0.0	0.0	-0.0	2.5	2.5
2	438410.00	4790647.00	260.41	0	63	89.6	89.6	0.0	0.0	81.2	0.3	-3.7	0.0	0.0	0.0	0.0	-0.0	11.7	11.7
3	438410.00	4790647.00	260.41	0	125	94.4	94.4	0.0	0.0	81.2	1.3	1.6	0.0	0.0	0.0	0.0	-0.0	10.3	10.3
4	438410.00	4790647.00	260.41	0	250	95.1	95.1	0.0	0.0	81.2	3.3	-0.1	0.0	0.0	0.0	0.0	-0.0	10.7	10.7
5	438410.00	4790647.00	260.41	0	500	96.1	96.1	0.0	0.0	81.2	6.2	-1.1	0.0	0.0	0.0	0.0	-0.0	9.8	9.8
6	438410.00	4790647.00	260.41	0	1000	96.9	96.9	0.0	0.0	81.2	12.0	-1.1	0.0	0.0	0.0	0.0	-0.0	4.7	4.7
7	438410.00	4790647.00	260.41	0	2000	95.2	95.2	0.0	0.0	81.2	31.5	-1.1	0.0	0.0	0.0	0.0	-0.0	-16.4	-16.4
8	438410.00	4790647.00	260.41	0	4000	88.6	88.6	0.0	0.0	81.2	106.6	-1.1	0.0	0.0	0.0	0.0	-0.0	-98.1	-98.1
9	438410.00	4790647.00	260.41	0	8000	70.0	70.0	0.0	0.0	81.2	380.2	-1.1	0.0	0.0	0.0	0.0	-0.0	-390.3	-390.3

(Wind Speed = 6m/s)

Receiver
Name: Goshen
ID: GSH2053
X: 455299.00
Y: 4794758.00
Z: 254.50

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG31"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	452335.00	4797930.00	330.26	0	32	80.1	80.1	0.0	0.0	83.8	0.0	-4.3	0.0	0.0	0.0	0.0	-0.0	0.6	0.6
2	452335.00	4797930.00	330.26	0	63	89.6	89.6	0.0	0.0	83.8	0.4	-4.3	0.0	0.0	0.0	0.0	-0.0	9.7	9.7
3	452335.00	4797930.00	330.26	0	125	94.4	94.4	0.0	0.0	83.8	1.7	1.4	0.0	0.0	0.0	0.0	-0.0	7.5	7.5
4	452335.00	4797930.00	330.26	0	250	95.1	95.1	0.0	0.0	83.8	4.3	-0.3	0.0	0.0	0.0	0.0	-0.0	7.3	7.3
5	452335.00	4797930.00	330.26	0	500	96.1	96.1	0.0	0.0	83.8	8.3	-1.3	0.0	0.0	0.0	0.0	-0.0	5.4	5.4
6	452335.00	4797930.00	330.26	0	1000	96.9	96.9	0.0	0.0	83.8	16.1	-1.3	0.0	0.0	0.0	0.0	-0.0	-1.6	-1.6
7	452335.00	4797930.00	330.26	0	2000	95.2	95.2	0.0	0.0	83.8	42.1	-1.3	0.0	0.0	0.0	0.0	-0.0	-29.4	-29.4
8	452335.00	4797930.00	330.26	0	4000	88.6	88.6	0.0	0.0	83.8	142.4	-1.3	0.0	0.0	0.0	0.0	-0.0	-136.3	-136.3
9	452335.00	4797930.00	330.26	0	8000	70.0	70.0	0.0	0.0	83.8	508.0	-1.3	0.0	0.0	0.0	0.0	-0.0	-520.5	-520.5

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG32"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	452553.00	4796971.00	325.00	0	32	80.1	80.1	0.0	0.0	82.0	0.0	-3.8	0.0	0.0	0.0	0.0	-0.0	2.0	2.0
2	452553.00	4796971.00	325.00	0	63	89.6	89.6	0.0	0.0	82.0	0.4	-3.8	0.0	0.0	0.0	0.0	-0.0	11.1	11.1
3	452553.00	4796971.00	325.00	0	125	94.4	94.4	0.0	0.0	82.0	1.4	1.5	0.0	0.0	0.0	0.0	-0.0	9.5	9.5
4	452553.00	4796971.00	325.00	0	250	95.1	95.1	0.0	0.0	82.0	3.5	-0.2	0.0	0.0	0.0	0.0	-0.0	9.8	9.8
5	452553.00	4796971.00	325.00	0	500	96.1	96.1	0.0	0.0	82.0	6.7	-1.2	0.0	0.0	0.0	0.0	-0.0	8.6	8.6
6	452553.00	4796971.00	325.00	0	1000	96.9	96.9	0.0	0.0	82.0	13.1	-1.2	0.0	0.0	0.0	0.0	-0.0	3.0	3.0
7	452553.00	4796971.00	325.00	0	2000	95.2	95.2	0.0	0.0	82.0	34.2	-1.2	0.0	0.0	0.0	0.0	-0.0	-19.8	-19.8
8	452553.00	4796971.00	325.00	0	4000	88.6	88.6	0.0	0.0	82.0	115.7	-1.2	0.0	0.0	0.0	0.0	-0.0	-107.9	-107.9
9	452553.00	4796971.00	325.00	0	8000	70.0	70.0	0.0	0.0	82.0	412.7	-1.2	0.0	0.0	0.0	0.0	-0.0	-423.5	-423.5

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG33"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	452366.00	4796399.00	320.41	0	32	80.1	80.1	0.0	0.0	81.5	0.0	-3.7	0.0	0.0	0.0	0.0	-0.0	2.3	2.3
2	452366.00	4796399.00	320.41	0	63	89.6	89.6	0.0	0.0	81.5	0.3	-3.7	0.0	0.0	0.0	0.0	-0.0	11.5	11.5
3	452366.00	4796399.00	320.41	0	125	94.4	94.4	0.0	0.0	81.5	1.3	1.6	0.0	0.0	0.0	0.0	-0.0	10.0	10.0
4	452366.00	4796399.00	320.41	0	250	95.1	95.1	0.0	0.0	81.5	3.4	-0.2	0.0	0.0	0.0	0.0	-0.0	10.4	10.4
5	452366.00	4796399.00	320.41	0	500	96.1	96.1	0.0	0.0	81.5	6.4	-1.1	0.0	0.0	0.0	0.0	-0.0	9.3	9.3
6	452366.00	4796399.00	320.41	0	1000	96.9	96.9	0.0	0.0	81.5	12.4	-1.1	0.0	0.0	0.0	0.0	-0.0	4.0	4.0
7	452366.00	4796399.00	320.41	0	2000	95.2	95.2	0.0	0.0	81.5	32.6	-1.1	0.0	0.0	0.0	0.0	-0.0	-17.8	-17.8
8	452366.00	4796399.00	320.41	0	4000	88.6	88.6	0.0	0.0	81.5	110.3	-1.1	0.0	0.0	0.0	0.0	-0.0	-102.1	-102.1
9	452366.00	4796399.00	320.41	0	8000	70.0	70.0	0.0	0.0	81.5	393.3	-1.1	0.0	0.0	0.0	0.0	-0.0	-403.7	-403.7

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG35"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	454089.00	4796605.00	331.86	0	32	80.1	80.1	0.0	0.0	77.9	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	5.2	5.2
2	454089.00	4796605.00	331.86	0	63	89.6	89.6	0.0	0.0	77.9	0.2	-3.0	0.0	0.0	0.0	0.0	-0.0	14.5	14.5
3	454089.00	4796605.00	331.86	0	125	94.4	94.4	0.0	0.0	77.9	0.9	1.8	0.0	0.0	0.0	0.0	-0.0	13.9	13.9
4	454089.00	4796605.00	331.86	0	250	95.1	95.1	0.0	0.0	77.9	2.2	0.1	0.0	0.0	0.0	0.0	-0.0	14.9	14.9
5	454089.00	4796605.00	331.86	0	500	96.1	96.1	0.0	0.0	77.9	4.2	-0.9	0.0	0.0	0.0	0.0	-0.0	14.9	14.9
6	454089.00	4796605.00	331.86	0	1000	96.9	96.9	0.0	0.0	77.9	8.2	-0.9	0.0	0.0	0.0	0.0	-0.0	11.7	11.7
7	454089.00	4796605.00	331.86	0	2000	95.2	95.2	0.0	0.0	77.9	21.4	-0.9	0.0	0.0	0.0	0.0	-0.0	-3.2	-3.2
8	454089.00	4796605.00	331.86	0	4000	88.6	88.6	0.0	0.0	77.9	72.5	-0.9	0.0	0.0	0.0	0.0	-0.0	-60.8	-60.8
9	454089.00	4796605.00	331.86	0	8000	70.0	70.0	0.0	0.0	77.9	258.5	-0.9	0.0	0.0	0.0	0.0	-0.0	-265.5	-265.5

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG46"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	452699.00	4790500.00	320.00	0	32	80.1	80.1	0.0	0.0	85.0	0.0	-4.5	0.0	0.0	0.0	0.0	-0.0	-0.4	-0.4

(Wind Speed = 6m/s)

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG46"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
2	452699.00	4790500.00	320.00	0	63	89.6	89.6	0.0	0.0	85.0	0.5	-4.5	0.0	0.0	0.0	0.0	-0.0	8.6	8.6
3	452699.00	4790500.00	320.00	0	125	94.4	94.4	0.0	0.0	85.0	2.0	1.3	0.0	0.0	0.0	0.0	-0.0	6.1	6.1
4	452699.00	4790500.00	320.00	0	250	95.1	95.1	0.0	0.0	85.0	5.0	-0.4	0.0	0.0	0.0	0.0	-0.0	5.5	5.5
5	452699.00	4790500.00	320.00	0	500	96.1	96.1	0.0	0.0	85.0	9.5	-1.3	0.0	0.0	0.0	0.0	-0.0	3.0	3.0
6	452699.00	4790500.00	320.00	0	1000	96.9	96.9	0.0	0.0	85.0	18.5	-1.3	0.0	0.0	0.0	0.0	-0.0	-5.2	-5.2
7	452699.00	4790500.00	320.00	0	2000	95.2	95.2	0.0	0.0	85.0	48.4	-1.3	0.0	0.0	0.0	0.0	-0.0	-36.8	-36.8
8	452699.00	4790500.00	320.00	0	4000	88.6	88.6	0.0	0.0	85.0	163.7	-1.3	0.0	0.0	0.0	0.0	-0.0	-158.7	-158.7
9	452699.00	4790500.00	320.00	0	8000	70.0	70.0	0.0	0.0	85.0	583.8	-1.3	0.0	0.0	0.0	0.0	-0.0	-597.4	-597.4

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG47"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	452425.00	4792588.00	320.00	0	32	80.1	80.1	0.0	0.0	82.1	0.0	-3.9	0.0	0.0	0.0	0.0	-0.0	1.9	1.9
2	452425.00	4792588.00	320.00	0	63	89.6	89.6	0.0	0.0	82.1	0.4	-3.9	0.0	0.0	0.0	0.0	-0.0	11.0	11.0
3	452425.00	4792588.00	320.00	0	125	94.4	94.4	0.0	0.0	82.1	1.4	1.5	0.0	0.0	0.0	0.0	-0.0	9.3	9.3
4	452425.00	4792588.00	320.00	0	250	95.1	95.1	0.0	0.0	82.1	3.6	-0.2	0.0	0.0	0.0	0.0	-0.0	9.6	9.6
5	452425.00	4792588.00	320.00	0	500	96.1	96.1	0.0	0.0	82.1	6.8	-1.2	0.0	0.0	0.0	0.0	-0.0	8.3	8.3
6	452425.00	4792588.00	320.00	0	1000	96.9	96.9	0.0	0.0	82.1	13.3	-1.2	0.0	0.0	0.0	0.0	-0.0	2.6	2.6
7	452425.00	4792588.00	320.00	0	2000	95.2	95.2	0.0	0.0	82.1	34.9	-1.2	0.0	0.0	0.0	0.0	-0.0	-20.7	-20.7
8	452425.00	4792588.00	320.00	0	4000	88.6	88.6	0.0	0.0	82.1	118.1	-1.2	0.0	0.0	0.0	0.0	-0.0	-110.5	-110.5
9	452425.00	4792588.00	320.00	0	8000	70.0	70.0	0.0	0.0	82.1	421.4	-1.2	0.0	0.0	0.0	0.0	-0.0	-432.4	-432.4

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG48"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	452825.00	4793244.00	320.00	0	32	80.1	80.1	0.0	0.0	80.3	0.0	-3.4	0.0	0.0	0.0	0.0	-0.0	3.2	3.2
2	452825.00	4793244.00	320.00	0	63	89.6	89.6	0.0	0.0	80.3	0.3	-3.4	0.0	0.0	0.0	0.0	-0.0	12.4	12.4
3	452825.00	4793244.00	320.00	0	125	94.4	94.4	0.0	0.0	80.3	1.2	1.7	0.0	0.0	0.0	0.0	-0.0	11.3	11.3
4	452825.00	4793244.00	320.00	0	250	95.1	95.1	0.0	0.0	80.3	2.9	-0.0	0.0	0.0	0.0	0.0	-0.0	12.0	12.0
5	452825.00	4793244.00	320.00	0	500	96.1	96.1	0.0	0.0	80.3	5.5	-1.0	0.0	0.0	0.0	0.0	-0.0	11.4	11.4
6	452825.00	4793244.00	320.00	0	1000	96.9	96.9	0.0	0.0	80.3	10.7	-1.0	0.0	0.0	0.0	0.0	-0.0	6.9	6.9
7	452825.00	4793244.00	320.00	0	2000	95.2	95.2	0.0	0.0	80.3	28.1	-1.0	0.0	0.0	0.0	0.0	-0.0	-12.2	-12.2
8	452825.00	4793244.00	320.00	0	4000	88.6	88.6	0.0	0.0	80.3	95.2	-1.0	0.0	0.0	0.0	0.0	-0.0	-85.8	-85.8
9	452825.00	4793244.00	320.00	0	8000	70.0	70.0	0.0	0.0	80.3	339.4	-1.0	0.0	0.0	0.0	0.0	-0.0	-348.7	-348.7

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG49"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	454586.00	4792838.00	330.00	0	32	80.1	80.1	0.0	0.0	77.2	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	5.9	5.9
2	454586.00	4792838.00	330.00	0	63	89.6	89.6	0.0	0.0	77.2	0.2	-3.0	0.0	0.0	0.0	0.0	-0.0	15.2	15.2
3	454586.00	4792838.00	330.00	0	125	94.4	94.4	0.0	0.0	77.2	0.8	1.8	0.0	0.0	0.0	0.0	-0.0	14.6	14.6
4	454586.00	4792838.00	330.00	0	250	95.1	95.1	0.0	0.0	77.2	2.0	0.1	0.0	0.0	0.0	0.0	-0.0	15.7	15.7
5	454586.00	4792838.00	330.00	0	500	96.1	96.1	0.0	0.0	77.2	3.9	-0.9	0.0	0.0	0.0	0.0	-0.0	15.9	15.9
6	454586.00	4792838.00	330.00	0	1000	96.9	96.9	0.0	0.0	77.2	7.6	-0.9	0.0	0.0	0.0	0.0	-0.0	13.0	13.0
7	454586.00	4792838.00	330.00	0	2000	95.2	95.2	0.0	0.0	77.2	19.9	-0.9	0.0	0.0	0.0	0.0	-0.0	-1.0	-1.0
8	454586.00	4792838.00	330.00	0	4000	88.6	88.6	0.0	0.0	77.2	67.2	-0.9	0.0	0.0	0.0	0.0	-0.0	-55.0	-55.0
9	454586.00	4792838.00	330.00	0	8000	70.0	70.0	0.0	0.0	77.2	239.8	-0.9	0.0	0.0	0.0	0.0	-0.0	-246.1	-246.1

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG50"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	455040.00	4793271.00	330.88	0	32	80.1	80.1	0.0	0.0	74.6	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	8.5	8.5
2	455040.00	4793271.00	330.88	0	63	89.6	89.6	0.0	0.0	74.6	0.2	-3.0	0.0	0.0	0.0	0.0	-0.0	17.9	17.9
3	455040.00	4793271.00	330.88	0	125	94.4	94.4	0.0	0.0	74.6	0.6	1.8	0.0	0.0	0.0	0.0	-0.0	17.4	17.4
4	455040.00	4793271.00	330.88	0	250	95.1	95.1	0.0	0.0	74.6	1.5	0.1	0.0	0.0	0.0	0.0	-0.0	18.9	18.9
5	455040.00	4793271.00	330.88	0	500	96.1	96.1	0.0	0.0	74.6	2.9	-0.9	0.0	0.0	0.0	0.0	-0.0	19.5	19.5
6	455040.00	4793271.00	330.88	0	1000	96.9	96.9	0.0	0.0	74.6	5.6	-0.9	0.0	0.0	0.0	0.0	-0.0	17.6	17.6
7	455040.00	4793271.00	330.88	0	2000	95.2	95.2	0.0	0.0	74.6	14.7	-0.9	0.0	0.0	0.0	0.0	-0.0	6.8	6.8
8	455040.00	4793271.00	330.88	0	4000	88.6	88.6	0.0	0.0	74.6	49.6	-0.9	0.0	0.0	0.0	0.0	-0.0	-34.7	-34.7
9	455040.00	4793271.00	330.88	0	8000	70.0	70.0	0.0	0.0	74.6	176.8	-0.9	0.0	0.0	0.0	0.0	-0.0	-180.5	-180.5

(Wind Speed = 6m/s)

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG65"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	454014.00	4798992.00	328.23	0	32	80.1	80.1	0.0	0.0	83.9	0.0	-4.3	0.0	0.0	0.0	0.0	-0.0	0.5	0.5
2	454014.00	4798992.00	328.23	0	63	89.6	89.6	0.0	0.0	83.9	0.4	-4.3	0.0	0.0	0.0	0.0	-0.0	9.5	9.5
3	454014.00	4798992.00	328.23	0	125	94.4	94.4	0.0	0.0	83.9	1.8	1.4	0.0	0.0	0.0	0.0	-0.0	7.3	7.3
4	454014.00	4798992.00	328.23	0	250	95.1	95.1	0.0	0.0	83.9	4.4	-0.3	0.0	0.0	0.0	0.0	-0.0	7.1	7.1
5	454014.00	4798992.00	328.23	0	500	96.1	96.1	0.0	0.0	83.9	8.4	-1.3	0.0	0.0	0.0	0.0	-0.0	5.1	5.1
6	454014.00	4798992.00	328.23	0	1000	96.9	96.9	0.0	0.0	83.9	16.4	-1.3	0.0	0.0	0.0	0.0	-0.0	-2.1	-2.1
7	454014.00	4798992.00	328.23	0	2000	95.2	95.2	0.0	0.0	83.9	42.9	-1.3	0.0	0.0	0.0	0.0	-0.0	-30.4	-30.4
8	454014.00	4798992.00	328.23	0	4000	88.6	88.6	0.0	0.0	83.9	145.2	-1.3	0.0	0.0	0.0	0.0	-0.0	-139.2	-139.2
9	454014.00	4798992.00	328.23	0	8000	70.0	70.0	0.0	0.0	83.9	517.8	-1.3	0.0	0.0	0.0	0.0	-0.0	-530.4	-530.4

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG71"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	451847.00	4795547.00	320.00	0	32	80.1	80.1	0.0	0.0	82.0	0.0	-3.8	0.0	0.0	0.0	0.0	-0.0	2.0	2.0
2	451847.00	4795547.00	320.00	0	63	89.6	89.6	0.0	0.0	82.0	0.4	-3.8	0.0	0.0	0.0	0.0	-0.0	11.1	11.1
3	451847.00	4795547.00	320.00	0	125	94.4	94.4	0.0	0.0	82.0	1.4	1.5	0.0	0.0	0.0	0.0	-0.0	9.5	9.5
4	451847.00	4795547.00	320.00	0	250	95.1	95.1	0.0	0.0	82.0	3.5	-0.2	0.0	0.0	0.0	0.0	-0.0	9.8	9.8
5	451847.00	4795547.00	320.00	0	500	96.1	96.1	0.0	0.0	82.0	6.7	-1.2	0.0	0.0	0.0	0.0	-0.0	8.5	8.5
6	451847.00	4795547.00	320.00	0	1000	96.9	96.9	0.0	0.0	82.0	13.1	-1.2	0.0	0.0	0.0	0.0	-0.0	3.0	3.0
7	451847.00	4795547.00	320.00	0	2000	95.2	95.2	0.0	0.0	82.0	34.3	-1.2	0.0	0.0	0.0	0.0	-0.0	-20.0	-20.0
8	451847.00	4795547.00	320.00	0	4000	88.6	88.6	0.0	0.0	82.0	116.2	-1.2	0.0	0.0	0.0	0.0	-0.0	-108.4	-108.4
9	451847.00	4795547.00	320.00	0	8000	70.0	70.0	0.0	0.0	82.0	414.4	-1.2	0.0	0.0	0.0	0.0	-0.0	-425.2	-425.2

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG74"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	453886.00	4795484.00	328.47	0	32	80.1	80.1	0.0	0.0	75.0	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	8.1	8.1
2	453886.00	4795484.00	328.47	0	63	89.6	89.6	0.0	0.0	75.0	0.2	-3.0	0.0	0.0	0.0	0.0	-0.0	17.4	17.4
3	453886.00	4795484.00	328.47	0	125	94.4	94.4	0.0	0.0	75.0	0.6	1.8	0.0	0.0	0.0	0.0	-0.0	16.9	16.9
4	453886.00	4795484.00	328.47	0	250	95.1	95.1	0.0	0.0	75.0	1.6	0.1	0.0	0.0	0.0	0.0	-0.0	18.4	18.4
5	453886.00	4795484.00	328.47	0	500	96.1	96.1	0.0	0.0	75.0	3.0	-0.9	0.0	0.0	0.0	0.0	-0.0	18.9	18.9
6	453886.00	4795484.00	328.47	0	1000	96.9	96.9	0.0	0.0	75.0	5.9	-0.9	0.0	0.0	0.0	0.0	-0.0	16.9	16.9
7	453886.00	4795484.00	328.47	0	2000	95.2	95.2	0.0	0.0	75.0	15.4	-0.9	0.0	0.0	0.0	0.0	-0.0	5.6	5.6
8	453886.00	4795484.00	328.47	0	4000	88.6	88.6	0.0	0.0	75.0	52.2	-0.9	0.0	0.0	0.0	0.0	-0.0	-37.7	-37.7
9	453886.00	4795484.00	328.47	0	8000	70.0	70.0	0.0	0.0	75.0	186.1	-0.9	0.0	0.0	0.0	0.0	-0.0	-190.2	-190.2

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG75"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	454731.00	4795014.00	330.00	0	32	80.1	80.1	0.0	0.0	67.0	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	16.2	16.2
2	454731.00	4795014.00	330.00	0	63	89.6	89.6	0.0	0.0	67.0	0.1	-3.0	0.0	0.0	0.0	0.0	-0.0	25.6	25.6
3	454731.00	4795014.00	330.00	0	125	94.4	94.4	0.0	0.0	67.0	0.3	1.6	0.0	0.0	0.0	0.0	-0.0	25.6	25.6
4	454731.00	4795014.00	330.00	0	250	95.1	95.1	0.0	0.0	67.0	0.6	0.1	0.0	0.0	0.0	0.0	-0.0	27.4	27.4
5	454731.00	4795014.00	330.00	0	500	96.1	96.1	0.0	0.0	67.0	1.2	-0.9	0.0	0.0	0.0	0.0	-0.0	28.9	28.9
6	454731.00	4795014.00	330.00	0	1000	96.9	96.9	0.0	0.0	67.0	2.3	-0.9	0.0	0.0	0.0	0.0	-0.0	28.5	28.5
7	454731.00	4795014.00	330.00	0	2000	95.2	95.2	0.0	0.0	67.0	6.1	-0.9	0.0	0.0	0.0	0.0	-0.0	23.1	23.1
8	454731.00	4795014.00	330.00	0	4000	88.6	88.6	0.0	0.0	67.0	20.6	-0.9	0.0	0.0	0.0	0.0	-0.0	2.0	2.0
9	454731.00	4795014.00	330.00	0	8000	70.0	70.0	0.0	0.0	67.0	73.4	-0.9	0.0	0.0	0.0	0.0	-0.0	-69.5	-69.5

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG76"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	454137.00	4793736.00	328.67	0	32	80.1	80.1	0.0	0.0	74.8	0.0	-3.0	0.0	0.0	0.0	0.0	-0.0	8.3	8.3
2	454137.00	4793736.00	328.67	0	63	89.6	89.6	0.0	0.0	74.8	0.2	-3.0	0.0	0.0	0.0	0.0	-0.0	17.6	17.6
3	454137.00	4793736.00	328.67	0	125	94.4	94.4	0.0	0.0	74.8	0.6	1.8	0.0	0.0	0.0	0.0	-0.0	17.2	17.2
4	454137.00	4793736.00	328.67	0	250	95.1	95.1	0.0	0.0	74.8	1.6	0.1	0.0	0.0	0.0	0.0	-0.0	18.7	18.7
5	454137.00	4793736.00	328.67	0	500	96.1	96.1	0.0	0.0	74.8	2.9	-0.9	0.0	0.0	0.0	0.0	-0.0	19.3	19.3
6	454137.00	4793736.00	328.67	0	1000	96.9	96.9	0.0	0.0	74.8	5.7	-0.9	0.0	0.0	0.0	0.0	-0.0	17.3	17.3
7	454137.00	4793736.00	328.67	0	2000	95.2	95.2	0.0	0.0	74.8	15.0	-0.9	0.0	0.0	0.0	0.0	-0.0	6.3	6.3
8	454137.00	4793736.00	328.67	0	4000	88.6	88.6	0.0	0.0	74.8	50.8	-0.9	0.0	0.0	0.0	0.0	-0.0	-36.1	-36.1
9	454137.00	4793736.00	328.67	0	8000	70.0	70.0	0.0	0.0	74.8	181.3	-0.9	0.0	0.0	0.0	0.0	-0.0	-185.2	-185.2

(Wind Speed = 6m/s)

Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG77"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	453186.00	4791237.00	322.04	0	32	80.1	80.1	0.0	0.0	83.3	0.0	-4.1	0.0	0.0	0.0	0.0	-0.0	1.0	1.0
2	453186.00	4791237.00	322.04	0	63	89.6	89.6	0.0	0.0	83.3	0.4	-4.1	0.0	0.0	0.0	0.0	-0.0	10.1	10.1
3	453186.00	4791237.00	322.04	0	125	94.4	94.4	0.0	0.0	83.3	1.6	1.4	0.0	0.0	0.0	0.0	-0.0	8.1	8.1
4	453186.00	4791237.00	322.04	0	250	95.1	95.1	0.0	0.0	83.3	4.1	-0.3	0.0	0.0	0.0	0.0	-0.0	8.0	8.0
5	453186.00	4791237.00	322.04	0	500	96.1	96.1	0.0	0.0	83.3	7.8	-1.2	0.0	0.0	0.0	0.0	-0.0	6.3	6.3
6	453186.00	4791237.00	322.04	0	1000	96.9	96.9	0.0	0.0	83.3	15.2	-1.2	0.0	0.0	0.0	0.0	-0.0	-0.3	-0.3
7	453186.00	4791237.00	322.04	0	2000	95.2	95.2	0.0	0.0	83.3	39.8	-1.2	0.0	0.0	0.0	0.0	-0.0	-26.7	-26.7
8	453186.00	4791237.00	322.04	0	4000	88.6	88.6	0.0	0.0	83.3	134.7	-1.2	0.0	0.0	0.0	0.0	-0.0	-128.1	-128.1
9	453186.00	4791237.00	322.04	0	8000	70.0	70.0	0.0	0.0	83.3	480.5	-1.2	0.0	0.0	0.0	0.0	-0.0	-492.5	-492.5

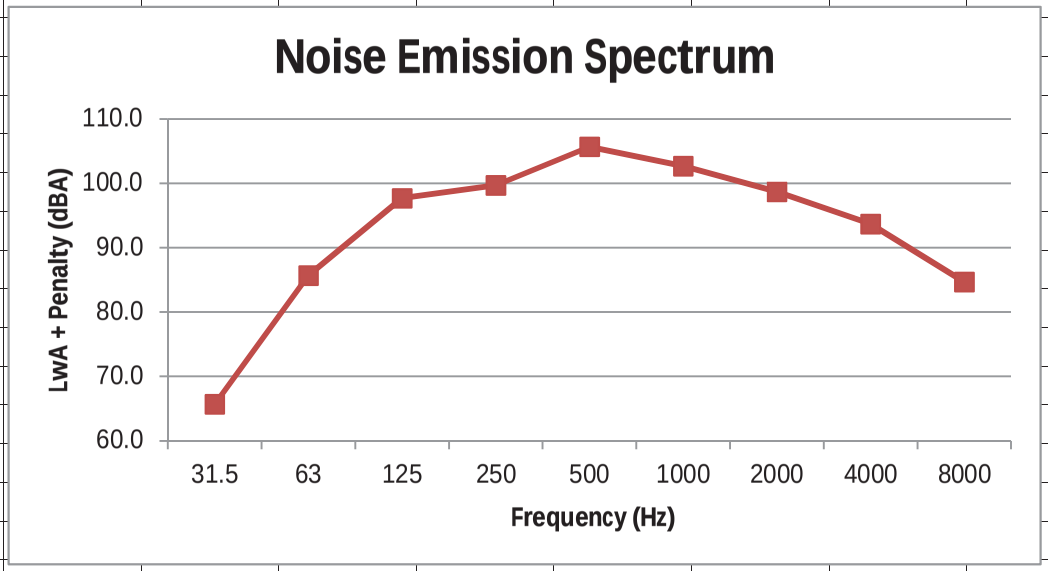
Point Source, ISO 9613, Name: "Goshen", ID: "G_WTG82"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	452242.00	4793145.00	320.00	0	32	80.1	80.1	0.0	0.0	81.8	0.0	-3.8	0.0	0.0	0.0	0.0	-0.0	2.1	2.1
2	452242.00	4793145.00	320.00	0	63	89.6	89.6	0.0	0.0	81.8	0.4	-3.8	0.0	0.0	0.0	0.0	-0.0	11.3	11.3
3	452242.00	4793145.00	320.00	0	125	94.4	94.4	0.0	0.0	81.8	1.4	1.5	0.0	0.0	0.0	0.0	-0.0	9.7	9.7
4	452242.00	4793145.00	320.00	0	250	95.1	95.1	0.0	0.0	81.8	3.5	-0.2	0.0	0.0	0.0	0.0	-0.0	10.0	10.0
5	452242.00	4793145.00	320.00	0	500	96.1	96.1	0.0	0.0	81.8	6.6	-1.1	0.0	0.0	0.0	0.0	-0.0	8.9	8.9
6	452242.00	4793145.00	320.00	0	1000	96.9	96.9	0.0	0.0	81.8	12.8	-1.1	0.0	0.0	0.0	0.0	-0.0	3.5	3.5
7	452242.00	4793145.00	320.00	0	2000	95.2	95.2	0.0	0.0	81.8	33.5	-1.1	0.0	0.0	0.0	0.0	-0.0	-19.0	-19.0
8	452242.00	4793145.00	320.00	0	4000	88.6	88.6	0.0	0.0	81.8	113.4	-1.1	0.0	0.0	0.0	0.0	-0.0	-105.4	-105.4
9	452242.00	4793145.00	320.00	0	8000	70.0	70.0	0.0	0.0	81.8	404.5	-1.1	0.0	0.0	0.0	0.0	-0.0	-415.1	-415.1

Point Source, ISO 9613, Name: "Goshen Transformer", ID: "G_Trans"																			
Nr.	X	Y	Z	Refl.	Freq.	LxT	LxN	K0	Dc	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	LrT	LrN
	(m)	(m)	(m)		(Hz)	dB(A)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)	dB(A)
1	454555.45	4794882.87	254.00	0	32	65.7	65.7	0.0	0.0	68.5	0.0	-5.0	0.0	0.0	1.8	0.0	-0.0	0.3	0.3
2	454555.45	4794882.87	254.00	0	63	85.7	85.7	0.0	0.0	68.5	0.1	-5.0	0.0	0.0	2.1	0.0	-0.0	19.9	19.9
3	454555.45	4794882.87	254.00	0	125	97.7	97.7	0.0	0.0	68.5	0.3	3.7	0.0	0.0	0.6	0.0	-0.0	24.6	24.6
4	454555.45	4794882.87	254.00	0	250	99.7	99.7	0.0	0.0	68.5	0.8	0.9	0.0	0.0	3.0	0.0	-0.0	26.5	26.5
5	454555.45	4794882.87	254.00	0	500	105.7	105.7	0.0	0.0	68.5	1.4	-1.5	0.0	0.0	4.7	0.0	-0.0	32.5	32.5
6	454555.45	4794882.87	254.00	0	1000	102.7	102.7	0.0	0.0	68.5	2.8	-1.5	0.0	0.0	6.4	0.0	-0.0	26.5	26.5
7	454555.45	4794882.87	254.00	0	2000	98.7	98.7	0.0	0.0	68.5	7.3	-1.5	0.0	0.0	8.5	0.0	-0.0	15.8	15.8
8	454555.45	4794882.87	254.00	0	4000	93.7	93.7	0.0	0.0	68.5	24.7	-1.5	0.0	0.0	11.0	0.0	-0.0	-9.1	-9.1
9	454555.45	4794882.87	254.00	0	8000	84.7	84.7	0.0	0.0	68.5	88.2	-1.5	0.0	0.0	13.7	0.0	-0.0	-84.3	-84.3
10	454555.45	4794882.87	254.00	1	250	99.7	99.7	0.0	0.0	68.7	0.8	0.9	0.0	0.0	4.0	0.0	2.2	23.1	23.1
11	454555.45	4794882.87	254.00	1	500	105.7	105.7	0.0	0.0	68.7	1.5	-1.5	0.0	0.0	5.1	0.0	7.0	25.0	25.0
12	454555.45	4794882.87	254.00	1	4000	93.7	93.7	0.0	0.0	68.7	25.1	-1.5	0.0	0.0	6.7	0.0	6.0	-11.2	-11.2
13	454555.45	4794882.87	254.00	1	8000	84.7	84.7	0.0	0.0	68.7	89.4	-1.5	0.0	0.0	8.0	0.0	3.6	-83.5	-83.5

Appendix E: Equipment Noise Emission Data and Calculations

Transformer Noise Emissions

Noise Rating	**80.0**	**dBA**
Mearurement Dist	0.30	m
Dimensions with Conservator:		
Height	6.40	m
Length	7.32	m
Width	6.86	m
Measurement Surface Area	255.9	m^2
Sound Power Level	104.1	dBA
Tonal Penalty	5.0	dB
Sound Power Level	109.1	dBA



Octave Band Emission Estimates

Centre Frequency	Corr[1]	Ncor[2]	Lw	LwA	Tonal Penalty	Lw + Penalty	LwA + Penalty
31.5	-1.0	-2.4	100.7	60.7	5.0	105.7	65.7
63	5.0	-2.4	106.7	80.7	5.0	111.7	85.7
125	7.0	-2.4	108.7	92.7	5.0	113.7	97.7
250	2.0	-2.4	103.7	94.7	5.0	108.7	99.7
500	2.0	-2.4	103.7	100.7	5.0	108.7	105.7
1000	-4.0	-2.4	97.7	97.7	5.0	102.7	102.7
2000	-9.0	-2.4	92.7	93.7	5.0	97.7	98.7
4000	-14.0	-2.4	87.7	88.7	5.0	92.7	93.7
8000	-21.0	-2.4	80.7	79.7	5.0	85.7	84.7
Overall Sound Power Level			112.7	**104.1**		117.7	**109.1**

1. Correction from "Engineering Noise Control", David A. Bies and Colin H. Hansen

2. Normalization correction to ensure total sound power after band corrections does not exceed measured overall value

Wind Shear Calculation

Night-time Monthly Average Wind Speed Data (2300 to 0700)

Data Set	Wind Speed Sensor	Height	Wind Speed (m/s)											
			Winter	Winter	Winter	Spring	Spring	Spring	Summer	Summer	Summer	Fall	Fall	Fall
			January	**February**	**March**	**April**	**May**	**June**	**July**	**August**	**September**	**October**	**November**	**December**
			1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	48.5m_W	48.50	6.31	6.01	5.88	6.36	5.56	4.42	4.15	4.25	5.07	5.91	6.37	7.10
2	48.5m_S	48.50	6.36	6.05	5.85	6.38	5.58	4.45	4.17	4.27	5.11	5.91	6.46	7.14
3	41.5m_W	41.00	6.08	5.78	5.57	5.98	5.24	4.19	3.85	3.89	4.66	5.51	6.04	6.85
4	41.5m_S	41.00	6.05	5.79	5.54	6.06	5.29	4.21	3.89	3.90	4.72	5.53	6.12	6.83
5	30m_W	30.00	5.68	5.41	5.17	5.52	4.84	3.88	3.51	3.48	4.18	5.02	5.58	6.46
6	10m_W	10.00	4.88	4.61	4.30	4.59	4.04	3.24	2.69	2.54	3.17	3.85	4.51	5.52

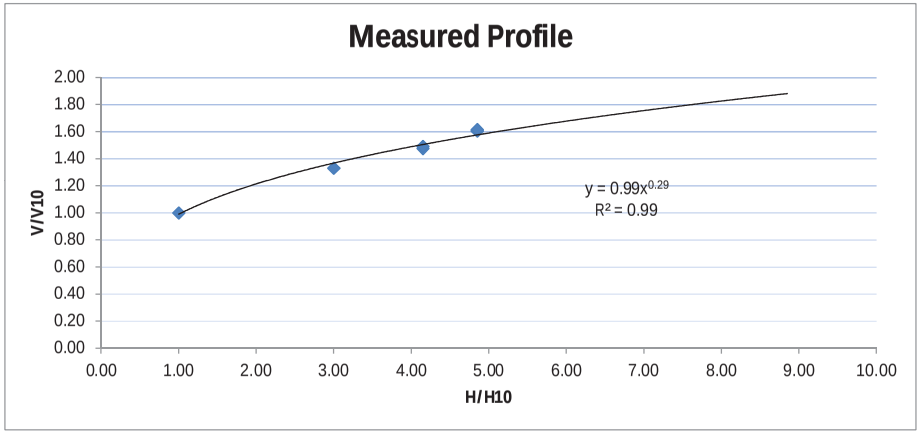
Summer Average Night-time Monthly Average Wind Speed - Based on Measurements

Data Set	Wind Speed Sensor	Height (m)	Vsavg (m/s)	H/H10	Vsavg/V10
1	spd_avg_48.5m_W_ch01	48.50	4.49	4.85	1.61
2	spd_avg_48.5m_S_ch02	48.50	4.52	4.85	1.62
3	spd_avg_41.5m_W_ch03	41.50	4.13	4.15	1.48
4	spd_avg_41.5m_S_ch04	41.50	4.17	4.15	1.49
5	spd_avg_30m_W_ch05	30.00	3.72	3.00	1.33
6	spd_avg_10m_W_ch06	10.00	2.80	1.00	1.00

Model	Vsavg(hub) = Vsavg(10m)*k k=C*(H/H10)^(n)
Hub Height (m)	80
C	1
n	0.29
k	1.83

Vsavg - Summer Average Night-time Wind Speed (July, August and Sept)

V10 - Vsavg at 10m height



Extract I of test report

Master Information „Noise", according to "Wind turbine generator systems - Part 11: Acoustic noise measurement techniques."

IEC 61400-11 ED. 2 from 2002 (published by: Central Office of the IEC, Geneva, Switzerland)

Extract of test report WICO 439SEC04/07 regarding noise emission of wind turbine (WT)

typo ENERCON E-48 (Mode I), hub height 75.6 m

General			Technical specifications (manufacturer)	
Manufacturer:	ENERCON GmbH		Rated power (generator):	800 kW
	Dreekamp 5		Rotor diameter:	48,0 m
	D-26605 AURICH		Hub height above ground:	75,6 m
Serial number:	48087		Kon. Stahlrohr	Tubular steel tower
WT-location:	WP Holtriem	RW 25.95.228	Pitch	pitch/stall/active-stall
		HW 59.42.988		

Complementations of rotor (manufacturer)		Complementations of gear and generator (manufacturer)	
Manufacturer of rotor blades	ENERCON GmbH	Manufacturer of gear:	No
Type of blades:	E48/1	Type of gear:	No
Pitch angle:	variabel	Manufacturer of generator:	ENERCON GmbH
Number of blades	3	Type of generator:	E-48
Rated speed(s)/speed range:	16 – 29,5 rpm (Mode I)	Rated speed(s):	16 – 29,5 rpm (Mode I)

Report power curve: calculated power curve, date: 31.08.2004

	Reference		Noise emission parameter	Remarks
	Standardized wind speed at 10 m above ground	Electric power		
Sound power level L_{WA}	*5 ms⁻¹*	*182 kW*	*94.0* dB(A)*	*(1)*
	6 ms⁻¹	315 kW	97.8 dB(A)	
	7 ms⁻¹	499 kW	100.3 dB(A)	
	8 ms⁻¹	671 kW	101.4 dB(A)	
	8.9 ms⁻¹	*760 kW*	*101.9 dB(A)*	*(2)*
	9 ms⁻¹	765 kW	102.0 dB(A)	
	9.6 ms⁻¹	*794 kW*	*102.1 dB(A)*	*(3)*
	10 ms⁻¹	800 kW	101.9 dB(A)	(4)
Tonal components ΔL_a (near proximity)	*5 ms⁻¹*	*182 kW*	No tone	*(1)*
	6 ms⁻¹	315 kW	No tone	
	7 ms⁻¹	499 kW	No tone	
	8 ms⁻¹	671 kW	No tone	
	8.9 ms⁻¹	*760 kW*	No tone	*(2)*
	9 ms⁻¹	765 kW	*No tone*	
	9.6 ms⁻¹	*794 kW*	No tone	*(3)*
	10 ms⁻¹	800 kW	*No tone*	(4)

One third octave sound power level at reference point v_{10} = 5 m/s [dB(A)]												
Frequency	50	63	80	100	125	160	200	250	315	400	500	630
L_{WA}	67.6	71.2	72.9	74.6	78.0	77.0	79.3	84.2	85.6	84.6	84.2	84.4
L_{WA}	75.8			81.5			88.5			89.2		
Frequency	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
L_{WA}	82.6	82.0	81.4	79.2	78.5	76.6	75.2	74.8	73.1	72.4	70.9	67.4
L_{WA}	86.8			83.0			79.2			75.5		

One third octave sound power level at reference point v_{10} = 6 m/s [dB(A)]												
Frequency	50	63	80	100	125	160	200	250	315	400	500	630
L_{WA}	71.7	74.2	76.9	77.6	78.8	79.7	80.6	86.1	87.8	87.4	87.4	89.0
L_{WA}	79.5			83.6			90.5			92.6		
Frequency	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
L_{WA}	88.3	88.1	86.9	84.0	82.4	80.9	79.4	79.0	78.1	77.3	74.9	72.9
L_{WA}	92.6			87.4			83.6			80.2		

One third octave sound power level at reference point v_{10} = 7 m/s [dB(A)]												
Frequency	50	63	80	100	125	160	200	250	315	400	500	630
L_{WA}	72.7	76.1	79.3	80.5	80.9	82.9	84.3	89.2	91.2	90.7	90.5	91.5
L_{WA}		81.6			86.3			93.8			95.7	
Frequency	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
L_{WA}	90.2	89.7	87.9	85.5	84.1	82.6	81.7	81.6	80.7	80.2	79.2	76.3
L_{WA}		94.1			89.0			86.1			83.6	

One third octave sound power level at reference point v_{10} = 8 m/s [dB(A)]												
Frequency	50	63	80	100	125	160	200	250	315	400	500	630
L_{WA}	70.1	74.3	77.3	79.0	81.7	82.3	84.4	90.5	92.7	92.0	91.9	92.9
L_{WA}		79.6			86.0			95.1			97.1	
Frequency	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
L_{WA}	91.7	90.9	89.1	86.0	83.9	82.1	80.9	81.6	80.6	79.7	79.2	77.3
L_{WA}		95.5			89.1			85.8			83.6	

One third octave sound power level at reference point v_{10} = 9 m/s [dB(A)]												
Frequency	50	63	80	100	125	160	200	250	315	400	500	630
L_{WA}	71.8	74.5	77.1	79.4	82.6	84.2	86.6	91.5	93.5	92.6	92.3	93.1
L_{WA}		79.8			87.3			96.1			97.5	
Frequency	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
L_{WA}	91.4	90.5	88.7	86.2	85.0	84.3	83.9	84.4	83.9	83.7	82.5	80.1
L_{WA}		95.1			90.0			88.8			87.1	

One third octave sound power level at reference point v_{10} = 9.6 m/s [dB(A)]												
Frequency	50	63	80	100	125	160	200	250	315	400	500	630
L_{WA}	69.9	73.9	75.9	77.4	80.2	80.7	83.4	88.3	91.0	90.8	91.5	93.4
L_{WA}		78.6			84.4			93.3			96.8	
Frequency	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
L_{WA}	93.2	93.6	92.6	88.9	87.4	85.0	83.2	83.3	82.0	81.1	79.9	77.8
L_{WA}		97.9			92.7			87.6			84.6	

(1) Because of the signal to noise ratio laying in between 3 dB to 6 dB the sound pressure level was corrected with 1.3 dB.
(2) Sound power level at 95% of the rated power.
(3) Wind speed at the maximum sound pressure level minute measured.
(4) One value was measured in the wind bin of 10 ms^{-1}.

This extract of test report is valid only in connection with the enclosed „Manufacturer's certificate" from 2004-08-31.

This declaration does not replace above-mentioned report.

measured by: WIND-consult GmbH
Reuterstraße 9
D-18211 Bargeshagen

- pdf - document was signed electronically -

date: 2006-01-24

Dipl.-Ing. A. Petersen

Dipl.-Ing. W. Wilke

Technical Description of the 1.56-100 Wind Turbine and Major Components

The wind turbine is a three bladed, upwind, horizontal-axis wind turbine with a rotor diameter of 100 m. The turbine rotor and nacelle are mounted on top of a tubular tower giving a rotor hub height of 80m. The machine employs active yaw control (designed to steer the machine with respect to the wind direction), active blade pitch control (designed to regulate turbine rotor speed), and a generator/power electronic converter system.

The wind turbine features a distributed drive train design wherein the major drive train components including main shaft bearings, gearbox, generator, yaw drives, and control panel are attached to a bedplate (see Figure 1).

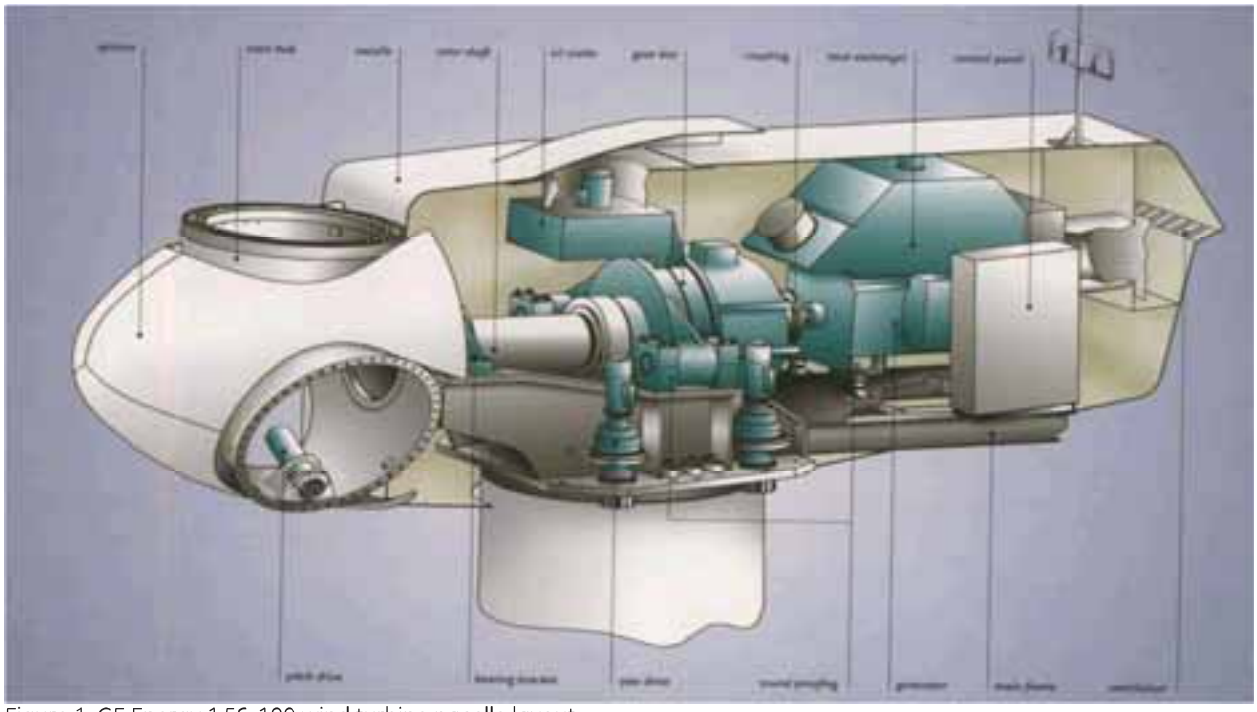


Figure 1: GE Energy 1.56-100 wind turbine nacelle layout

Rotor

The rotor diameter is 100 m, resulting in a swept area of 7,854 m, and is designed to operate between 9.75 and 16.18 revolutions per minute (rpm). Rotor speed is regulated by a combination of blade pitch angle adjustment and generator/converter torque control. The rotor spins in a clock-wise direction under normal operating conditions when viewed from an upwind location.

Full blade pitch angle range is approximately 90°, with the 0°-position being with the airfoil chord line flat to the prevailing wind. The blades being pitched to a full feather pitch angle of approximately 90° accomplishes aerodynamic braking of the rotor; whereby the blades "spill" the wind thus limiting rotor speed.

Blades

There are three rotor blades used on each wind turbine. The airfoils transition along the blade span with the thicker airfoils being located in-board towards the blade root (hub) and gradually tapering to thinner cross sections out towards the blade tip.

Blade Pitch Control System

The rotor utilizes three (one for each blade) independent electric pitch motors and controllers to provide adjustment of the blade pitch angle during operation. Blade pitch angle is adjusted by an electric drive that is mounted inside the rotor hub and is coupled to a ring gear mounted to the inner race of the blade pitch bearing (see Figure 1).

GE's active-pitch controller enables the wind turbine rotor to regulate speed, when above rated wind speed, by allowing the blade to "spill" excess aerodynamic lift. Energy from wind gusts below rated wind speed is captured by allowing the rotor to speed up, transforming this gust energy into kinetic which may then be extracted from the rotor.

Three independent back-up units are provided to power each individual blade pitch system to feather the blades and shut down the machine in the event of a grid line outage or other fault. By having all three blades outfitted with independent pitch systems, redundancy of individual blade aerodynamic braking capability is provided.

Hub

The hub is used to connect the three rotor blades to the turbine main shaft. The hub also houses the three electric blade pitch systems and is mounted directly to the main shaft. Access to the inside of the hub is provided through a hatch.

Gearbox

The gearbox in the wind turbine is designed to transmit power between the low-rpm turbine rotor and high-rpm electric generator. The gearbox is a multi-stage planetary/helical gear design. The gearbox is mounted to the machine bedplate. The gearing is designed to transfer torsional power from the wind turbine rotor to the electric generator. A parking brake is mounted on the high-speed shaft of the gearbox.

Bearings

The blade pitch bearing is designed to allow the blade to pitch about a span-wise pitch axis. The inner race of the blade pitch bearing is outfitted with a blade drive gear that enables the blade to be driven in pitch by an electric gear-driven motor/controller.

The main shaft bearing is a roller bearing mounted in a pillow-block housing arrangement. The bearings used inside the gearbox are of the cylindrical, spherical and tapered roller type. These bearings are designed to provide bearing and alignment of the internal gearing shafts and accommodate radial and axial loads.

Brake System

The electrically actuated individual blade pitch systems act as the main braking system for the wind turbine. Braking under normal operating conditions is accomplished by feathering the blades out of the wind. Any single feathered rotor blade is designed to slow the rotor, and each rotor blade has its own back-up to provide power to the electric drive in the event of a grid line loss.