

September 5, 2007

Dr. Burl W. Haar
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101

Re: Glacial Ridge Wind Project LLC
Docket No. IP-6650/WS-07-1073

Dear Dr. Haar:

Enclosed and hereby served upon you please find an original and 15 copies of Glacial Ridge Wind Project LLC's Amended Site Permit Application (the "Amended Application"). PlainStates Energy, the developer of the 20 MW C-BED wind project located in Pope County, Minnesota, filed the original Site Permit Application on August 7, 2007 (the "Application"). Since the original filing, PlainStates Energy and Glacial Ridge Wind Project LLC have deemed it necessary to amend the Project Boundary depicted in the original Application. The amended Project Boundary is nearly identical to the original Project Boundary, however, the amended Project Boundary now includes portions of Section 14 and Section 23, and more of Section 11, all in Gilchrist Township.

The enclosed Amended Application includes revised project maps that reflect the changes to the Project Boundary. Other than these revised project maps, the Amended Application is identical to the original Application filed for this project.

Questions regarding the enclosed Amended Application can be directed to John Ihle at PlainStates Energy, at the contact information provided in the Amended Application.

Very truly yours,

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Enclosures

GLACIAL RIDGE WIND PROJECT LLC

POPE COUNTY, MINNESOTA

**AMENDED SITE PERMIT APPLICATION FOR A LARGE
WIND ENERGY CONVERSION SYSTEM**

DOCKET NO. IP-6650/WS-07-1073

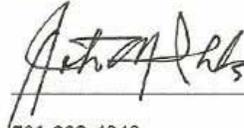
SEPTEMBER 5, 2007

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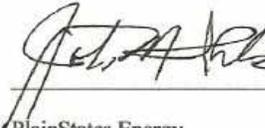
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Figure 1-Site Location-Pope County

1.1 Introduction

On behalf of Glacial Ridge Wind Project LLC, PlainStates Energy hereby submits this application for a Site Permit to construct a 20 MW Large Wind Energy Conversion System (“LWECS”) (hereinafter referred to as the “Glacial Ridge Wind Project” or the “Project) pursuant to Minnesota Statutes Chapter 216F and Minnesota Rules Chapter 4401. This project is a Community-Based Energy Development (“C-BED”) project and will comply with the ownership requirements of Minn. Stat. Section 216B.1612.. The Project will be owned by a group of individual Minnesota residents organized into a business structure yet to be determined that will comply with all C-BED ownership requirements.

The Project’s owners and the Project developer, PlainStates Energy, will be responsible for oversight and management of the Project’s development, finance arrangements, turbine selection, construction and on going administration, including the operations and maintenance for the Project. The Project is located in Southeastern Pope County, near the junction of State Highway 104 and County Road 8 (See Appendix I). As proposed, the Project will have a capacity of 20 MW and is expected to become commercially operational by December 31, 2008.

The Project’s turbine site layout will optimize the site’s wind resources. The factors for making decisions regarding turbine layout and spacing are predicated primarily on analyzing prevailing winds, the length of turbine rotor diameters, site elevation and distances from nearby trees, as well as discussions with representatives of the Minnesota Department of Natural Resources (“MNDNR”) and United States Fish & Wildlife Service (“USFWS”).

The Project’s owners, currently have no operating wind projects, however, PlainStates Energy and some of the Project’s owners have been involved with the development, ownership, construction, operations and maintenance of large scale wind projects over the last 20+ years. A single-turbine project developed by PlainStates Energy was recently constructed approximately 70 miles north of the proposed Glacial Ridge Project site.

The development of the Glacial Ridge Wind Project will further state goals and policy expressed in Minn. Stat. Sec. 216F.03 as they relate to building wind projects “in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources” by mitigating environmental pollution, developing an energy infrastructure within the state and contributing to economic growth and prosperity for businesses and individuals in the state of Minnesota. The Project will:

- Investigate local land use practices and engage Pope County officials to ensure the Project is compatible with the long-term interests of the community.
- Evaluate wildlife, historic and archaeological records to mitigate Project impacts.
- Ensure that the Project’s wind resources, turbine selection and transmission system are carefully assessed and compatible with all other aspects of the Project.
- Comply with all applicable laws.

The Project has obtained a Resolution of Support from Pope County, which is included in the attachments, for this Project.

1.2 Project Structure and Financing. Organized as a C-BED project, the 20 MW capacity Glacial Ridge Wind Project will fulfill all relevant ownership and financial criteria pertaining to C-BED requirements under Minnesota law.

The financial structure of the Project is yet to be determined. The Project is currently negotiating with potential equity investors.

1.3 Ownership. The Project will be owned by a group of individual Minnesota residents organized into a business structure yet to be determined that complies with the C-BED ownership requirements. Three of the owners of the Project are from the area immediately surrounding the Project site and are landowners of proposed turbine sites; two Project owners are from Clay County and one owner resides in nearby Kandiyohi County.

2 Certificate of Need

Under Minnesota Statute, Section 216B.243, Subd. 8 (7), a Certificate of Need is not required for the Project because the Project will (i) generate electricity from a wind energy conversion system, (ii) serve retail customers in Minnesota, (iii) be used to meet the renewable energy objective under Minn. Stat. Sec. 216B.1691 and addresses a current resource need under Minnesota Statute, Section 216B.2422, and (iv) is a C-BED project under Minn. Stat. Sec. 216B.1612.

3 State Policy

The Project will address Minnesota’s energy resource needs and help satisfy the state’s statutory renewable energy objective Minn. Stat. 216B.1691. Also, the Project falls under Minn. Stat. Sec. 216B.1612 which seeks “to optimize local, regional, and state benefits from wind energy development and to facilitate widespread development of community-based wind energy projects throughout Minnesota” and directs utilities to make good faith efforts to negotiate to purchase energy from locally owned C-BED wind projects. Negotiations with regard to the purchase and sale of power from the Glacial Ridge Wind Project are on-going.

The Project is also consistent with the findings declared in Minn. Stat. Section 216C.05, which states that it is in the vital interest of the state to provide for the development of renewable energy. Minnesota Statute, Section 216C.05 also states that the legislature finds it is in the state’s best interest to encourage the development of energy resources that minimize increases in the consumption of fossil fuels, and to provide for an optimum combination of energy sources. The Project will address these interests by increasing the availability of energy produced by renewable resources in Minnesota, thereby reducing the need to increase consumption of fossil fuels.

Finally, the Project furthers state policy under Minn. Stat. Section 216F.03 by siting the Project in an orderly manner consistent with environmental preservation, sustainable development and the efficient use of resources as indicated in this application.

4 Project Description

4.1 Off Taker. Currently, the Project is discussing the terms of a power purchase agreement with potential power purchasers, however, there is not yet a contract in place with any off-taker as of the date of this Site Permit Application.

4.2 Interconnect and Site Location. The Project will interconnect with a Great River Energy (“GRE”) transmission line which ties into an Xcel Energy (“Xcel”) 69 kV line located approximately 7.5 miles away from the Project site. Discussions with GRE and Xcel, both Midwest Independent Transmission System Operator (MISO) members, have taken place in regards to the location of the Project. In 2005, Xcel indicated that the Project’s location is desirable because of its proximity to the Buffalo Ridge and the apparent lack of constrained transmission in this area (as compared to areas in Southwestern Minnesota). A WindLogics study that was performed for the Project site came back with positive results. See Section 4.2 below.

The 20 MW Project will be built in one phase and will be located in the Southeastern corner of Pope County. The current site layout consists of 8 turbines, all of which will be located in Gilchrist Township in Sections 1, 12, and 13, with alternative locations which may be available for use in Gilchrist Township Sections 11, 14 and 24, and Lake Johanna Township Section 6 and 18.

A substation is proposed to be constructed on Section 12 adjacent to the existing GRE owned Williams Substation and tying directly to the GRE 69 kV transmission system. An underground collector feeder from the substation will be constructed through the Project site.

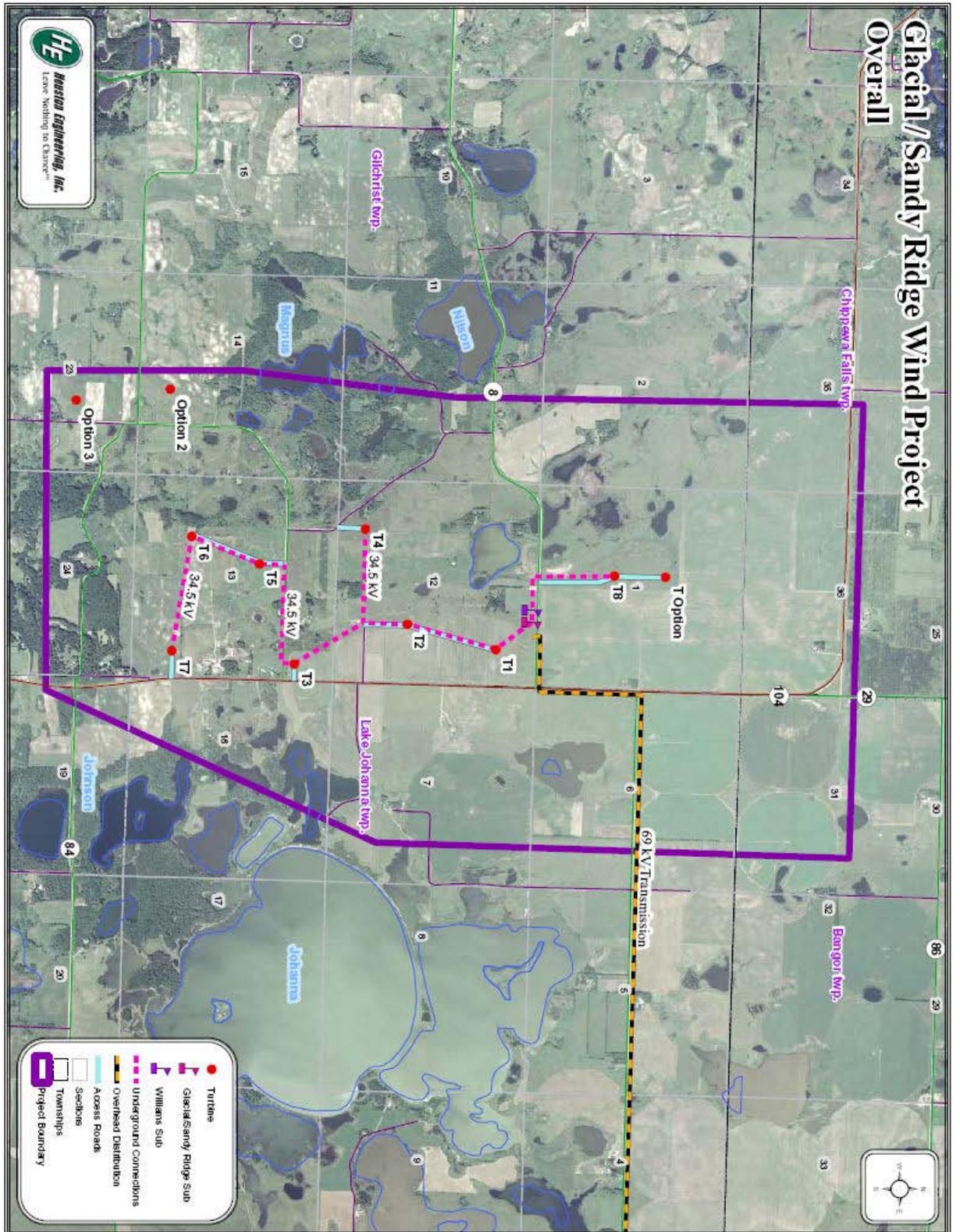
This configuration represents the best long-term and short-term option for interconnection of the Project. Please see Figure 2.

4.3 Wind Resource PlainStates Energy undertook a WindLogics wind study in the spring of 2005. A meteorological (“met”) tower was installed in June of 2003.

A WindLogics modeling system was used to gather statistics and information covering the whole state, with a comprehensive analysis reported for one virtual tower located within the bounds of the site. Using data from the WindLogics weather archive, a 12 month modeling process was normalized to reflect long-term values using 40 years of additional WindLogics data. Those results were used to generate conclusions for a report which indicated a viable wind resource.

The data collected and the WindLogics Study performed indicates a somewhat unusual wind resource at hub height of 80 meters. The resource is unusual in the sense that wind speeds are higher than had been expected during summer months. The Project’s wind resource indicates a healthy 8.22 m/s wind speed average. Prevailing winds are predominantly from the NW in winter months, and predominantly from the SE during the summer months with diurnal patterns, which are expected to be proven with on site monitoring to be consistently stronger through the night time and early morning hours. We will evaluate on site data once we have chosen a finance partner and have determined their criteria for due diligence as collected on site met data and the correlation with regard to WindLogics archived data.

Map 1 Project Layout and Boundary



4.3 WindLogics Study. WindLogics utilizes state of the art methodology in assessing the economic viability of a proposed wind project. Time has proven WindLogics methodology is reasonably accurate by some of the largest wind energy developers in the world.

Financial viability is determined by the probability that the wind resource (wind speed, production estimates, etc.) will meet or exceed specific values in the future, based on data from the past. In order to predict this properly it is necessary to use Predictive Intervals (PI) and not Confidence Intervals (CI).

It is probable that the Project's annual averages will lie above the PI values predicted for this Project. PI values are needed to assess the financial viability of the site's wind resource given a specific turbine's performance characteristics.

The Project relies on both the WindLogics study and the met tower and anemometers that were installed on site in June of 2003 to prove out the viability of the Project's wind resource. What follows is a short discussion of the wind resource based on the study performed by WindLogics in 2005. Further information will be available as it is collected.

4.3.1 Interannual Variation. See Figure 3 Below. WindLogics has an online archive with more than 50 years of collected data used for normalizing the results of modeling to reflect long-term values and for studying interannual variation of the wind resource. The National Center for Environmental Prediction and the Center for Environmental Research have cooperated in reanalysis to produce retroactive records of atmospheric weather information to support needs for research and climate areas. The data comes from land surface, ship, rawinsonde, aircraft and satellite and other data that has been kept unchanged over the data period. WindLogics has developed specialized software to analyze this data to be used for wind project analysis which has been recognized by some of the largest wind project developers in the industry.

By characterizing the model year wind resource difference with the long-term average (over a forty year period) at reanalysis grid points adjacent to the study location, a ratio is obtained that is applied to the results of the WindLogics modeling process. The correlation of average monthly wind speeds between the non-normalized detailed results is depicted in Figure 3. In this figure the points are plotted for each month of the overlapping time period between the datasets. The level of correlation is depicted by the R correlation value. Values with above .60 are considered to be fair, values .75 are considered good, and values of .85 and above are considered excellent. The implications of Figure 3 indicate a very good correlation between the site's WindLogics archived data and reanalysis data acquired from the institutions mentioned above.

Figure 2, Reanalysis of long term wind resource.

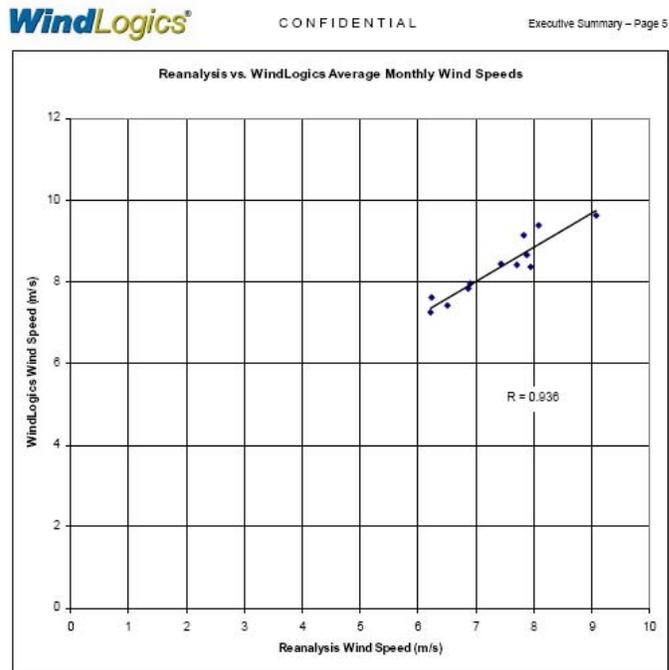


Figure 1. Correlation between Reanalysis and WindLogics average monthly wind speeds.

4.3.2 Seasonal Variation at 80 meter hub height-Consistent with the characteristics of other measured wind resources in Minnesota, generally the winds are strongest during the months of September through April, and lower during the spring/summer months of May through August.

Table 1. Monthly Wind Speeds.

Month	m/sec	Month	m/sec	Month	m/sec
January	8.69	May	8.13	September	8.35
February	8.16	June	7.75	October	9.11
March	8.05	July	6.49	November	8.84
April	8.63	August	7.22	December	8.22

Annual Average 8.22 m/sec

4.3.3 Diurnal Conditions. Will be available as on site met data is analyzed and correlated with WindLogics archived data.

Typically wind speeds at 80 meters decrease in the morning hours because the rising of the sun is warming up the earth, resulting in the mixing of winds from higher winds located near the surface of the earth. These higher winds occur at ground level because of a temperature swing due to solar radiation from the rising sun. This creates complex pressure differences from various topographical features across a large geographical area. At dusk the sun is setting and less mixing of winds occur and the wind speeds at hub height tend to increase.

4.3.4 Atmospheric Stability. Jet stream patterns relative to their locational track and speed dominate seasonal weather patterns. During the winter months, the jet stream dips to the south, creating frequent and strong tight pressure gradients of high and low pressure weather patterns which are 620 miles or more (synoptic-scale) across. These pressure gradients create relatively high wind speed averages during

the months of September through mid May. During the summer months, the jet stream moves further north, creating weaker pressure gradients having less strength, which contributes to lower wind speeds during this time of year.

4.3.5 Extreme Conditions. Extreme weather events in Pope County, as in every other county in the upper Midwest, can include tornadoes, lightning strikes from thunderstorms and possible ice build up.

PlainStates Energy knows of no tornado activity that has had devastating impacts on wind projects. Industrial grade turbines like those that will make up the Project shut themselves down when winds exceed 55 mph and these turbines have survival wind speeds in excess of 100 mph. A direct strike to a windfarm by a tornado is unlikely. Straight line winds are more plausible and the turbine, as mentioned, shuts itself down in winds exceeding 55 mph.

Lightning has the potential to be a more serious matter. However, the manufacturer of the turbines the Project intends to use have taken precautions to protect against damage from lightning. Nordex has engineered their turbine to protect against lightning from the tip of the blades through the foundation. The blades are equipped with lightning receptors wired through the hub via the rotor shaft where the voltage is discharged to the main frame, tower, foundation and ground ring by carbon brushes appropriate for the protection voltage. All components are connected to this ground bus. The generator is equipped with lightning arresters and the converter is equipped with varistors on the line side of the connections. Nordex has taken a serious approach to lightning protection and has designed their turbine to comply with international and wind energy industry standards.

Icing and cold weather events may be an issue the Project has to contend with from time to time. To protect against start up during icing, an icing sensor is installed on the top of the nacelle to shut the turbine down when this occurs. Operations below -10 degrees F are shut down.

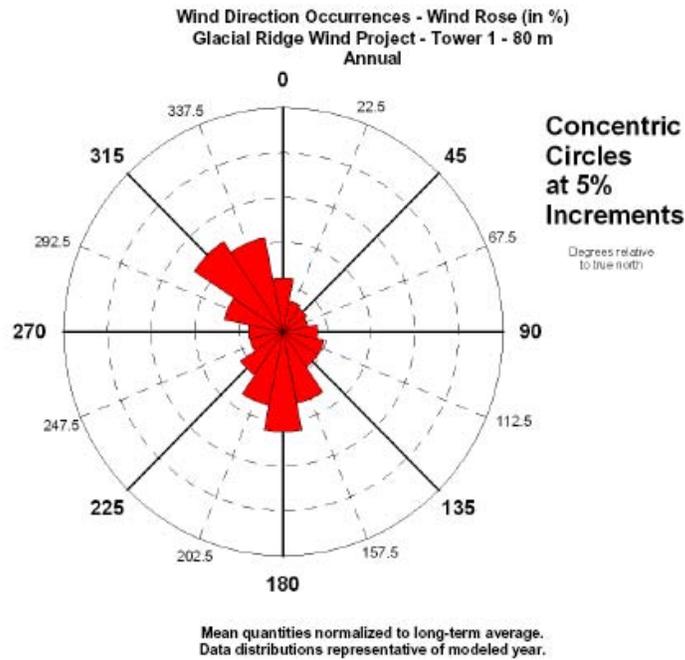
We have included approximately 2% of production loss in our pro forma due to extreme weather events mentioned above.

4.3.6 Speed Frequency Distribution. Will be available as on site met data is analyzed.

4.3.7 Variation with Height. Will be available as on site met data is analyzed. Wind shear from this site is expected to be significant because of trees located within ½ mile of turbine locations. Most of the trees are 40 – 50 feet in height. On site monitoring is being conducted at the 195 foot level, 165 foot and 135 foot levels.

4.3.8 Spatial Variations. The Project expects minor power variations due to elevation changes. Located on top of a prominent ridgeline in Pope County, the site is exposed to both woodlands and open areas where we expect to see losses mentioned above due to turbulence generated by trees. The Project will site turbines in open areas, relative to prevailing winter northwesterly and summer southeasterly winds to maximize wind energy production from the site. Please see figure 4 for annual Wind Rose.

Figure 3. Annual Wind Rose.



5 Site Control

5.1 Wind Rights On behalf of the Project, PlainStates Energy has entered into agreements with landowners of those parcels underlying the proposed turbine sites which give the Project the option to lease those parcels. Turbine siting has been prefaced with the intent to site turbines approximately 10 rotor diameters apart in a north/south and east/west layout, to refrain from interfering with future developments, and to work closely with the MNDNR, the USFWS and the Soil and Water Conservation District to minimize environmental impacts.

The Project, through PlainStates Energy, has lease options for approximately 676 acres of land. The Project plans to enter into lease agreements with the relevant landowners by late 2007 or early 2008. Verbal discussions have taken place with landowners concerning additional land which may be needed turbine sites need to be relocated. Currently, the amount of land that the Project has the option of leasing is enough to support 8-2.5 MW wind turbines, access, access roads, wind rights and other ancillary needs including a substation to be used for interconnecting with GRE. These signed options lay out the premises which the Project may lease, and include a description of some of the terms to be included in a lease, including wind rights, payment, site access, met tower installation, construction, operations and maintenance, taxes, and decommissioning.

Wind easement discussions with landowners adjacent to proposed turbine sites have not yet been started. Most of the optioned turbine sites themselves incorporate enough property to maintain the 3 rotor diameter east to west spacing and the 5 rotor diameter spacing required in the north to southerly directions away from adjacent landowners. For two of the proposed turbine sites, those referred to as sites 4 and 8, in order to comply with state wind siting rules we will need to obtain wind easements from adjacent landowners.

The leases will be for a term of 25 years, and will include an option to extend the term of the lease upon the expiration of the initial 25 year term.

6 Design of the Project

6.1 Project Layout

The four basic components to wind farm construction include; access roads; turbine and transformer foundations; the turbine equipment including, towers, nacelle and rotor; and the substation and collection system.

The Glacial Ridge Wind Project is laid out to minimize acoustic and environmental impact while gaining the best use of the wind resource given the land available, the location of trees or other obstructions in the area, and taking into account the interests of landowners and citizens who reside in the area. Turbine selection was influenced by the wind resource and based on estimated power production for those turbines available as of March 2007. The Project has selected a turbine model and a preliminary turbine layout has been established for the Nordex N90-2.5 MW turbine. Nordex will work with the Project to optimize the layout through WindPro with regard to sound levels projected at occupied residences in the area, in order to comply with the standards established by the Project's Turbine Supply and Warranty Agreements with Nordex. In all respects, the Project will comply with state law to minimize negative impacts to those living in the vicinity of the proposed Project site.

The layout has been established to take advantage of NW prevailing winter winds and SE prevailing summer winds. According to the WindLogics study, an insignificant amount of winds come out of the NE. Subsequently the Project has been laid out in a pattern running from the NE to the SW to follow natural the ridge line, to the extent possible. Distances between turbines will be approximately 10 rotor diameters as suggested by guidelines established by the American Wind Energy Association ("AWEA"), which guidelines take into account many factors. Using the proposed turbine layout and spacing, the loss of production due to wake from nearby turbines is estimated to be less than 2% per year for the entire Project. Overall, a 6-7% production loss has been projected for the Project, taking into account wake, trees, variations in topography and electrical line losses, giving the Project an overall mean net capacity factor of approximately 36%.

Currently the Project layout takes into account siting and set-back principles set up in recently adopted county zoning rules and state guidelines. The proposed turbine sites are Set-back more than 1000 feet from state, county and township roads and occupied residential homes. The Project established this standard to further mitigate noise impact to occupied residences and to either meet or exceed set back guidelines used by other counties in Minnesota established for roads.

The specific collection system configuration and layout has not yet been determined. The exact location of roads and underground facilities will be influenced by discussions with the National Resources Conservation Service ("NRCS"), the MNDNR and the U.S. Army Corps of Engineers regarding the specific locations of wetlands in the area of the Project. There are wetlands located in the area, and we will be sensitive to all wetland issues when constructing the Project in these areas. The Project will obtain any and all necessary permits from the appropriate permitting authorities.

Other than turbine/transformer foundations, electrical/communication infrastructure and roads, there will be no permanent structures built on the Project site. The Project will not be constructing any permanent buildings for the construction, operation or maintenance of the Project. Subsequently, no wells for water supply, plumbing or other infrastructure will be needed.

6.2 Description of Turbine Equipment to be used in the Project. See Appendix C for Technical Information.

The Project will be built using 8-Nordex N90-2.5 MW wind turbines. The turbines will be built on 80 meter towers and have a 90 meter rotor diameter. Cut in and cut out wind speeds are 3.5 m/s (6.7 mph) and 25 m/s (55 mph) respectively. This turbine can withstand windspeeds in excess of 100 mph.

The turbine has active yaw and pitch systems and asynchronous generators. The planetary gearbox, double-fed generator and associated equipment is mounted on a heavy duty bedplate to lessen torsional twist and other detrimental flexing due to gyroscopic and thrust loading from the large rotor. This provides for longer life spans due to proper alignment of the major equipment.

There is a Supervisory Control and Data Acquisition (“SCADA”) communications system to continually monitor the Project’s performance and availability 24/7. The SCADA system allows either on-site or remote monitoring of the turbines.

Operations and maintenance of the Project will be handled jointly by the Project and Nordex. We will structure the operations to provide for oversight and timely operations eliminating unnecessary downtime.

Made from specially manufactured steel, the tubular tower is approximately 80 meters and consists of three sections with heavy duty flanges at connection points (both section to section and section to foundation). The manufacturing process is tightly monitored for quality control per American National Standards Institute (“ANSI”) and International Electrotechnical Commission (“IEC”) specifications. Access to the inside of the tower will be through a secure steel door. Entry to the nacelle will be made from the inside of the tower by way of a ladder with safety assent and decent devices for workers. Resting platforms will be installed at three or four levels. See Appendix C.

6.3 Interconnection and Transmission. The Project has filed Large Generator Interconnect applications with MISO and is currently finishing up the System Impact Study.. The Project is being studied by MISO in Group 5, which includes approximately 2800 MW of wind generation. Scoping meetings have been completed with MISO to connect the entire 20 MW Project to the electrical grid. Comments from utilities and their analysis for the Project is expected to be complete by August or September of 2007. A substation is planned and engineering has been completed by Consulting Engineers Group to connect the Project to a GRE 69 kV transmission line through a Project owned substation to be constructed in Gilchrist Township, Section 12. The GRE 69 kV line is a tap emanating from an Xcel line located 9 miles away from the Project site, near the community of Brooten. See Appendix D.1-Electrical One Line. The site layout, including interconnection, is depicted in Figure 2.

6.3.2. Electrical Distribution/Collection. A common overhead feeder collector is planned, rated at 34.5 kV, connecting turbines and groups of turbines by way of group operated switches. Power collected through these switches will mitigate production downtime through the ability to isolate turbine strings if underground faults occur. The 34.5 kV feeder line will be constructed primarily on property leased by the Project, and the line as planned will cross over County Road 84 in Gilchrist Township Section 13, 1.25 miles south of the Project substation (Section 12). The Project will obtain easements and permits where necessary to cross and/or parallel County Road 84. There is no Certificate of Need required for this low voltage line. No public water crossing permit is required by the MNDNR. The Project will register the location of the 34.5 kV line with Gopher State One Call.

A qualified contractor will construct the overhead distribution system and may also be contracted to maintain the system in times when problems may arise. A yearly maintenance program will be put in place to ensure that obstructions such as trees are trimmed back to mitigate problems affecting lines, insulators and poles.

6.4 SCADA. Supervisory Control and Acquisition System. There will be two SCADA systems in place for this Project: (1) the utility SCADA, which monitors those aspects concerning GRE, the power purchaser and the MISO system, and (2) a SCADA for monitoring the operation of the wind turbines.

The Project will construct a substation to interconnect the Project to the utility grid with a state-of-the-art SCADA system for monitoring turbine operations, electric metering and the point of interconnection.

The Project SCADA will be an essential part of the Project, performing many tasks, including the following:

- Remote or local monitoring of the site for availability.
- Alert personnel of faults caused by down turbines or utility shut down of the site.
- Allow operators to reset turbines under certain conditions.
- Indicate to operators each turbine’s performance and collect historical data to aid in maintenance and operations of the Project.
- Provide inventory informationGenerate reports concerning operations, condition monitoring, and overseeing short term and long term maintenance aspects

The SCADA system will be overseen and monitored by a Nordex operations and maintenance team, a financial entity representative, and a representative from the local owner group.

6.5 Access Roads. Access roads and pads adjacent to each turbine will be built to accommodate construction and future operations and maintenance traffic to and from turbine sites.

The Project has designed the access roads to be 12 feet wide and approximately 8 inches deep to minimize the amount of land taken out of agricultural production. Six inches of topsoil will be removed and replaced with 2 or 3 inches of pit run gravel, a layer of road fabric and topped of with 5 or 6 inches of class 5 road gravel. Culverts will be placed appropriately where needed to assist in diverting excess water runoff as per Township, County and State rules. See Appendix E.1.

6.6 BoP Contractor. The Balance of Plant (“BoP”) contractor will be responsible for construction management for the Project. A BoP contractor has not yet been selected. The Project will utilize local construction workers to the extent possible. The Project will attempt to use construction firms located within the State of Minnesota whenever possible. Some of the engineering and BoP activities for this Project include:

- Engineering the electrical system, including overhead and underground collection system and substation.
- Obtaining soil samples.
- Engineering roads, turbine and transformer foundations.
- Securing the necessary permits.
- Selecting construction firms and scheduling construction activities relative to turbine delivery schedules.

The construction management team will be on site at all times throughout construction to manage all aspects of the construction process. The BoP contractor will be responsible for selecting contractors for the Project, but will be encouraged to use local labor if possible. Various aspects of the construction process include:

- Improving access and constructing long term roads for maintenance.
- Clearing and grading , including for roads, turbine sites, and the Project substation.
- Excavation and construction of turbine and transformer foundations.
- Building and erecting turbines.
- Trenching underground power and communication conductors.
- Constructing an overhead feeder circuit from the substation to and through the site.
- Assembling the Project substation.
- Installing security gates and substation fencing.

Construction activities will comply with any and all applicable permitting standards imposed by the U.S. Army Corps of Engineers and the MNDNR concerning the construction of the Project over or near wetlands, navigable waterways, and near any sensitive or endangered species or plants.

The BoP, the Project developer, the turbine manufacturer and transportation contractors will coordinate with one another regarding the timeframe in which the delivery schedule will take place. Timely commercial operation of the Project will depend on good communication of the terms of applicable interconnection agreements and well-planned timing and coordination of necessary utility work, including;

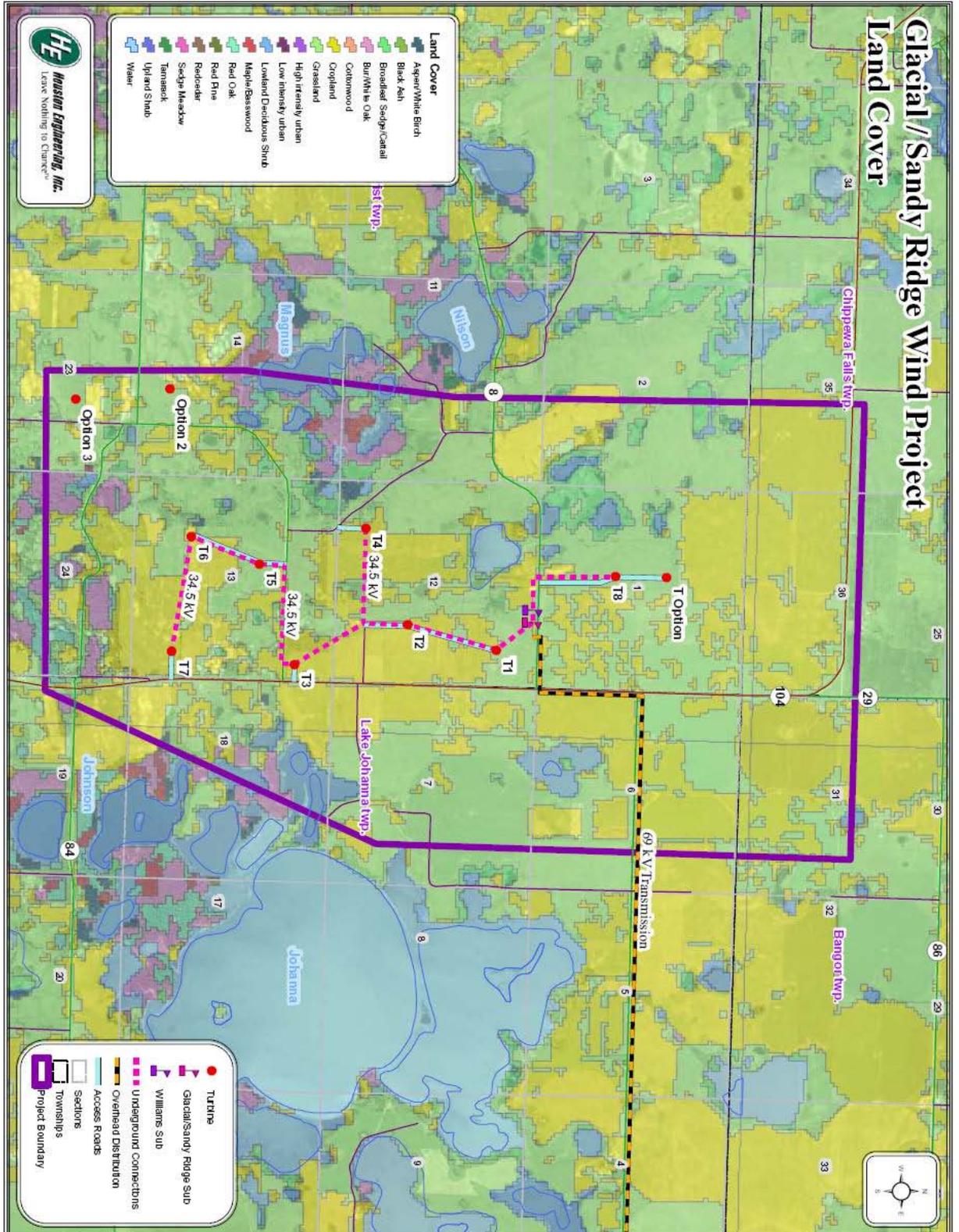
- Construction of a 69 kV feeder to the Project substation, including substation hook-up.
- Delivery of utility metering, utility SCADA-including coordination of securing T1 or other communication line(s) from the Project substation to GRE and the power purchaser, and other utility related work for this Project.

Prior to the commercial operation of the Project, the turbine manufacturer will be fully engaged to facilitate timely commissioning and start-up of the Project and to ensure installations are being done as per the manufacturer’s specifications. The power purchaser, GRE, the developer, the BoP contractor and the turbine manufacturer will work together to ensure smooth progress towards a commercial operation

date (“COD”) taking into account all aspects of coordination necessary for this Project to be completed on schedule.

The Project is working very closely with all the landowners to mitigate impacts to agricultural operations during the development, construction and the operational phases of the Project.

Map 2 Land Use Glacial Ridge Wind Project



6.7 Maintenance. Maintenance of the Project is key to ensuring long term mechanical and electrical viability of the Project. Early on, the Project will work closely with the equipment manufacturer

overseeing and sharing operations of the site. There are several scheduled maintenance and inspection processes that need to be done to ensure the viability and the expected life of the Project. Essential maintenance of the turbines will include checking bolt tensions, ensuring that the equipment is being adequately lubricated, and paying attention to and monitoring for possible contaminants in the lubricating systems. This will require extensive oils analysis and will be an integral part of the maintenance of the turbines.

The general maintenance duties will be contracted to the manufacturer and will be outlined and performed by manufacturer's service and/or operations representatives, but will include the above preventative maintenance scheme. Parts inventories will be overseen and maintained by the manufacturer's representatives as well as the trained personnel mentioned above. Upgrades will be incorporated into the Project as appropriate, including any necessary upgrades to the turbines, SCADA and operational software.

Additionally, it will be important to the operations of the Project to pay attention to power production and ensure that the turbine is performing up to, but not exceeding, the design parameters of the turbine.

7 Environmental Impacts

The proposed Project site stretches across approximately 2 miles on top of a portion of what is known as the Glacial Ridge, a ridgeline running in a northeasterly to southwesterly direction. The Project has options to lease about 676 acres of land. The nearest main roads or highways are State Highway 104, running north and south, and County Roads 8 and 84, which both run east and west. State Highway 104 is a main highway which will provide the Project with very good exposure to passersby using this highway. The Project will be visually apparent from these roads near the town of Brooten located approximately 9 miles to the west and from other township and county roads. See Appendix F.1

Agricultural fields, farmsteads, and scattered woodlands dominate the landscape in all directions around the proposed wind project site. A combination of cropland and dairy cattle pastureland, along with small mixed woodland plots surround the site. The cropland in the area is a mix of small grains and forage crops creating a low, uniform groundcover. The Project has a mean elevation of 1400 feet above sea level. As mentioned above, the site is located on top of a prominent ridge running in a southwesterly to northeasterly direction and provides good exposure to the local wind resource.

Vehicle traffic at the Project site will be kept to a minimum, and access to the site will be controlled. It is not known at this time how many vehicles will be on site for construction and equipment delivery activities. Temporary disturbances to the land due to traffic and crane set up, off loading turbines, towers and rotors and building of the rotor will be repaired upon the completion of the construction process. Any crop damage to the land surrounding the turbine sites during the construction, operations and maintenance phases of the Project will be paid for by the Project.

Maps are included that indicate a number of features of the proposed Project site. These include; State Wildlife Management Areas ("WMAs"), State Scientific Natural Areas ("SNAs"), Hydrogeology, Soils, County/State/Federal Parks, Wetlands and Public Waterways (named and unnamed), Residential Dwellings, and a Site Layout.

7.1 Demographics Pope County There are 670 square miles in Pope County and the population, as of the 2005 census estimate, was 11,252 representing an increase of 0.1% change over the 2000-2005 period and approximately 16.8 people per mile. Pope County's median family income for 2004 was \$38,563 dollars per household.

As of 2004 there were 361 private non farm establishments with 4,027 paid employees and 934 private non employer establishments. Manufacturing shipments in 2000 totaled \$97,849,000 with retail sales of \$91,696,000. Private non-farm employment rose 25.5% from 2000 to 2004 and there were 89 building permits issued by the county in 2005.

The Project area is primarily agricultural/ranching operations with few new residents over the last several years moving into the area.

7.1.3 Economic Impact to the Area. Approximately 4 acres of land will be taken out of agricultural production due to the construction of access roads for the Project, and another ½ acre of land will be removed from agricultural production for the Project's 8 wind turbines and pads for transformers. Land rents from cropland in the area are approximately \$35-50.00 per year per acre, or a total of (at 50.00 per acre) \$275.00 per year.

To the extent possible, the Project will use local contractors for road construction and other contract labor. Foundations and the electrical work will be done by contractors located in the area, with the erection and commissioning of the turbines being performed by Nordex.

Several of the landowners of proposed turbine sites are also owners of the Project. The Project will make a positive impact on the local economy both directly and indirectly during the construction phase and over the life of the Project. The local economy will benefit from the Project through land lease payments, local ownership of the Project itself, and the employment of local contractors in the construction and maintenance of the Project. Studies have confirmed the economic benefits of wind projects to local communities in other counties in Minnesota and elsewhere in the United States. This Project will have a significant positive impact on the communities in which the Project is located.

7.2 Noise. Noise levels typically will be not higher than 50 dba at occupied residences near the Project site. Noise is a concern that has been addressed by wind turbine manufacturers, and there is much information regarding the expected noise output of the Nordex N90-2.5 MW turbines. Turbines emit the most noise during windy conditions, and it has been found that during these conditions, the sound of the wind drowns out noise emitted by the turbine equipment.

The Project will adhere to the applicable noise level standards in Minn. Rules 7030.0040-.0050. A WindPro noise analysis will be done by Nordex to ensure compliance with the Turbine Supply and Warranty Agreements, especially as the terms of those agreements relates to compliance with state law.

The Project layout exceeds state noise criteria by not constructing any wind turbines closer than 1000 feet of any inhabited residence. The Project will ensure compliance with the Minnesota Pollution Control Agency ("MPCA") noise standards.

7.2.1 Mitigative measures. Mitigative measures regarding noise will include turbine modeling to determine how many feet away from occupied residences the turbines need to be in order to satisfy applicable noise criteria. The Project has calculated that siting turbines at least 1000 feet from residences will exceed the noise criteria in the above-mentioned rules. The 1000 foot set back from occupied residences proposed for this Project will be more than adequate to meet state criteria, ensuring compliance with Minnesota Pollution Control rules. Nordex is currently performing a WindPro analysis for the proposed setback, and wind turbine siting will be adjusted if necessary to meet applicable noise standards.

7.3 Visual Impacts. The proposed Project site is located near State Highway 104 and its intersections with Pope County Roads 84 and 8. State Highway 104 runs north/south in Pope County and both county roads mentioned run east and west. These roads are adjacent to or run through the proposed site. The Project would be visually apparent from these roads and other township roads near the proposed site. These 2-two lane, main arterial roads carry relatively small amounts of traffic, which is mostly local in nature.

Agricultural fields, farmsteads, and woodlands make up the landscape in all directions around the proposed wind Project site. A combination of cropland, pastureland, and small mixed woodland plots surround the site. The cropland in the area is a mix of small grains and forage crops creating low, uniform cover. The municipality of Brooten is located 7.5 miles to the east of the Project site, near the GRE 69 kV tap to which the Project is proposing to interconnect. Most of the proposed Project site is located at an approximate elevation of 1380-1400 feet above sea level. Primarily, the site is located on top of a prominent ridgeline which runs in a northeasterly to southwesterly direction, which provides good exposure to the wind resource

The aesthetic effects of wind turbines are subjective. We have attempted to be sensitive to those concerned with the visual impact of placing the eight turbines within eyesight of existing or future residences. Generally, feedback we have received from the community has been positive for this Project.

The turbines appear to be high tech equipment, but the consensus in the wind industry is that there is a rural “feel” to wind turbines which is very compatible with traditional farming community heritage. The Project itself will produce no emissions or use any industrial resources to power the equipment.

During the nighttime hours, the Federal Aviation Administration (“FAA”) requires structures over 200 feet to install aircraft warning/obstruction lights. The Project will use FAA guidance and guidelines to provide for aviation safety.

7.3.1 Mitigative Measures. Mitigative Measures regarding visual impacts will include the following:

- Turbines and/or roads will not be placed in environmentally sensitive areas and agencies with authority over wetlands, SNA’s, WMA’s, etc. will be contacted to ensure compliance and mitigate impact.
- We will strictly adhere to FAA lighting regulations issued for the Project.
- Existing roads will be used for access roads when possible.
- New access roads are needed and we will strictly follow permitting rules as issued by the governing authority.
- Access to the site will be controlled and kept in an orderly manner with staging areas to consolidate short term and/or long-term construction and/operations activities.
- Disturbed areas will be restored and reseeded as soon as practicable after the construction process is complete and throughout the life of the Project.

7.4 Public Services and Infrastructure. As mentioned above, the site is located within 7.5 miles of Brooten, MN. and can be described as being a very rural agricultural setting. State Highway 104 running north to south and county roads located adjacent to the Project site serve mostly local needs. Other than township roads which serve limited amounts of traffic, there is no other transportation available in the area. Currently there are no plans for service structures and no need for city or rural services for water or sewer.

The Project does not intend on constructing any office or building for maintenance or operations for the Project, but in the event the Project or Nordex does, it would probably utilize an existing structure located in the town of Brooten or on site. Impacts to public services will be minimal due to the relatively small number of employees needed to operate and maintain this site. The Project estimates that only 2 or 3 individuals will be needed for project oversight/operations with an estimated 500-600 hours of scheduled maintenance per year per turbine.

7.4.1 Electric Service. Agralite REC and Great River Energy own and operate electrical service in the area serving retail electrical customers. The Project’s needs for retail electrical power exist only at the Project substation, which will be fed by Great River Energy, the entity that also owns and operates the 69 kV distribution feeder located between the Williams Substation and the Xcel 69 kV tap located 9 miles east of the Project site near Brooten, MN. The GRE 69 kV transmission line is located adjacent to the Project site and terminates at the Williams Substation located 500 feet west of the proposed Project substation. The Project will delivery the power it produces into the GRE 69 kV line. A 41.6 kV feeder also comes out of the Williams Substation to serve Agralite REC.

7.4.2 Water. Construction, operation and maintenance activities for the wind project will have minimal water needs. Most of the needs for the Project will come during the construction process and will be for applying water to newly built roads to facilitate the compaction of the gravel and to keep dust

controlled. There is no need for the installation of a well for water on site. Rural water service serves the rural community in this area.

A NDPEs permit will be obtained and proper procedures followed to ensure the use of best practices guarding against soil erosion during the construction process relating to storm water runoff.

7.4.3 Waste. Discharge and waste discharge utilize septic systems. A portable toilet will be installed on site for construction personnel during the construction phase. We do not think that there will be any long-term problems or issues that would have a negative impact on the site concerning water service or waste.

7.4.4 Television. It is not expected that the Project will have an impact on television signals in the area. Most families have satellite dishes installed and the Project will site turbines well away from these dishes and communication paths. Local service may be disrupted on televisions using service other than satellite; to address those instances, prior to construction the Project will establish baselines for radio and television signals. If it is found that construction of the Project has adverse effects on signals, the Project will come to an amicable resolution to rectify any problems caused by the location of the wind project. The Project could address this problem least expensively by simply providing and paying for satellite television.

The Project has done a preliminary scan of micro wave beam paths in the area with maps provided by the Minnesota Department of Transportation (“MNDOT”). A firm specializing in identifying problems resulting from microwave beam path disturbances will be contracted to identify other potential micro wave beams in the vicinity of the Project site. We have included the results of MNDOT’s search with this application, which indicates the signals relative to the proposed project site.

Mitigation We will contract with ComSearch to conduct a microwave beampath study to ensure no interference with existing microwave towers located in the Project area that emit signals where turbines will be constructed. We will review the findings of the study and make final turbine siting decisions based on information provided by ComSearch and MNDOT, with the intent being to eliminate problems regarding communications. The Project has already contacted MNDOT concerning their microwave beampaths. See Appendix for a map depicting MNDOT’s communication signals.

Additionally, we will work with ComSearch or another capable contractor specializing in off air signal strength studies. Once the Project is constructed, we will be able to determine the level of impact the Project has made on off air television reception if a complaint is made. The Project site is in a sparsely populated area of the county and many people in the area have satellite television. If the Project is found to have caused interference with television reception, the Project will take action to address those problems.

7.4.5 Traffic. Traffic in this area of Pope County is minimal. Short-term traffic bottlenecks are possible, but not anticipated, as a result of bringing trucks with large loads in to the site. The Project will be working with MNDOT, Pope County and the affected Township(s) to ensure ease of access by widening out entry points on state, county and township roads to make the impact of in bound and out bound traffic relating the Project similar to the impact of existing agricultural traffic on access roads for nearby fields. The Project will ensure that all applicable permits and safety procedures are followed to mitigate negative traffic impacts, including using traffic cones and road guards when bringing equipment into the site or for trucks exiting the site.

7.4.6 Cultural and Archaeological Impacts. The Minnesota Environmental Rights Act, Minn. Stat. Chapter 116B states that "... each person is entitled by right to the protection . . . of air, water, land and other natural resources located within the state ...". Minn. Stat. Section 116B.01. "Natural resources" are defined to include historical resources. Minn. Stat. Section 116B.02, subd. 4.

The Project has contacted Tom Cinadr of the Minnesota State Historic Preservation Office (“SHPO”) (see attached Appendix G) requesting a scan or review of the Sections of land in which the turbines, roads, overhead collector system and substation are proposed to be constructed. Mr. Cinadr’s scan

revealed no cultural archaeological or historical leads or concerns relative to the Project. SHPO's archives include archaeological site files and cultural resource studies pertinent to the Project area.

However, the Lake Johanna Historical Society owns a log cabin that was moved over from the Fort Lake Johanna site which was located approximately 2 miles south of its current location. The cabin's history is notable because of its historical ties to General Henry Hastings Sibley and the Sioux uprising.

General Sibley left a notable legacy in the state's early history. Sibley came to Minnesota in 1834 at the age of twenty three, as an employee of the American Fur Company and represented the Minnesota Territory in the U.S. Congress, served as a regent of the state university, and became the state's first governor. It is Sibley's role in the Sioux uprising that brought is may be most notable. In 1862, after more than a decade of treaty abuses, four Sioux Indians murdered five white settlers in Meeker County. Fearing retribution, Sioux leaders chose to go to war, attacking and destroying two agencies along the Minnesota River. The Sioux uprising was under way. Settlers fled for their lives, abandoning their prairie homesteads and constructing hastily built stockades for protection, such as Fort Johanna which was located approximately 2 miles south of the proposed wind project site. Remnants of Fort Lake Johanna were taken down and relocated in section 13. Colonel Sibley and his troops were sent from St. Paul to help quell the conflict rescuing Fort Ridgely and defeating the Sioux at a number of key sites. Later the troops freed more than 260 prisoners held by the Sioux. Sibley went on to pursue the Sioux into North Dakota, but the damage in Minnesota was devastating. As many as eight hundred white settlers and soldiers had been killed, and the losses to the Sioux may have been even greater.

The relocated cabin location, depicted on the residence map, is west of 312th st. on 160th Ave, and is located approximately 2,500 feet east southeast of T7.

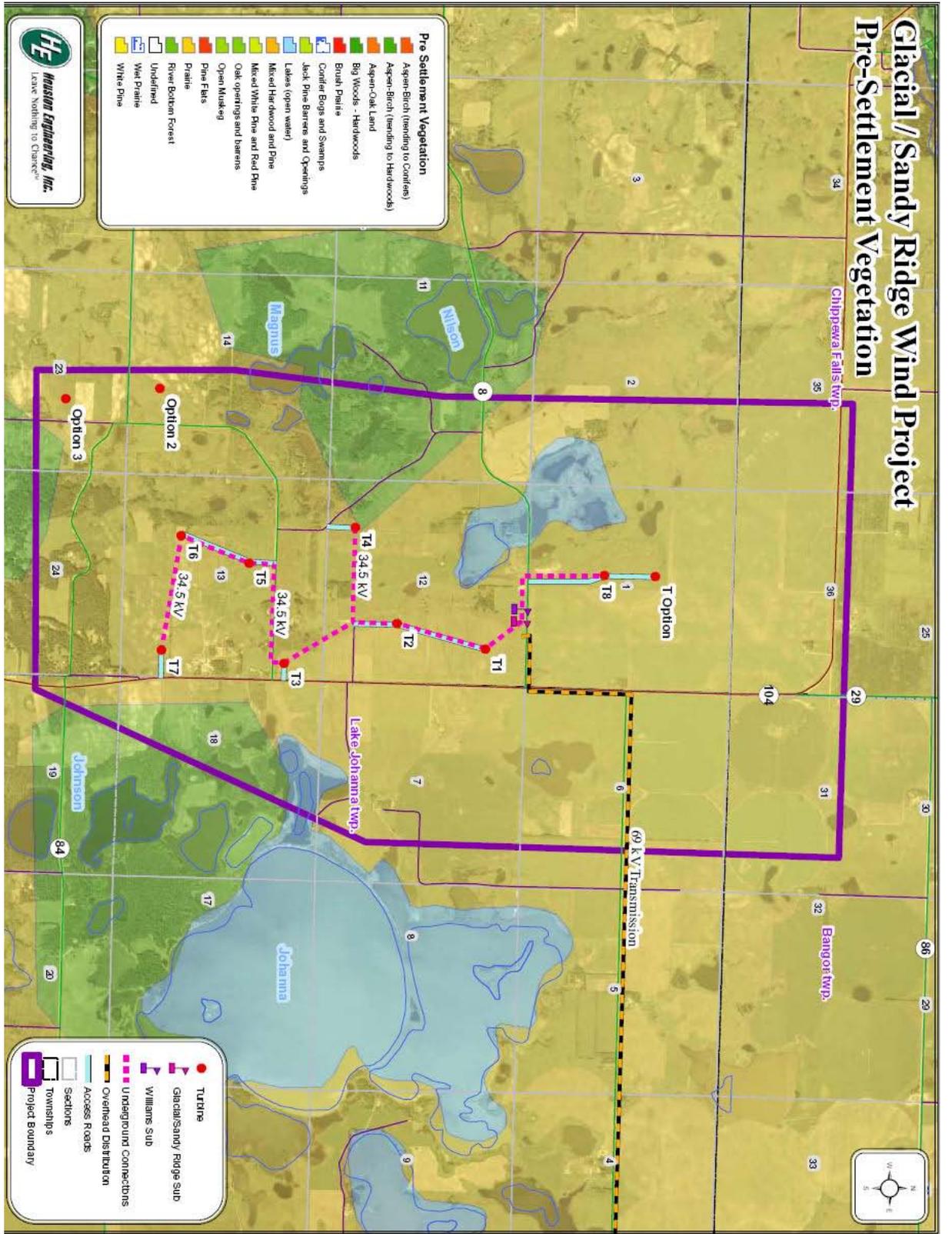
We also queried the National Register of Historic Places ("National Register") and received no results for our scan of the Project townships showing registered historic leads located in or near those Sections queried.

Early history of the State's culture in the region begins with PALEOINDIAN (ca. 10,000 to 6000 BC) period. As glaciers receded from the Upper Midwest, migratory groups of people settled throughout the area's open woodlands and succeeding grasslands, hunting native herding animals such as bison and mastodon, and likely exploiting available small-game, fish and plant resources as well. Throughout much of this period, the climate was becoming successively warmer and drier. There were several periods marking the diversification of culture and technology indicating adaptation to the local environmental conditions as the region changed to cooler, wetter periods.

Early in Minnesota history (ca. 1630), western portions of the State were occupied by Yankton Dakota, while Santee Dakota occupied the east. Ojibwa peoples had largely displaced the Dakota in the northeast by the mid-1700s. French fur traders moved into the region by the late 1600s, to be succeeded, in turn, by English and American traders. EuroAmerican settlement of the area accelerated in the early 1800s with the establishment of Fort Snelling at the confluence of the Minnesota and Mississippi Rivers. Urban commercial centers formed around the water-powered mills of St. Anthony Falls and the northernmost navigable areas of the Mississippi River. The region saw the development of agricultural communities in the south and west, and lumbering centers in the east and north during the mid- to late 1800s.

The Legislature of Minnesota defined Pope County on February 20, 1862 and located the county seat at Stockholm in Gilchrist Township. On August 13, 1866, a convention was held at Stockholm, Gilchrist Township to prepare a petition to organize Pope County. The petition was signed and forwarded to Governor W.R. Marshall. In response to this petition, Governor Marshall, on August 18, 1866 appointed Thomas Chance, J.G. Canfield and Ole Reine as the first commissioners of the County, and directed them to take the necessary steps to effect a county organization. The county seat had been located at Stockholm by the original act, and the first meeting of the newly-appointed board was held at that place on September 4, 1866, but in that year the County seat was moved to Glenwood, MN. As mentioned above, there are no historic buildings or historic sites that are registered by the Minnesota Historical Society or on the National Register.

Map 3 Presettlement Glacial Ridge Project



Mitigation. Farming and ranching operations have been prevalent since the late 19th century, and historical artifacts have not been recorded from any of the Sections identified as part of the Project site. Evidence of resource procurement may be found in the site area once excavation begins and the Project will instruct BoP managers and contractors to pay close attention for artifacts of historical value. If the Project unearths historical artifacts, the Project will contact SHPO or an archaeological consultant and ask for recommendations concerning found objects and the avoidance and mitigation of negative impacts and what they would like done to register the artifacts with either SHPO or the National Register.

7.4.7 Natural Resources/MN DNR/USFWS/SNA's/WMA's. There are several State Natural Areas, Wildlife Management Areas, or other similar recreational resources or recreational activities in the vicinity of the Project. These include the Bruce Hitman Heron Rookery SNA located 1.75 miles east of Tower 6, and; the Skarpness WMA area which is located approximately 3,000 feet to the northeast of Tower 1. These are the nearest state managed parks which are within the immediate vicinity of the wind project.

The Bruce Hitman Heron Rookery SNA is located in the middle of Lake Johanna, Section 17 of Lake Johanna Township and is considered by the MNDNR to be one of the most significant multi-bird colonies in the State with unique mixed colony species. First surveyed in 1974, the last bird survey done by the MNDNR was in 2004. The survey done by the MNDNR in 2004, recorded 580 Double-crested cormorant nests, 20 Great Heron nests, 500 Great Egret nests and 15 Black-crowned Night Heron nests.

This Scientific Natural Area is a "Deciduous Woods" Type and "Minnesota River Prairie" ECS Subsection located about 1.5 miles east of Tower 7. Bruce Hitman did an early study of the herons and the small island SNA located on Lake Johanna is named after him. The rookery is notable for being one of the largest and most diverse nesting sites for colonial water birds in the state. According to the State's Natural Heritage Data Base, bird species that nest or feed in the areas, in addition to those mentioned above, are the little blue heron, snowy egret, yellow-crowned night heron and cattle egret and green backed heron. See Appendix for information from the database.

Skarpness WMA, located in the East half of the SW ¼ of Section 6 in Lake Johanna Township is the nearest governmentally run park. When the Project developer met with the MNDNR and USFWS, the main concerns expressed were about bird populations in the Bruce Hitman Heron Rookery, and not about the Skarpness WMA.

The Skarpness WMA is an open water basin surrounded by a thin edge of grass. There is a four acre woody cover planting on the WMA, which is managed as a migratory waterfowl habitat. Canvasbacks, redheads, ring-necked ducks, pelicans, great egrets, great blue herons and cormorants have been seen in this basin. The WMA is located about 3,000 feet east of the nearest turbine (Tower 1) and on the opposite side of State Highway 104 from the Project site. Information provided by the DNR

Nature Conservancy's Ordway/Glacial Lakes Prairie Preserve is located 4,800 feet south of the Project's nearest turbine, Tower 7. The Ordway/Glacial Lakes landscape is a priority area for conservation in Minnesota. This is a region of rolling hills and lakes, tallgrass and dry gravel hill prairies, calcareous fens, wetlands, maple-basswood and oak forests. The patchwork landscape combines grasslands and woods in a representation of millions of acres across the Midwest where competition between prairie and forest was intense. The land harbors a tremendous diversity of nesting bird species, including bobolinks, meadowlarks, and northern harriers. Prairie butterflies and rare and uncommon plants from Hill's Thistle, to prairie dropseed, to purple coneflower inhabit this landscape.

The lands here are threatened by habitat fragmentation caused by development, farming, and gravel mining. Exotic species have also invaded. Purple loosestrife stalks the wetlands and non-native grasses damage habitat for grassland birds and butterflies.

Mitigation of Impacts. The buffer of 4,800 feet between the preserve and the nearest turbine should be adequate to avoid any negative impacts on plants or animals located in the Prairie Preserve. .

Information Provided by Press Release from the Nature Conservancy.

Other Recreational Activities. There are lakes or rivers near the Project site that serve as recreational activity centers for residents of and visitors to Gilchrist Township. The recreational lake that is located closest to the Project site is Scandinavian Lake, which is 2.66 miles east of Tower 6. There are several cottages located on this lake, which is popular for fishing, boating and other recreational activities mainly during the summer months.

Nilson Lake on Figure 5 below is an environmental lake with no cottages located on its shores.

Other activities such as deer hunting and snowmobiling in this part of Pope County are very popular.

Impacts. Avian mortality in Minnesota is relatively low compared to wind facilities located in other areas of the U.S., particularly in comparison to those areas with many birds of prey such as in the Altamont Pass in California. Resident bird mortality for the Project is predicted to be low, based on an avian study done on the Buffalo Ridge. The authors of that study have indicated that based on the estimated number of birds that migrate through the Buffalo Ridge (and ultimately Minnesota) each year, the number of wind related avian fatalities is likely inconsequential relative to the overall bird population. The rare and unique avian species described above are located outside the actual Project area. These birds may travel through the Project site, particularly during nesting times, to move between nesting sites and feeding areas, but are predicted to move through the Project site at heights below the turbine rotor blades. Initial observations indicate that these flight paths follow lower areas of airspace and it does appear that the flight paths are lower than the turbine rotors.

Mitigation of Impacts to Natural Resources. A site walk-through was done in early May of 2007 to understand better the agencies perspectives on siting wind turbines in this area. Correspondence between the Project and USFWS and MNDNR have indicated that those agencies would like a survey done primarily to investigate the flight paths from existing nesting areas to feeding areas prior to their making recommendations regarding turbine sites. The USFWS have indicated that there may be funding available for this Project to help facilitate such a survey. We have indicated to these agencies that we have contacted a person qualified to conduct a preliminary study, and the Project has stayed in contact with the MNDNR and USFWS to determine the timing and the scope of the survey. We will work closely with the MNDNR, USFWS and the Soil and Water Conservation District ("SWCD") to obtain their recommendations when routing overhead collector lines and finalizing turbine locations to minimize impacts to the area and any special bird/animal species. The turbine sites are located, on average, about 50 feet above valley type routes between the Bruce Hitman SNA and the Skarpness WMA. The Project plans to conduct the above-mentioned survey to determine the routes and heights birds are using to travel between nesting areas and feeding areas. In order to minimize impacts to resident and migratory birds and other wildlife resources, we will:

- Communicate and meet on site with MNDNR, USFWS, the SWCD and other interested agencies prior to construction,

- Work closely with those agencies to facilitate surveys and work with those agencies to site the turbines, access roads and collector systems above and away from flight paths between the WMA, the SNA nesting areas and feeding grounds,
- Use existing access roads for construction, operations and maintenance when possible,
- Avoid disturbance of wetlands and drainage systems,
- Protect existing plants,
- Establish comprehensive communications with BoP contractors to mitigate disturbances to soil during excavation,
- Minimize storm water discharge and maintain soil erosion control, and,
- Reseed disturbed areas.

7.4.8 MNDNR Area Coordinator/Minnesota Natural Heritage Database. Correspondence between the Project and the MNDNR’s project coordinator for the area, Paul Stolen, included comments and recommendations from Lisa Joyal, Endangered Species Environmental Review Coordinator. We have indicated a preference early on to work closely in supplying them with maps and a project summary in order to receive feedback from them.

The Project has received information from the Natural Heritage Database (“NHD”) indicating the bird types located in the area as well as endangered native plants. There was some concern expressed about potential negative impacts on a native plant in Section 11 near a previously proposed turbine site. In order to avoid any negative impacts to native plants, the Project has relocated the potentially problematic turbine. No other concerns about birds or plants were indicated in the NHD survey.

A plat map was sent to us by the NHD coordinator which indicated a possible sensitive area in Gilchrist Township Section 13 near a proposed turbine site. The NHD suggested we construct turbines at least ¼ mile away from this possible sensitive area, and expressed a preference of a ½ mile distance from this possible sensitive area. We met with the MNDNR and the USFWS for an on site survey, at which time it appeared that neither the MNDNR nor the USFWS could locate the sensitive area indicated by the NHD. The Project is working to clarify this discrepancy. Please see Agency Appendices.

Our correspondence with various agencies indicates our willingness to relocate turbines, equipment and roads to new locations if such relocations were recommended by the MNDNR. Some of the mitigation efforts the Project will employ include:

- Not building wind turbines next to bird concentration areas or moving proposed turbine sites an adequate distance away from such areas.
- Clustering towers as much as possible so that there are gaps between them to allow for migrating birds to more easily navigate through potentially dangerous areas.
- Using proper lighting on top of turbines designed to reduce bird strikes. To this end the USFWS has found that flashing red lights are more effective than steady red lights. The MNDNR has indicated that more information from the FCC will be coming out soon regarding this issue, and the DNR has offered to keep us informed.
- There are bird diverters that can be placed on transmission/distribution lines. To this end the MNDNR feels that large swan diverters are preferable.
- Constructing underground utility lines, to the extent possible, is preferable to overhead construction.
- Pre and Post Construction Surveys were suggested and we have been in contact with both the MNDNR and the USFWS to establish their guidelines for this.

Mitigation Efforts Thus far the Project has relocated one turbine previously sited in Section 11 (mentioned above) and one in Section 12 pursuant to suggestions from the MNDNR during the site survey with the Area Coordinator and the USFWS. We have demonstrated a willingness to cooperate and work closely with the MNDNR on the final siting and will take into account recommendations from the various agencies prior to filing FAA 7460 permits. The Project will apply for a National Discharge Pollution Elimination System (“NPDES”) permit to minimize problems from erosion that would or may affect bird nesting sites. We will build overhead lines with diverters if suggested by the MNDNR or the USFWS.

Description and Conservation Status on Birds Mentioned by the DNR's Non-Game Wildlife Specialist

*from "All About Birds"

Double crested Cormorant- Cormorant populations greatly decreased in the 19th and early 20th centuries from human persecution. They recovered after the 1920s, with an interruption in the recovery during the pesticide era of the 1950s and 1960s. The National Audubon Society considered it a species of special concern in 1972. Increases after the 1970s were explosive in some areas. Increasing cormorant populations have caused conflicts with people. Cormorants have been suggested as playing an important role in the collapse of some fisheries, although data to support these claims are sparse. Cormorants eat fish at fish farms, and recent legislation has been proposed to control cormorant numbers.

Great Blue Heron- The Great Blue Heron suffered less from plume hunters and pesticides than other herons, and its numbers have remained strong. The largest and most widespread heron in North America, the Great Blue Heron can be found along the ocean shore or the edge of a small inland pond.

Little Blue Heron- A smallish heron of the southeastern United States, the Little Blue Heron breeds in various freshwater and estuarine habitats. It is the only heron species in which first-year birds and adults show dramatically different coloration: first-year birds are pure white, while adults are blue. Declining in much of its range in the United States. Because it does not bear long showy plumes in breeding adult plumage, the Little Blue Heron largely escaped serious population declines from feather hunting for the millinery trade. Habitat loss and human-caused changes in local water dynamics are the most serious threats.

Green Heron- A small, stocky wading bird, the Green Heron is common in wet spots across much of North America. It can be difficult to see as it stands motionless waiting for small fish to approach within striking range, but it frequently announces its presence by its loud squawking. Common and widespread. Populations difficult to census accurately, but appear stable.

Great Egret-A large white heron, the Great Egret is found across much of the world, from southern Canada southward to Argentina, and in Europe, Africa, Asia, and Australia. It's the largest egret in the Old World, and thus has garnered the name Great White Egret. Plume hunters in the late 1800s and early 1900s reduced North American populations by more than 95 percent. The populations recovered after the birds were protected by law. No population is considered threatened, but the species is vulnerable to the loss of wetlands.

Black Crowned Night Heron-With a range that spans five continents, including much of North America, the Black-crowned Night-Heron is the most widespread heron in the world. Overall, populations stable. Because of wide distribution and feeding habits, the Black-crowned Night-Heron is an excellent indicator of ecosystem health.

Cattle Egret- A small white heron of pastures and roadsides, the Cattle Egret is more at home foraging in grass than in water. It follows cattle, horses, and tractors to catch the insects they stir up. May still be expanding breeding range, but populations in some areas declining.

White Pelican- Breeding on lakes throughout the northern Great Plains and mountain West, the American White Pelican is one of the largest birds in North America. It winters along the coasts, but breeds only inland. A long-term decline stopped in the 1960s, and populations have increased since then.

7.4.9 MNDNR/Natural Heritage Database Rare Plant & Animal Species and Natural Features-

The Project sent a letter to the MNDNR Natural Heritage and Nongame Research Division, outlining the Project and requesting information concerning impacts to rare plant or animal species and other significant natural features as a result of constructing, operating and maintaining the Project. The review was done of all land within a one-mile radius of the Project footprint and found 14 known occurrences of rare species or native plant communities in the area. Several native prairie remnants have been documented in the southwest corner of Section 13, Gilchrist Township. The MNDNR has recommended that structures be located at least ¼ mile from these remnants with a preferable distance of ½ mile.

The Minnesota County Biological Survey (MCBS) has identified several “Sites of Biodiversity Significance” to the west and south of the proposed sites. These “Sites of Biodiversity Significance” may contain high quality native communities, rare plants, rare animals, and/or animal aggregations. The specific areas containing particular sites with native prairies in the vicinity of the Project site include The Nature Conservancy’s Ordway Prairie Preserve, located 4,800 feet Southsoutheasterly of Tower 7 on east side of State Highway 104.

The land that makes up the actual Project area has been farmed or ranched since the late 1800’s.

Mitigation of Impacts to Native Plant Communities hosting songbirds or rare plant species. We feel the Project can meet, if necessary, the ¼ mile set back from potentially sensitive areas located in Section 13 that was recommended to the Project by the NHD. If a ½ mile set back is requested, we would have to relocate this turbine entirely. The Project can also site overhead distribution lines at least ¼ mile from natural prairie remnants. The Project will build only on previously tilled/farmed land, file the appropriate National Discharge Elimination Pollution permits and comply with standard procedures for minimizing runoff and preventing erosion. We will do all we can to work with the agencies to minimize impacts to birds and special plant species. As mentioned above, a pre and post construction survey is planned to gather more information on impacts which may prove valuable for future wind projects in the State of Minnesota. It is important to preserve the natural heritage of Minnesota and we feel we can site turbines in a reasonable and orderly manner, respecting various animal and plant species, that benefits the environment and the greater good of Minnesota.

See Appendix for Correspondence with the MNDNR.

7.4.10 U.S Fish & Wildlife The Project also sent a letter to Ms. Laurie Fairchild of the USFWS, asking for a review to be done concerning threatened and endangered species and migratory birds in the Project area. Ms. Fairchild found no instances of known threatened or endangered species, critical habitat or candidate species as listed under the Endangered Species Act (ESA) of 1973.

At this time, the USFWS has issued no specific guidelines in response to our request regarding siting and construction of wind turbines. We did relocate two turbines which were previously located in Section 11 and 12 (also discussed above) per the suggestion of the USFWS representative during a site visit. It is our understanding that bird surveys, pre and post construction, should be done. There has been a substantial amount of communication between the USFWS and the Area MNDNR Coordinator concerning how the agencies would like that to happen, especially in terms of scope and the level of expertise needed. It is our intent to minimize impacts on migratory birds and habitat as per the Migratory Bird Treaty Act (MBTA). Because of the time it takes to permit projects and the inability to complete the suggested surveys at this time, the USFWS suggested that the Project submit the permit based on the current turbine locations. It is unclear to us at this time whether or not the surveys contemplated would result in moving or removal of turbines from the current proposed sites.

Mitigation of Impacts. We will work closely with the USFWS to work out a reasonable scope and process to mitigate turbine location impacts on any bird species the USFWS is concerned with. We will work with the USFWS to move or remove turbines if necessary, out of the flight paths of nesting and feeding birds.

7.4.11 Soil and Water Conservation District Kim Kruger of Pope County’s Soil and Water Conservation District reviewed site information and surveyed the site with Project owners and representatives of the MNDNR and the USFWS. Mr. Kruger indicated he would like to be informed prior to “Start of Construction” in regards to final siting and transmission.

Mitigation of Impacts-The Project will review all applicable guidelines and survey the Project area prior to beginning construction work on roads, foundations and electrical infrastructure for wildlife. We will follow all applicable regulations and site turbines to comply with set backs from wetlands. The Project will not encroach upon wildlife nesting areas and will minimize construction impacts by constructing infrastructure away from wetlands.

To the extent possible, the Project will use existing access roads and construct turbines on the tops of ridgelines and highground, avoiding construction of any type on land with a grade greater than 5%. Construction of turbine foundations and roads will be in areas where existing farming operations have occurred or are presently occurring.

Construction of the overhead 34.5 kV line will be occurring in areas where there are existing overhead lines. The Project has contacted the owners of these existing overhead lines and intends to mitigate Project impacts as much as possible. There are two utilities that own land on or near the Project site which we have contacted, GRE and Agralite REC. We do not expect any conflict with them in construction of our collector system.

There will be no damming, channelization or dredging activities of any kind for any part of the Project. The Project will observe proper set backs from wetland and public waters when constructing turbine foundations, the Project substation, and any overhead line, as per the MNDNR permitting requirements. We are working very closely with the MNDNR, U.S. Fish & Wildlife Service and the Soil and Water Conservation District to avoid impact to plants, animals and wetlands as much as possible.

We have met with or sent letters to representatives from the MNDNR, Pope County Soil and Water Districts and the U.S. Fish & Wildlife Service, all of whom have indicated that they did not believe there are any major issues concerning the construction of the Project's foundations, roads, overhead lines or other infrastructure needed for the Project. The Project will contact the SWCD two weeks prior to the start of Project construction to inform them that construction of the Project will begin. The SWCD has indicated that they would like to review our turbine and road layouts prior to construction to ensure we are not encroaching on wetlands or other environmentally sensitive areas. (See SWCD/Krueger correspondence Appendix J).

Concerning the construction of the overhead line, the SWCD has indicated they will give the Project a blanket permit allowing the Project to build along the roadways depicted based on information supplied by the Project.
See Appendix N.

8 Public Health and Safety, Including Air Traffic, Electromagnetic fields, Security and Traffic

8.1 Air Traffic. The nearest airport is located in the city of Glenwood, which is approximately 15 miles north of the Project site. Other regional airports located in St. Cloud and as far away as Minneapolis-St. Paul serve airport needs for families and visitors to the area.

Crop sprayers occasionally spray fields in the area but this activity is usually carried out during the day time hours by local pilots. The 420 foot tall wind turbines will be marked as per FAA guidelines and will be highly visible from several miles away. During the night time hours, FAA approved lighting will warn pilots and will also be visible from long distances.

8.1.1 Impacts and Mitigation. The construction of this Project should pose no hazard for air traffic because the wind turbines are highly visible during the day and night and turbine locations will be well lit up as per FAA rules. Permits have been applied for and the Project will comply with FAA rules regarding structures of this type.

8.2 Electromagnetic Fields. Low electromagnetic fields ("EMF") already exist in the area caused by existing low level 34.5 kV distribution lines which are located in the area and feed substations for local electrical load. The Project will construct a substation to transform the 34.5 kV collection voltage into 69 kV transmission voltage for transport on the GRE 69 kV line. This level of voltage is not fundamentally different than other distribution feeders which serve many urban and rural areas in Pope County near the Project site.

A working group on EMF made up of representatives from the Minnesota Department of Health, Department of Commerce, Public Utilities Commission, Pollution Control Agency, and the Environmental Quality Board issued a report entitled “A White Paper on EMF and Magnetic Field Policy and Mitigation Options,” which is attached here as Appendix H. Research on EMF and its relationship to health issues have mixed results – and some have shown no statistically significant association relationship to health effects including cancer. The Minnesota Department of Health concludes that the current body of evidence is insufficient to establish a link between EMF and health issues, but that the possibility of health issues stemming from EMF cannot be dismissed.

8.2.1 Impacts and Mitigation concerning EMF. Various state and federal entities have indicated that EMF does not pose significant health hazards. Because of relatively low voltage levels and low populations in this area, the Project will have a minimal impact as there will be no new high voltage transmission lines being constructed.

The Project’s distribution/collector system poses possible impacts on local communications systems where communication providers are not using fiber. The GRE 69 kV system is already in place, and the Project only needs to build a tap/feeder of approximately 60 feet from the existing 69 kV line to the substation steel. The Project will work closely with the interconnection provider and will identify locations of underground facilities. We will place distribution/collection systems as far away from existing underground facilities as possible. This should mitigate issues relative to EMF and communications systems.

8.3 Security. Project access will be restricted and rules regarding access to the Project site will be posted during construction. Once the Project becomes commercially operational, the Project will construct permanent gates and signage restricting access.

Mitigation and Site Control Turbines will be sited well off of local roads, and the turbine towers are fabricated of tubular steel construction and come equipped with lockable steel doors. Padmounted transformers are lockable, and will be marked with warning signs. An 8 foot security fence will be built around the substation, with signage warning people of high voltage.

8.4 Road Traffic. There will be no significant long-term change in roads or traffic patterns other than the possible widening of existing access roads. There will be two new access roads built and temporary expansions of existing access roads described below, but we do not think there will be problems associated with Project road construction either in the long-term or short-term.

The bulk of the Project’s use of State Highway 104, County Road 8 and County Road 84 and other township roads will come during the construction period which is expected to last about 4 months.

Mitigation of Traffic Impacts. After the construction period the use of these roads by operations and maintenance personnel will be minimal. The Project will obtain any necessary permits and strictly observe appropriate safety measures when bringing large loads off these roads. Road guards will be employed when bringing blade, tower and nacelle trucks into the site. Also, the Project will attempt to mitigate dust during construction using a tanker truck to spray roads to keep dust levels down. The Project will comply with all MNDOT, county and township regulations for safety during the construction and operations of the wind project. Please also see the permits, relative to Road Traffic, identified in Section 9 below.

9 Identification of Permits. The Project and its contractors will apply for all permits and licenses necessary that are not covered by this application. County, State and Federal permit regulations identified for the construction of the overhead collection system require working with several agencies, such as the MNDNR, SWCD, U.S. Army Corps of Engineers and the County Soil and Water District.

9.1 Summary of Permits Needed. The distribution line will be built from the Project owned substation located in Gilchrist Township (reference project map, Figure 2). From the substation, the overhead line crosses County Road 84, for which the Project will need a county crossing permit. The overhead line then turns west for ¼ mile on land owned by the Halls family. Below is an outline of permits needed.

9.1.1. County Road Crossing Permits for the Construction of an overhead line to cross;
A.CR 84

Temporary or permanent access road expansion permits needed for the delivery of towers, blades and associated equipment, including:

9.1.2 County or Township

- B. Section 12 along SH 104-Mark Halls property-MNDoT-access entrance widening permit.
- C. Section 13 along CR 84-Mark Halls-Pope County-(2 access entrance permits needed for this Section).
- D. Section 12 along CR 8-Allan Halls-Pope County-access entrance permit.
- E. Section 11 along Township Road-Dan Jennigess-access entrance permit.

9.1.3 An FAA Permit will be needed for structures over 200 feet tall. Permits applications have been submitted.

Form 7460-1; filed on line.

State rules require during the construction of the Project a;

9.1.4 National Pollutant Discharge Elimination System permit may have to be acquired by either the Project or the BoP contractor to mitigate erosion impacts during the construction process.

9.1.5 Electrical permit for the substation, overhead lines and the construction of underground and associated terminations within the transformers and towers.

Other permits may be needed to construct roadways for maintenance purposes, the placement of towers and transformers, and the installation of underground cabling for power and communications. The agencies mentioned above will be contacted to ensure no problems arise from construction, operations and maintenance of the Project.

See Table 2 for permitting summary.

Table 2 Summary of Permits Needed for Glacial Ridge Project.

Federal Agency	Type of Permit	Needed (Y-N)
FAA	7460-1	Y
U.S. Army Corps of Engineers	Section 404	N

State of Minnesota		
MNPUC	State Site Permit (LWECS)	Y
MNDNR	Public Waters Permit	N
	License to Cross PLandW	N
MNPCA	NPDES	Y
	License for Haz. Waste	Possibly
MN Bd of Water and Soil Resources	Wetland Conservation Act	N
National Conservation Resources (NRCS)	Form 1026 AD	Y
MN Dept of Health	Well Water	N
	Plumbing Review	N
MNDoT	Crossing Permit for Distribution/Collector Sys	N
	Access Widening Permit	Y
MNBoard of Electricity	Electrical Permits	Y

Local Permits		
Pope County (NRCS 1026AD)	Permit For Crossing/Paralelling County Roads (Distr/Coll) Pope Co. Hwy Dept	Y
	Access Permit (DoT)	Y
	Permit to Move Loads on Restricted Highways	Possibly

9.7 Hazardous Materials. The Project will activate a Material Safety Disposal System program to ensure the proper treatment of hazardous materials used in the construction and maintenance of the Project. No fuel tanks or barrels of hydraulic fluids or gear oils will be permanently stored on site and it is not anticipated that a hazardous waste transportation license will be necessary. However, if a decision at a later date is made to build a storage facility for operations it would be necessary to apply for a Hazardous Waste Permit for the storage of lubricants.

Project subcontractors will comply with all laws and/or engage licensed operator(s) affecting these areas.

There are three main types of lubricants that will be used on the Project: synthetic gear oil, hydraulic oil and bearing greases. The Project is not aware of problems associated with or permits needed for the utilization of these types of materials if they are not stored on site.

9.7.1 Mitigative measures. Mitigative measures will include the proper storage of these lubricants and monitoring the storage at all times during the operational life of the Project. If, during the maintenance of the Project, lubricants need to be replaced, the Project’s site manager will ensure that waste items such as fluids and/or rags for cleaning up spillage are disposed of properly, as per applicable regulations, in either hazardous waste dumps or taken away by approved contractors. As mentioned above, if any lubricants are stored on site, a Hazardous Waste Permits will be applied for through the MNPCA.

10 Description of Area including Agriculture, Forestry and Mining. Agriculture plays a significant role with small grains and ranching operations as the dominating forms of agriculture for this portion of Pope County.

10.1. Forestry-There are no commercial forestry operations in this area. There is a mix of hardwood stands but the area is not an area where commercial tree growing is prevalent. The Project will have little impact on areas taken out of agricultural production, and the Project will have zero impact on the current forest economy in this area.

10.3. Mining-Glacier deposits made up from unconsolidated rocks and binder in pits do not make for ideal road grade construction material. There are some gravel pits located in the area, and we do expect the Project to purchase gravel from these, which will have a positive impact in this regard. Currently, there are no pits located on any Project land.

10.4. Impacts and Compatibility The Project is very compatible with existing land uses. Agricultural activity will be able to continue between turbines throughout the life of the Project. During the construction process, normal farming activity will be disrupted for approximately 4 months. Once construction is finished and heavy equipment moved off the site, portions of the site not occupied by the turbines, access roads and other infrastructure for the Project will be restored and reseeded.

The Project will work with landowners in the Project area to make use of existing access roads and to aid in siting new roads and equipment and electrical lines. The Project will locate any drain tiles on the Project site, and will avoided undertaking construction activities in tiled areas if possible. In the event the Project disrupts the farming operations in the Project area by causing loss of crop, the Project will pay for crop loss as provided in the applicable lease agreement.

There will be some agricultural land that will be taken out of production for the life of the Project, however lease payments made to the local landowners will be greater than what the landowners could have made using that land for agricultural production.

10.5 Tourism and Community Benefits. It has been well reported over the last few decades that the rural community has lost and continues to lose jobs to urban areas. Although this Project does not employ a large number of people to operate and maintain, land lease payments, local ownership and effect of the Project on the tax base will undoubtedly benefit the community.

The areas recreational benefits, as mentioned above, primarily come from deer hunting activities. This Project should have no positive or negative impacts relative to hunting activities.

11 Environmental & Topography.

11.1 Description Glacial ice covered most of Minnesota many times throughout history, and periods of glaciation were separated by warm interglacial episodes. All of the surface sediment in Pope County is of the Quaternary Period (2,000,000 to 10,000 years ago). As a result of glacial events, most of Pope County consists of rolling landscape predominantly made up of loam and clay loam soils and a poorly integrated drainage system.

Stratigraphic nomenclature is used to identify differing soil/till formations. Eastern Pope County's main formation group is called the Ottetail River Group, which covers the eastern 1/3 of the county. Outcrops, drill cuttings, auger samples, water logs and cores are used to interpret soil conditions and the stratigraphy in MN. Sediments of the Ottetail River Group were deposited as glacial ice advanced south and then receded north. The sediment came from eastern Manitoba and western Ontario and was deposited in outwash plains as the glacier(s) melted.

Ottetail River Group soils can be characterized as a pebbly loam with roughly twice as many igneous and metamorphic rocks as carbonate rock types, with low to moderate amounts of shale. There are several subdivisions of this group, but the Project site is primarily made up of RRV#12-Pebble-loam, which is a sandy, grayish brown with a wide array of rock sizes from pebble to cobble which are generally angular in shape.

The Project does not anticipate making any impacts to the soil other than those to be expected during the construction of a Project such as this. The construction process will take some of the soils out of use that had previously been used for grazing and growing small grains. There is a slight possibility of an increase in erosion, but the Project will use best industry practices by installing silt fences when needed. The Project will communicate with contractors about the need for respect when driving vehicles and operating equipment in areas outside construction zones. Destroyed areas will be restored and damaged crops will be paid for by the Project.

11.2 Geologic and Groundwater Resources-The bedrock of Pope County is largely identified through geophysical interpretation, because the bedrock is buried at least 100 feet below the surface, and in some areas up to 650 feet below the surface. The information known about the bedrock in Pope County was derived from magnetic and gravity derivations from geophysical maps and drill cores and cutting samples that were taken from the southern and eastern portions of the county.

Pope County lies at the northern edge of the northern margin of the Minnesota Valley subprovince, which forms the southernmost subprovince of the Superior Province at the edge of the Canadian Shield. The Minnesota River Valley is divided into four crustal blocks, and Pope County is located on top of the Benson block. Most of Pope County consists of Archaean gneisses that have been subjected to metamorphic conditions. The Benson block is characterized by moderately deformed recrystallized tonalite, granodiorite, which are intruded by coarse grained pink granite.

The aquifers in Pope County consist of a complex network of surficial and buried deposits of sand and gravel. These deposits were laid down by a series of glacial advances and retreats that sculpted much of Minnesota. The very old fractured igneous and metamorphic bedrock beneath these deposits contains limited ground water. Many residences in the county derive their water from shallow buried sand and gravel aquifers. These aquifers do appear to be more vulnerable to pollution than other areas of the county. An extensive surficial sand and gravel aquifer in the eastern part of the county and common

hydraulic connections between the sand and gravel networks allow for a rapid infiltration of surface water recharge.

11.3 Mitigation of Impacts- Because the Project will avoid siting turbines on sloped areas, the Project does not anticipate any impacts other than those expected during the construction of a project such as this. Construction activities for the Project will take place primarily on flat, even ground. The construction process will take some of the soils out of production that had been used for grazing and growing small grains.

The Project will communicate with contractors the importance and need for respect when driving vehicles and operating equipment in areas outside construction zones. Destroyed areas will be restored and damaged crops will be paid for by the Project. Erection of the turbines, construction of infrastructure including roads and turbine foundations will only moderately affect the potential for erosion during the short construction period for this Project, and we will take a minimal amount of farmland out of production.

We will apply for a National Pollutant Discharge Elimination System (NPDES) permit, which is required by the Minnesota Pollution Control Agency. Industry standard best practices will be utilized by the Project to protect the top soil through the construction, operations and maintenance phases of the Project. Some of these practices may include the installation of silt fences, stockpiling topsoil for later use, containing excavated material, protecting exposed topsoil, and stabilizing restored areas.

11.4 Soils. Pope County is in the western part of Minnesota and has a land area of 435,845 acres. About 80 percent of the land area in Pope County is farmed. Corn, soybeans, and small grains are the main crops in the county. Hogs and feeder cattle are raised, and dairy herds are kept as well. A comprehensive soil survey was completed in 1972 which included drilling many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil extending from the surface into the parent material that has not been changed much by leaching or by the action of plant roots. The soil survey included such things as the observation of steepness of slope, length and shape of slope, the size and shape of streams, native plants and crops, and other facts about soils.

Soils have significant interaction with water resources. Highly erodible soils can contribute to sedimentation in rivers and streams. On the other hand, sandy soils with high infiltration and surface permeability characteristics significantly contribute to aquifer recharge. Soil associations and parent material are explained below.

The description of soils is helpful in identifying areas where runoff or erosion may be predicted. The USDA's General Soil Map for Pope County depicts soil types on the ridge where the Project is located. These types of maps are used to describe distinctive soil patterns and are useful in determining, in general, the types of soil in a large area, giving an indication on the degree of erosion that may be expected from this Project. The major types of soils located in the Glacial Ridge Project site are described below and have characteristics similar to one another that are typically present in gravelly type soils. They have moderate permeability, are excessively or well drained and, when irrigated, are commonly used for growing crops with much irrigation in the area.

Estherville Series. The Estherville series consists of somewhat excessively drained, loamy soils that are shallow over calcareous sand and gravel. The top soil tends to be slightly acidic, black loam about 6 inches thick, and the subsoil also tends to be slightly acidic and very dark grayish-brown and dark-brown in the upper 12 inches. These soils types have developed in loamy material and in the underlying sand and tend to be located in level to rolling topography and outwash areas in the eastern third of the county. These soils have moderate permeability in upper profile and slow or very rapid permeability in dense underlying till. Slopes range from 0 to 12 percent. Drought and low fertility are the major limitations in using these soils, but with adequate rainfall they are moderately well suited to growing crops. These soils are generally a good source of sand and gravel.

Barnes Series. The Barnes Series consists of deep, well drained soils that formed in calcareous loam glacial till. The organic matter content, available water capacity, and natural fertility are high, but permeability is moderate. Erosion control and fertility are the major concerns in using these soils. Most areas made up of Barnes soils are under cultivation and most crops will grow if rainfall is adequate and proper management is practiced. Slopes range from 0 to 12 percent.

Renshaw Series. Excessively drained soils located over shallow sand and gravel make up this series of soils. These have developed in loamy material overlying calcareous sand and gravel. There is moderate permeability in the upper 11 inches and very rapid drainage in the underlying sand and gravel. Their slopes range from 0 to 12 percent and are present in level to rolling topography.

The above-described soils' characteristics are representative of the many soil types located on the Glacial Ridge Wind Project. A soil map was acquired from the Pope County Soil and Water Conservation District representative, Kim Krueger. The map depicts in detail the different types of soils located in the Project area, which consist of sand and gravel/well drained underlying soils, with varying thicknesses of top soils of 6-11 inches. We can provide a more detailed description of the many different soils types if the permitting authority feels it is necessary. Please see Appendix.

11.4 Mitigation of Impacts-Construction of the Project's turbine foundations and access roads may affect erosion slightly during the construction process. There will be very little farmland taken out of production and minimal disturbance to adjacent areas when constructing foundations and roads. A National Pollutant Discharge Elimination System permit will be acquired by the Project. The Project will incorporate industry standard best management practices during the construction and operation processes to minimize erosion. We will set aside top soil from excavated areas to be reused for seeding around disturbed areas such as foundations and next to roads. Although we do not think it will be necessary because of the nearly level turbine sites, the Project will employ silt fences and other stabilization practices where appropriate to minimize the potential for any damage due to erosion.

11.5 Wetlands/Public Waters-Wetlands fall under both state and federal jurisdiction under the Wetland Conservation Act (state) and the Clean Water Act (federal). The wetlands and public waters in the vicinity of the Project area were identified by reviewing maps from the National Wetland Inventory (Federal) and the Public Waters Inventory (Minnesota DNR). Wetland maps used in preparing this application may or may not be comprehensive, as they are based on aerial photography and may not show all wetlands associated with a particular piece of property. Determining the boundary between regulated wetlands and non-regulated lands can be contentious. Regulations to protect water quality require that we create arbitrary boundaries within gradients or boundaries that are scientifically definable, and consist of areas where three criterion of the presence of hydric soils, the presence of wetland vegetation, and the presence of appropriate hydrology.

Determining the boundary of wetland, whether jurisdictional under federal laws, or not jurisdictional but still meeting the technical definition of a wetland, that is having the soils, vegetation and hydrology criterion met is called a "wetland delineation," and is generally performed by college graduates with science or engineering degrees working for engineering firms or environmental consulting firms who are familiar with the 1987 U.S. Army Corps of Engineers Wetland delineation manual. Defining a boundary depends upon soil and vegetation characteristics but it is easier to do where the slope of the land is steeper.

Some wetlands have visible surface water only a few weeks of the year. Some are farmed or mowed for hay, or maintained as lawn. All wetlands have soils that have been developed in wet conditions, are wet either above the ground or below (12 inches) of the surface of the ground, and have vegetation that has adapted to wet soil conditions.

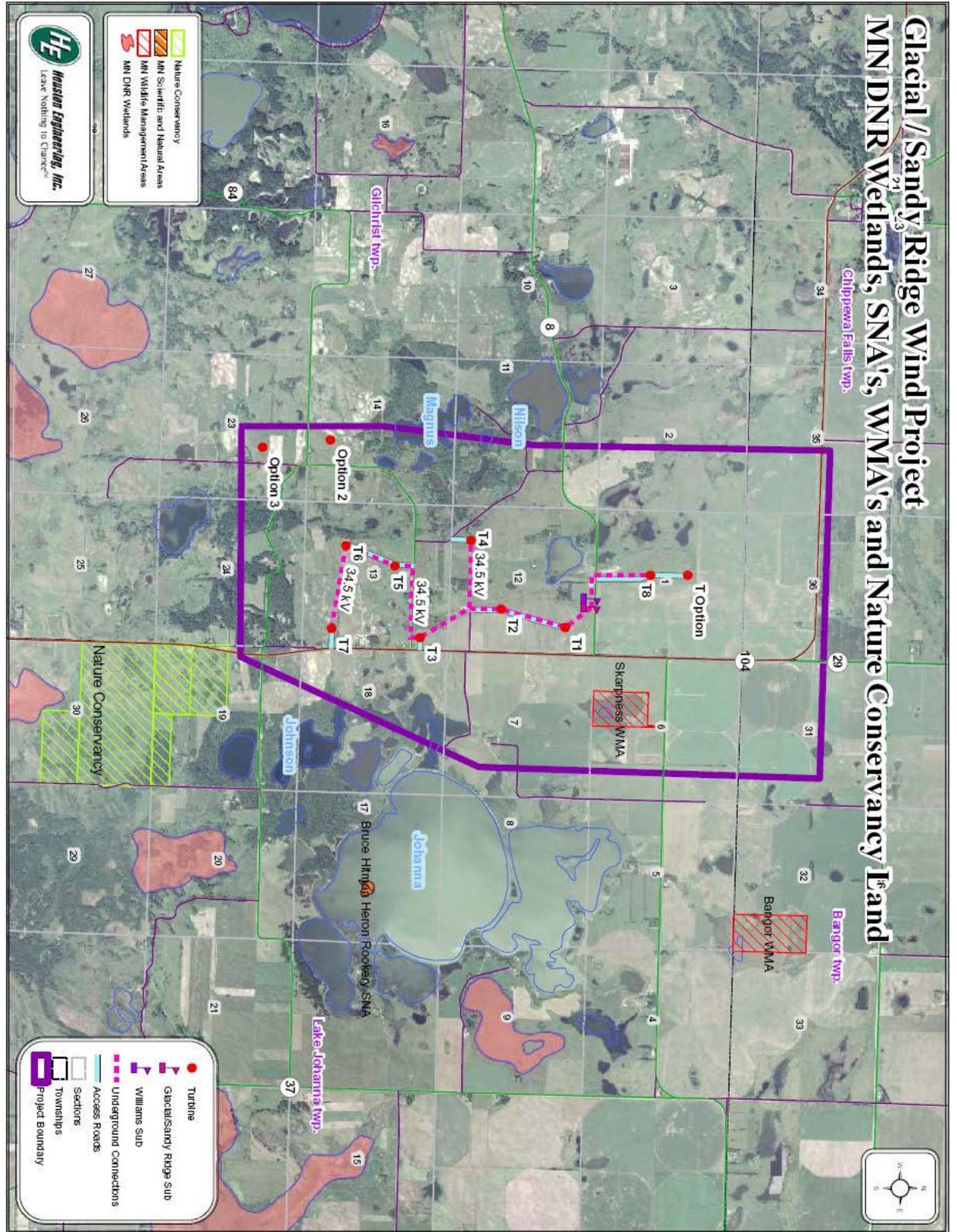
Sometimes it is difficult to define jurisdiction over wetlands as there are at least four county, state and federal entities that oversee various aspects of Minnesota waters. The four entities that the Project has identified as having some type of jurisdiction over wetlands in the Project area are the Pope County Soil and Water Conservation District, the National Resources Conservation Service (NRCS) (who oversees mainly farmland), the MNDNR and the U.S. Army Corps of Engineers.

The National Wetland Inventory Map, Appendix __ depicts wetland classifications by the Cowardin System.. The soil is usually waterlogged early in the spring and covered with six or more inches of water. Vegetation includes grasses, bulrushes, spikerushes, cattails, arrowheads, pickerelweed and smartweeds. This type of wetland protects water quality, shoreland, retains floodwater, provides habitat for waterfowl, amphibians and fish and offers different recreational activities including canoeing, hunting and fishing.

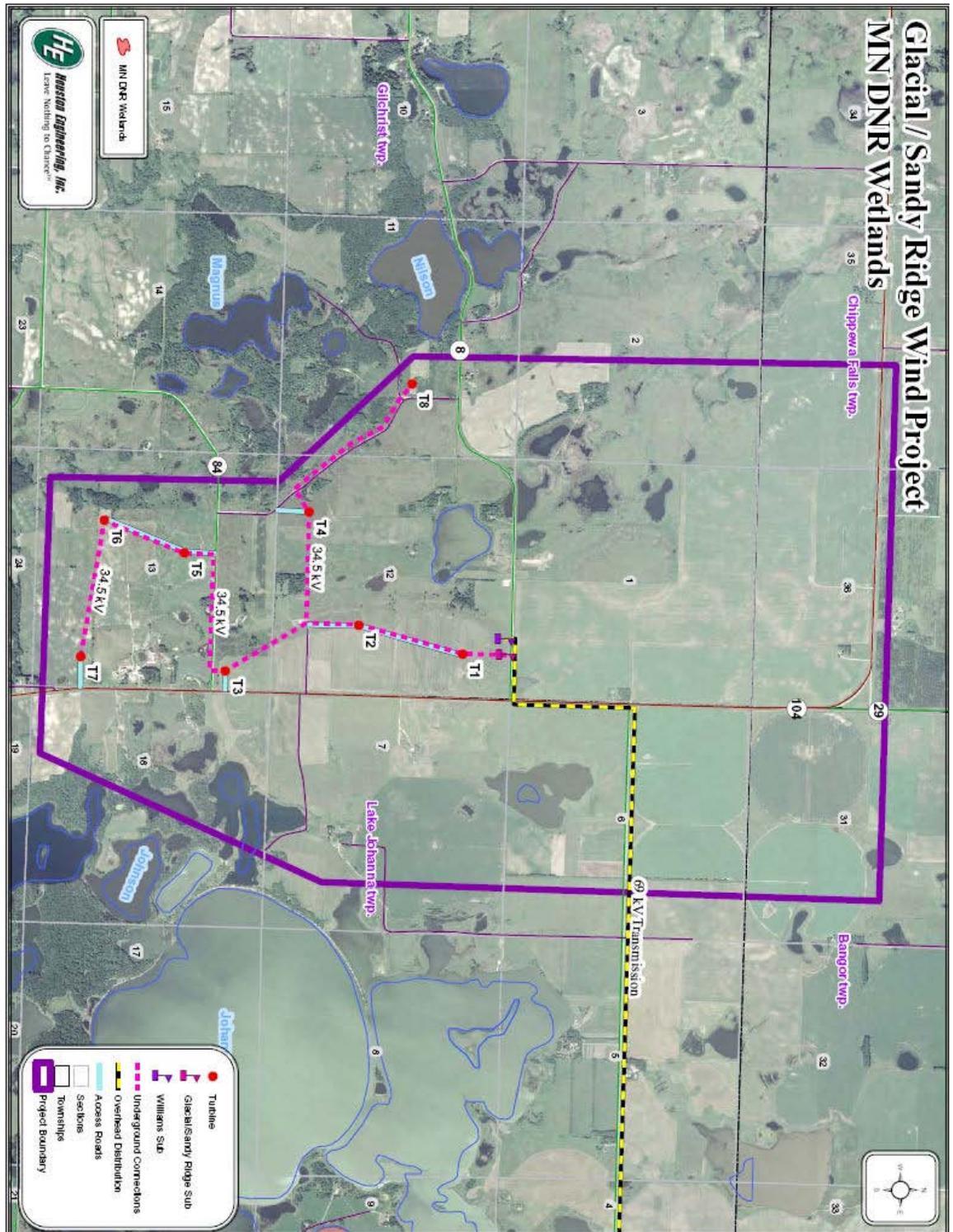
We will be filing a joint application for a General or Letter-of-Permission Permit from the appropriate agencies concerning wetland encroachment. We will be filing a Utility Crossing Permit with the Pope

County Highway Department for permission to construct the overhead collection system across County Road 84. As part of the Utility Crossing Permit application process, we will also address any issues regarding the overhead collection system crossing wetlands or public waters along County Road 84. We will be working closely with the MNDNR and the SWCD to mitigate Project impact to areas that may have wetlands or public waters located on or near the Project, and will be meeting on site with representatives from both of these agencies prior to construction.

Map 5 National Wetlands, SNA,s WMA's-Glacial Ridge Wind Project



Map 6 Minnesota Department of Natural Resources Wetlands



The wetland types and public waters are identified by Township, Range and Section below. This Table is representative of Wetland Types found in the Section depicting construction activity.

Table 3 National Wetland Inventory

County	Township	Section	Cowardin System
Pope	Gilchrist (Turbines, Access Roads, Collector System)	1, 12, 13	P,EM/P,UB/P,SS

County	Township	Section	Cowardin System
Pope	Gilchrist (Sub)	12	L,UB/P,EM/P,FO/P,UB

Description of Classes;

L-Lacustrine-Includes wetlands with the following characteristics; 1) situated in topographic depressions, 2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% coverage, and, 3) total area exceeds 20 acres. This group typically includes permanently flooded areas such as lakes.

P-Palustrine-includes all non tidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses and lichens and all wetlands where salinity is below 0.5%. This group commonly includes; marshes, swamps, bogs, fens and prairies which are found plentiful in Minnesota.

UB/Unconsolidated Shore-includes wetlands having three characteristics; 1) unconsolidated substrates having less than 75% areal cover of stones, boulders or bedrock, 2) less than 30% areal cover of vegetation other than pioneering plants, and, 3) any water regime which is temporarily flooded or saturated. Typically UB is characterized by substrates lacking vegetation except for pioneering plants.

EM/Emergent Wetland-characterized by erect, wooded, herbaceous hydrophytes (or wetland plants) excluding mosses and lichens. Vegetation is usually present for most of the growing season in most years and is mainly dominated by perennial plants.

SS/Scrub Shrub-this area is dominated by woody vegetation less than 20 feet tall. Species include true shrubs, young trees and trees and shrubs that are stunted because of environmental conditions. These types of wetlands may represent a successional stage leading to Forested Wetlands or they may be relatively stable communities and are one of the most widespread classes in the U.S.

FO/Forested Wetlands-are classified by woody vegetation and are associated with an abundance of trees and shrubs which moisture is abundant.

11.8 Mitigation of Impacts-Wind turbines and access roads will be built on a ridgeline that runs from a northeasterly to southwesterly direction. We will avoid constructing our turbines, underground electrical wires and access roads in wetland areas. By building on high ground we will further avoid wetlands located on lower areas of the Project site.

The electrical distribution line through Section 12 and Section 13 will be constructed on private property, except for that portion passing over County Road 84. There are no wetlands where the collector circuit is proposed. We will design the placement of underground circuits and access roads to avoid wetland

areas. We will correspond closely with NRCS, MNDNR, SWCD and other agencies, submit permit applications when necessary, and arrange on site meetings to avoid negative impact in regards to siting turbines and the distribution/collector system. We will also file a form 1026 AD to investigate farm programs and wetlands the NRCS has jurisdiction over.

12 Construction of Project

12.1. Siting Plan

The Project optimizes turbine layout while minimizing agricultural impacts (see Site Layout). Each turbine's rotor is 90 meters tip to tip and the turbine layout will provide for approximately 3,000 feet between turbines in all directions.

The layout does not interfere with the NW to SE prevailing winds and minimizes potential losses of power production. A final layout/as built drawing will be submitted to the DOC/MNPUC once the Project is constructed and has reached commercial operation.

GRE, the turbine supplier and the BoP (Balance of Plant) contractor will perform or manage most construction and installation activities. The Project and the Project developer will perform those construction and installation activities that are not the responsibility of other parties.

Glacial Ridge Wind Project will perform the following:

- Site Resource Analysis and Turbine Micro Siting
- Site Permit/Environmental Reviews
- Apply for and Obtain Project Specific Permits and Licenses

The erector will:

- Assemble and Install the Turbines

The BoP contractor will:

- Perform Civil Engineering Work needed for the Construction of Foundations and Roads
- Install Communications Systems for Operations and Maintenance, as well as Utility Monitoring

Quality control and quality assurance methods will be employed to ensure a safe working environment and high construction standards. These are discussed further in Section 7.

12.2. Operation of Project

The Project expects to be fully operational by December 31, 2008. The operations and maintenance ("O & M") is expected to be performed by the turbine manufacturer's representatives trained on this specific equipment for at least the duration of the warranty period. The Project owners expect to be integrally involved with ongoing operations and maintenance, and to assume O & M responsibilities within the first 11 years of the Project's life. This Project is one of several wind projects currently being developed by some of the owners of the Project. A modest O & M facility is expected to be built at a site centrally located to those developments, possibly in Fergus Fall, MN.

12.3. Costs (Design, Construction and Operations)

Development, turbine supply, construction, interconnection and other ancillary costs for the Project are projected to exceed approximately \$1,775 per kW (including the cost of the overhead transmission/distribution line). The Project schedule is expected to run concurrently with the schedule for the "Bear Creek" wind project (also being developed by PlainStates Energy), as both projects will likely be financed and constructed by the same financiers and contractors.

12.4 Project Schedule and Current Status

- | | |
|---|--------------|
| • Site identification | Complete |
| • Development team identified | Complete |
| • Obtain Right of Way Easement from Pope County and Gilchrist Township for utility crossing, access roads, etc. | Jan/Feb 2008 |
| • Wind resource assessment (WindLogics) | Complete |
| • Installed on site met tower | June 2003 |
| • Local ownership | Complete |

• Land options secured	Complete
• County Resolutions of Support	Complete
• Finance Structure Determined	By Sept 2007
• Identification of equity provider	By Sept 31, 2007
• Permitting requirements identified	Complete
• Solid pro forma developed for the project	Complete
• Construction partners identified	TBD
• Substation is nearly 100% designed	Complete
• Collection system nearly 100% designed	In Process
• Secure Necessary Easements/Permits	Jan/Feb 2008
• Roads designed	Complete
• Turbine identified	Nordex

We think this Project is well positioned for successful implementation and we are confident that all permitting and design activities can be completed by fourth quarter 2007. The Milestone Dates below are contingent upon the Project obtaining a Letter of Intent or similar confirmation that the Project will be able to secure favorable terms from an equity provider.

12.5 Milestone Dates

1. PPA	Complete
2. MISO System Impact Study/Facility Study	SIS Complete
3. Power Purchase Agreement	Aug/Sept 2007
4. State Permitting Application/County/CBED Res of Support State Approval	Complete February 2008
5. Letter of Commitment by Finance	September 2007
6. Interconnection Study Completed	December 2007
7. Site Plan Complete	February 2008
8. Financing Secured and Project Structured	December 2007
9. Interconnection Agreement Executed	January 2008
10. Turbine Purchase Date (Construction Financing)	September 2007
A. Turbine Ship Date set	July/August 2007
B. Towers Ordered	
C. Transformers Ordered	
11. Lease Options converted to Lease Agreements	October/November 2007
12. Utility Crossing Easements for Feeder Circuit (Pope County) Right of Way Easements for Feeder Circuit (Crossing Permits)	Nov/Dec 2007 October 2007
13. Substation Design Complete	June 2007
A. Collection System and Feeder Design Complete	June 2007
B. Substation Equipment Ordered	To Be Determined
C. Conductor Ordered	To Be Determined
14. Begin FAA Permitting Process	September 2007
A. Order FAA Lights	To Be Determined
15. Permitting Complete (excluding FAA)	February 2008
16. Foundations Designed	August 2007
A. Roads Designed	August 2007
17. Prepare Construction Documents	October/November 2007
A. Select Builders	February/March 2008
B. Begin Construction (all Phases) NLT	June/July/August 2008
18. Coordinate Telco Services (Begin)	May 2008
19. Order CT's and PT's (Utility)	May June 2008
20. Coordinate Construction/Utility Metering	May June 2008
21. Tower Delivery to Site NLT	Aug Sept 2008
22. Turbine Delivery to Site NLT	Aug Sept 2008
23. Build Rotors (Begin) NLT	August/September 2008
24. Erect Turbines (Begin) NLT	August/Sept 2008
25. Station Power (Sub/Collection System) NLT	Oct Nov 10, 2008
A. SCADA (by Utility) NLT	Nov 9, 2008
B. Utility Metering NLT	Nov 9, 2008

All dates are subject to revision and dependent upon financing.

12.6 Energy Projections

The Project is projected to have a net capacity factor of 37.5%, and the entire output of the Project will produce approximately 65,700,000 kWhrs per year.

12.7 Decommissioning and Restoration

The Project will lease the land underlying the turbine sites for a 25 year period and will have an option to extend the lease an additional 5 years. The Project plans to enter into a power purchase agreement (“PPA”) with a term of 20 years. Upon expiration of a 20 year PPA, the Project anticipates either restructuring of the original PPA, or electing to sell Project power directly into the MISO grid. Because the Project will have the ability to operate for at least 5 years beyond the term of its PPA, we are requesting that the Project’s site permit provide for the Project to continue to operate for an additional 10 years beyond the term of its PPA. Since the Project infrastructure would already be in place, such as the substation, collection system, foundations and access roads, we feel we may be able to repower the site at minimal cost if the Project and turbine site landowners are in agreement as to the Project’s continued use of the sites. The ability to repower the Project site will add further value to the Project and provide the potential for additional economic benefit to the local owners of the Project beyond the initial term of the PPA.

Current decommissioning costs are estimated at approximately \$50,000 dollars per turbine, in 2008 dollars, for a total of approximately \$400,000 dollars. Scrap value of turbine steel in today’s dollar amounts of over \$200.00 per ton. The Project does not anticipate any difficulties in funding all decommissioning and restoration of the Project site.

- A. **Anticipated Life**
The anticipated life for the project is expected to be 20-30 years.
- B. **Estimated Decommissioning Costs in Current Dollars**
The project estimates the cost of decommissioning will be approximately \$400,000.00 in 2008 dollars.
- C. **Method and Schedule for Updating Decommissioning and Restoration**
Set aside funds in an interest bearing account and utilizing the scrap value of the turbine will be adequate for the removal of the equipment and the restoration of the site.
- D. **Method for Ensuring Available Funds for Decommissioning and Restoration**
Operating reserves will be included with the contingency fund/set asides at a rate of approximately \$5,000 per year per turbine (for years 11-20 of the PPA period) in 2008 dollars placed in an interest bearing account accessible only for decommissioning. The account will be fully funded by year 20 year of the PPA.
- E. **Manner in which the Project will be Decommissioned and the Site Restored.**
Lease extensions for additional years to the lease agreement are included in the leasing arrangements. It is anticipated there will be extensions to the PPA after the 20 year expiration of that contract. At the end of the commercial life of the project, the project will be decommissioned within 18 months of the end of the commercial operations. As per lease option; each turbine will be taken down, foundations removed to a depth of 4 feet, as well as the substation and any buildings and roads built on site, unless other arrangements over the next 20-30 years are made with the landowner. Depending upon agreements with the local landowners at the time of decommissioning, reseeded of disturbed areas is included in the restoration plan.

APPENDIX

RESOLUTION OF SUPPORT FOR A WIND PROJECT
POPE COUNTY, MINNESOTA

WHEREAS, agriculture and energy are a major and an integral part of Pope County's and the State of Minnesota's economic security, and

WHEREAS, the Minnesota State Legislature has directed electric utility's providing service in Minnesota to facilitate locally owned wind energy projects, and

WHEREAS, Pope County recognizes that wind energy projects can and should play a larger role in providing energy through locally generated wind projects, and

WHEREAS, Pope County wind projects will contribute economically to Pope County by way of property tax payments, land lease payments, local ownership and ancillary benefits, and

WHEREAS, localized wind energy projects support economic development, and

WHEREAS, wind energy development within the state lessens the State of Minnesota's dependence on the importation of electricity from North Dakota and Manitoba, and

WHEREAS, wind energy projects mitigate pollution generated by fossil fuel, and

WHEREAS, the mitigation of pollution supports recreational activities such as fishing, hunting and other outdoor activities, therefore

BE IT RESOLVED, that Pope County Board of Commissioners go publicly on record supporting wind projects in Pope County.


Coordinator

11/02/05
Date

APPENDIX B-State and Federal Correspondence

2/27/2007

Tom Cinadr
MN SHPO
MN Historical Society
345 Kellogg Blvd. W.
St. Paul, MN. 55102-1903

Re: Sandy Ridge Wind Project

Dear Mr. Cinadr,

We are requesting a review and scan on significant historical features from your database for an area that a proposed wind project may be constructed. The proposed project area is located in;

Pope County-T123N-R37N.

1. Gilchrist Township, Section 12 (substation),
2. Gilchrist Township, Sections 12, 13 and 14 (turbines).

COUNTY	TOWNSHIP	RANGE	SECTIONS
Pope	T-123-N	R-37-W (GILCHRIST)	1, 11, 12, 13, 14

I have included a site map for your review.

We are not asking for any information you would normally provide the public, rather an indication of the location of historical sites from SHPO scans that would preclude construction of our project.

The map indicates 8 site locations where turbines will be constructed, approximately 400 feet tall which includes the tower height and the rotor in the vertical position. Distances between turbines will be approximately 3,000 feet. The project will be operating 24 hours a day, 7 days a week; the rpm's of the rotor are 17 revolutions per minute. There is an additional turbine location depicted as an option if we need it.

An overhead line will be built from the project constructed substation in Section 12 from CR 8 to CR84, then west ¼ mile. Please see the attached map for the entire route of the proposed overhead line.

Information you or your office provides will help us in determining more specifically the layout of the turbines, roads and underground collections system with the intent on minimizing environmental impacts and will be included in correspondence with the State when filing our permit for this project.

We are hoping that your office can tell us whether or not any historical sites within the confines of the project area listed would have an adverse effect on the project being constructed. Again, we are not requesting, necessarily, the exact location just an indication of whether or not construction of the project would prohibit construction in a general area. Also, recommendations as to whether or not more in depth inventories need to be undertaken by the project, such as Class I, Class II or Class III inventories.

In my last correspondence with you I asked you to include this project in the survey you did for Todd and OtterTail counties, but I am unclear as to whether the letter I received from you addressed this project. I have included that letter along with this one. I don't think there was any feedback for this Pope County project given me.

I appreciate your help on the scan and any direction you can provide.
Thank you,

Sincerely,
John M. Ihle

PlainStates Energy

2/27/2007

Ms. Laurie Fairchild
U.S. Dept of the Interior
Fish and Wildlife Svc.
Twin Cities Field Ofc.
4101 East 80th St.
Mpls., MN 55425-1665
laurie_fairchild@fws.gov
612-725-3548 x 214

Re: Glacial/Sandy Ridge Wind Project

Dear Ms. Fairchild,

We are requesting a review on threatened and endangered species and migratory birds in an area that a proposed wind project may be constructed. The proposed project area is located in;

Pope County, T123N, R37W.

1. Gilchrist Township, Section 12 (substation);
2. Gilchrist Township, Sections 11, 12, 13, 14 (turbines).

I have included a site map for your review.

We are specifically interested in identifying the location of notable scientific wildlife interests, sensitive species habitats, and any other special or sensitive environmental conditions that exist in the proposed project area.

The map indicates 8 site locations where turbines will be constructed, approximately 400 feet tall which includes the tower height and the rotor in the vertical position. Distances between turbines will be approximately 3,000 feet. The project will be operating 24 hours a day, 7 days a week; the rpm's of the rotor are 17 revolutions per minute. Included on the map is one alternate location for a total of nine locations. There are 9 site locations on the map with one being an option in lieu of T8.

An overhead line will be built from the project constructed substation in Section 12, from CR 8 south to CR 84 then west approximately ¼ mile. Please see the attached map for the entire route of the proposed overhead line. The project will file the necessary permit applications with the DNR to cross the state managed waters mentioned above but we do not see any conflict at this time.

Information you or your office provides will help us in determining more specifically the layout of the turbines, roads and underground collections system with the intent on minimizing environmental impacts. Correspondence will be included when we file our Site Permit application with the State.

In addition to information regarding which species are located in the area we would like your office to express concerns and recommendations and actions (under Section 7 of the Endangered Species Act) so we can minimize the project's impact to these species as well as migratory birds.

Thank you,
Sincerely,

John M. Ihle
PlainStates Energy

Kim Kruger
Pope Soil and Water Conservation District
kim.kruger@mn.nacdn.net
320-634-5327

Re: Glacial/Sandy Ridge Wind Project

Dear Mr. Kruger,

We are requesting a review on wetlands and other concerns you may have in an area that a proposed wind project may be constructed, and, if you think it would be beneficial we could meet on site. The proposed project area is located in;

Pope County-T123N-R37W,

1. Gilchrist Township, Section 12 (substation);
2. Gilchrist Township, Sections 11, 12, 13 and 14 (turbines).

I have included a site map for your review.

We are specifically interested in identifying the location of notable wetland interests which may be sensitive to our project, and any other special environmental conditions that exist in the proposed project area, and guidance from your agency to help us through this process.

The map indicates 8 site locations where turbines will be constructed, approximately 400 feet tall which includes the tower height and the rotor in the vertical position plus an optional site location if needed. Distances between turbines will be approximately 3,000 feet. The project will be operating 24 hours a day, 7 days a week; the rpm's of the rotor are 17 revolutions per minute.

An overhead line will be built from the project constructed substation in, Section 12, CR 84, through lease optioned land south to CR 8, then west approximately ¼ mile. Turbine feeds will tap off this line. Please see the attached map for the route of the proposed lines and placement of the turbines. We do not anticipate crossing any State, Local or Federal managed wildlife or wetland areas.

Information you or your office provides will help us in determining more specifically the layout of the turbines, roads and underground collections system with the intent on minimizing environmental impacts.

In addition to information regarding which species are located in the area we would like your office to let us know concerns, recommendations and actions so we can minimize the project's impact to these wetlands, and for you to outline permits or paperwork we may need to establish for a "paper trail" concerning our project.

We have written similar letters to the U.S. Fish & Wildlife, MNDNR, U.S. Corps of Engineers and other agencies with the intention to minimize problems due to constructing, operating and maintaining our project. We will be including correspondence in our State Permit we will be applying for with the intent of constructing the project in 3rd quarter 2008.

Again, I would be available to meet on site if needed.

Thank you,

Sincerely,

John M. Ihle
PlainStates Energy

1/16/2007

Sarah Wren
MNDNR,
Environmental Review
500 Lafayette Rd.
St. Paul , MN 55155-4040

Re: Glacial Ridge Wind Project

Dear Ms. Wren,

We are requesting a review for assistance in identifying sites and environmental properties in an area that a proposed wind project may be constructed and have included a Data Request Form with this letter (NHIS). The proposed project area is located in;

Pope County-T123N-R37N

1. Gilchrist Township, Section 12 (substation),
2. Gilchrist Township, Sections 11, 12, 13, 14, (turbines).

I have included a site map for your review.

We are specifically interested in identifying the location of notable scientific wildlife interests, sensitive species habitats, and any other special or sensitive environmental conditions that exist in the proposed project area.

The map indicates 8 site locations where turbines will be constructed, approximately 400 feet tall which includes the tower height and the rotor in the vertical position. Distances between turbines will be approximately 3,000 feet. The project will be operating 24 hours a day, 7 days a week; the rpm's of the rotor are 17 revolutions per minute. The map depicts one additional site location designated as an option in the event one of the turbine locations does not work out.

An overhead line will be built from the project constructed substation in Gilchrist Township, Section 12, south through project leased property from CR 8 to CR 84, then west approximately $\frac{1}{4}$ mile. The total length of this overhead construction will be 1.5 miles. Please see the attached map for the entire route of the proposed overhead line. The project will not be crossing any public waters, wetlands or management areas under the auspices of State, Federal or Local wildlife agencies.

Information you or your office provides will help us in determining more specifically the layout of the turbines, roads and underground collections system with the intent on minimizing environmental impacts. Correspondence will be included in a State Permit the project is applying for.

Thank you,

Sincerely,

John M. Ihle

PlainStates Energy

2/27/2007
Paul Stolen, Program Coordinator
MNDNR,
Environmental Review
2115 Birchmont Beach Rd., NE
Bemidji, MN 56601

Re: Sandy Ridge Wind Project

Dear Mr. Stolen,

We are requesting the coordination and review for assistance concerning the identification of potential conflicts relative to wildlife, plants and other environmental aspects which may be impacted in an area that a proposed wind project may be constructed. The proposed project area is located in;

Pope County-T123N-R37W.

1. Gilchrist Township, Section 12 (substation),
2. Gilchrist Township (turbines), Sections 1, 11, 12, 13, 14.

I have included a site map for your review.

We are specifically interested in mitigating problems which may arise from the location of our substation, the overhead collection system and turbine locations. There are 8 turbine locations, with one option, depicted on the map. Turbines 1 through 8 are the preferred locations and may not be the exact location, which may change by as much as 300 feet. Turbine 9 is shown as an option in the event that one of the other turbine locations will not work.

The turbines are approximately 400 feet tall which includes the tower height and the rotor in the vertical position. Distances between turbines will be approximately 3,000 feet. The project will be operating 24 hours a day, 7 days a week; the rpm's of the rotor are 17 revolutions per minute.

An overhead line will be built from the project constructed substation in Gilchrist Township, Section 12 from CR 84 proceeding south through the project site to CR 8 then west approximately 1/4 mile. Please see the attached map for the route of the proposed overhead and underground lines. We intend to tap off this line and go underground to turbine locations. I do not think the project will conflict with wildlife areas or other State managed areas concerning wildlife or wetlands, nor will the project cross any public waters.

Information you or your office provides will help us in determining more specifically the layout of the turbines, roads and underground collections system with the intent on minimizing environmental impacts. Correspondence will be included in a State Permit the project is applying for.

Thank you,

Sincerely,

John M. Ihle

PlainStates Energy



Minnesota Department of Natural Resources

Natural Heritage and Nongame Research Program, Box 25

500 Lafayette Road

St. Paul, Minnesota 55155-4025

Phone: (651) 259-5109 Fax: (651) 296-1811 E-mail: lisa.joyal@dnr.state.mn.us

May 4, 2007

Mr. John Ihle
PlainStates Energy
27451 South Highway 34
Barnesville, MN 56514

Re: Request for Natural Heritage information for vicinity of proposed Sandy Ridge Wind Project,
T123N R37W Sections 12 & 13 and T123N R36W Sections 7 & 18, Pope County
NHNRP Contact #: ERDB 20070700-0002

Dear Mr. Ihle,

The Minnesota Natural Heritage database has been reviewed to determine if any rare plant or animal species or other significant natural features are known to occur within an approximate one-mile radius of the area indicated on the map enclosed with your information request. Based on this review, there are 14 known occurrences of rare species or native plant communities in the area searched (for details, please see the enclosed database printouts and the explanation of selected fields). Following are specific comments for **only those elements that may be impacted** by the proposed project. Rare feature occurrences not listed below are not anticipated to be affected by the proposed project.

- Several native prairie remnants have been documented in the southwest quarter of Section 13 in T123N R37W (please see the enclosed map). In the mid-1800s, eighteen million acres of prairie covered Minnesota. Given that more than 99% of this prairie habitat has been destroyed and more than one-third of Minnesota's endangered, threatened, and special concern species are now dependent on the remaining small fragments of Minnesota's prairie ecosystem, we feel that all prairie remnants merit protection. In addition, there is some evidence to suggest that grassland birds are deterred from nesting in otherwise appropriate habitat by the presence of tall structures in the vicinity. As such, we recommend that wind turbines not be placed on or within at least $\frac{1}{4}$ mile, and preferably $\frac{1}{2}$ mile, of prairie remnants. In choosing a route for the transmission line, we also recommend that you avoid native prairie remnants.
- The Minnesota County Biological Survey (MCBS) has identified several "Sites of Biodiversity Significance" to the west and the south of the proposed project area. "Sites of Biodiversity Significance" are areas with varying levels of native biodiversity that may contain high quality native plant communities, rare plants, rare animals, and/or animal aggregations. (GIS shapefiles of MCBS Sites of Biodiversity Significance and MCBS Native Plant Communities can be downloaded from the DNR's Data Deli website at <http://deli.dnr.state.mn.us/>.) These particular sites contain several native prairies including The Nature Conservancy's Ordway Prairie Preserve (Please contact TNC at 320-243-7422 to determine if there are any concerns from TNC's perspective). As mentioned above, less than one percent of prairie habitat remains in Minnesota. Many grassland bird species that depend on these remaining prairies are declining in number nationwide. Lake Johanna to the east is also an important staging area for migrating birds. Given the wind project's proximity to these ecologically significant sites and the potential for wind turbines to cause avian mortality, we strongly encourage pre- and post-construction avian

monitoring. Any cumulative impact assessment should also address the issue of avian mortality.

- Please note that the Skarpness Wildlife Management Area (WMA) is located in T123N R36W Section 6 northeast of the project area. Shapefiles of the WMA boundaries can be downloaded from the DNR's Data Deli website at <http://deli.dnr.state.mn.us/index.html>. Please contact the Area Wildlife Manager, Kevin Kotts at 320-634-0342 to discuss any concerns he may have about turbines being sited near the WMA.

The Natural Heritage database is maintained by the Natural Heritage and Nongame Research Program, a unit within the Division of Ecological Services, Department of Natural Resources. It is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. Its purpose is to foster better understanding and protection of these features.

Because our information is not based on a comprehensive inventory, there may be rare or otherwise significant natural features in the state that are not represented in the database. A county-by-county survey of rare natural features is now underway, and has been completed for Pope County. Our information about native plant communities is, therefore, quite thorough for that county. However, because survey work for rare plants and animals is less exhaustive, and because there has not been an on-site survey of all areas of the county, ecologically significant features for which we have no records may exist on the project area.

The enclosed results of the database search are provided in two formats: short record report and long record report. To control the release of locational information, which might result in the damage or destruction of a rare element, both printout formats are copyrighted.

The short record report provides rare feature locations only to the nearest section, and may be reprinted, unaltered, in an Environmental Assessment Worksheet, municipal natural resource plan, or report compiled by your company for the project listed above. If you wish to reproduce the short record report for any other purpose, please contact me to request written permission. **The long record report includes more detailed locational information, and is for your personal use only. If you wish to reprint the long record report for any purpose, please contact me to request written permission.**

Please be aware that review by the Natural Heritage and Nongame Research Program focuses only on *rare natural features*. It does not constitute review or approval by the Department of Natural Resources as a whole. If you require further information on the environmental review process for other natural resource-related issues, you may contact your Regional Environmental Assessment Ecologist, Paul Stolen, at (218) 755-4068.

An invoice in the amount of \$90.42 will be mailed to you under separate cover within two weeks of the date of this letter. You are being billed for map and database search and staff scientist review. Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

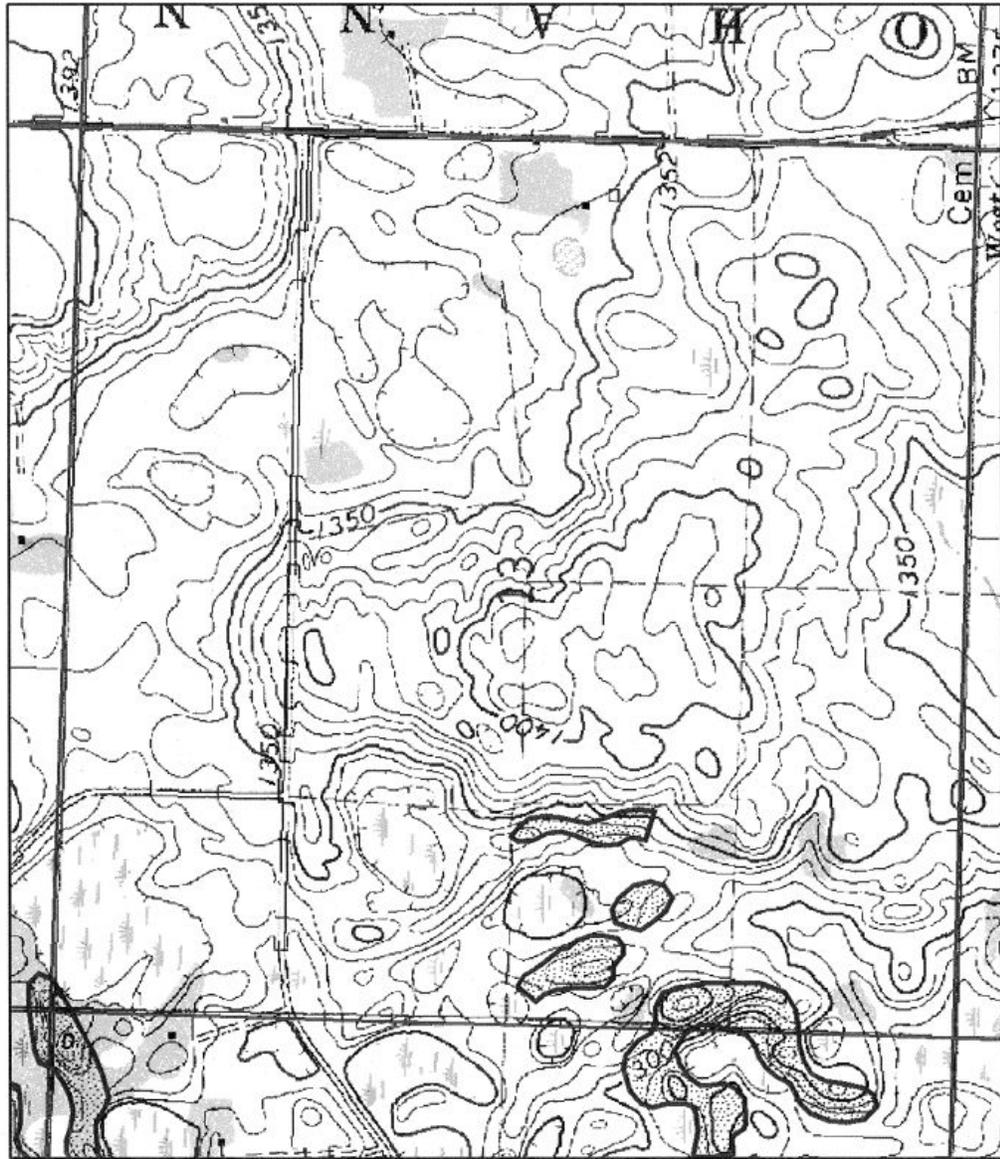


Lisa Joyal
Endangered Species Environmental Review Coordinator

encl: Database search results
Rare Feature Database Print-Outs: An Explanation of Fields
Map

cc: Paul Stolen

**Sandy Ridge Wind Project
T123N R37W Sections 12 & 13 and T123N R36W Sections 7 & 18
Pope County**



Legend

-  Native Plant Communities
-  PLS Sections

Copyright 2007, State of Minnesota, DNR
Rare Feature, Prairie Railroad Survey, Native Plant Community,
and Sites of Biodiversity Significance data are from the
Natural Heritage and Nongame Research Program's (NH-NRP)
Natural Heritage Information System. The absence of rare features
for a particular location should not be construed to mean that the
NH-NRP is confident rare features are absent from that location.



2/27/2007

U.S. Army Corps of Engineers
Attention: OP-R
10867 East Gull Lake Drive NW
Brainerd, MN. 56401

Re: Sandy Ridge Wind Project

Dear Sir,

We are requesting a review on assistance in reviewing and identifying environmental properties, concerns or issues that would influence a decision regarding the use of land for a proposed wind project may be constructed.

The proposed project area is located in; Pope County-T123N-R37W.

1. Gilchrist Township, Section 12 (substation),
2. Gilchrist Township, Sections 11, 12, 13 and 14 (turbines).

I have included a site map for your review.

The map indicates 8 site locations where turbines will be constructed, approximately 400 feet tall which includes the tower height and the rotor in the vertical position. Distances between turbines will be approximately 3,000 feet. The project will be operating 24 hours a day, 7 days a week; the rpm's of the rotor are 17 revolutions per minute. An additional site location is depicted as an option (T9).

An overhead line will be built from the project constructed substation in Gilchrist Township, Section 12, from CR 8 to CR 84 then west ¼ mile. Please see the attached map for the entire route of the proposed overhead line. We do not anticipate that there are any areas that will conflict with State, Local or Federally managed areas, especially those concerning waterways or floodplains.

We will use the information your provide as a step in identifying and determining more specifically the layout and areas to avoid that would be sensitive to development/construction activities for this project with the intent on minimizing environmental impacts. We have sent similar letters to the MNDNR, U.S. Fish & Wildlife and SHPO and will include all the correspondence in our State Site Permit we will be applying for.

If you or your office can, we would appreciate a scan of the parcels listed above to facilitate our review process and give us a list of concerns and/or recommendations.

Thank you,

Sincerely,
John M. Ihle
PlainStates Energy
Representing



NORDEX N90/2500 LS

NORDEX N90/2500 HS

Technical Description

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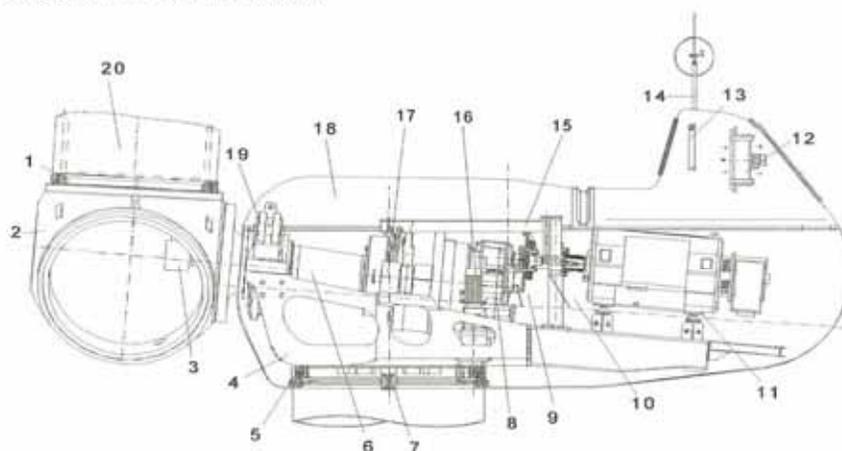
1 Design

The NORDEX N90/2500 is a speed-variable wind turbine with a rotor diameter of 90 m and a nominal power of 2,500 kW. It is offered in several variants for different site conditions, 50 Hz and 60 Hz and also LS and HS (low speed, high speed). The nacelle and rotor are designed for wind class 1. To regulate power the blades can be pitched individually.

This machine is based on the well proven turbine family NORDEX N80.

NORDEX is certified according to ISO 9001 quality standards. Our quality control system and thus also the production processes fulfil the requirements of ISO 9001. For all main components NORDEX co-operates with a number of qualified suppliers.

Nacelle overview NORDEX N90/2500



1 Pitch bearing	6 Rotor shaft	11 Generator	16 Yaw drive
2 Rotor hub	7 Yaw brakes	12 Generator cooler	17 Gearbox mounting
3 Pitch drive	8 Gearbox	13 Gearbox cooler	18 Nacelle cover
4 Nacelle frame	9 Emergency brake	14 Wind sensors	19 Main bearing
5 Yaw bearing	10 Generator coupling	15 Hoist	20 Rotor blade

General Data	
Type	3-blade rotor with horizontal axis, up-wind pitch
Power regulation	
Rated power	2,500 kW
Start wind speed	approx. 3 m/s
Wind speed for rated power	LS: approx. 14 m/s HS: approx. 13 m/s
Stopping wind speed	25 m/s
Calculated lifetime	20 years

Climatic Design Conditions	
Nacelle and rotor certified acc. to	LS: DIBt 3, IEC 2a HS: IEC 1b
Ambient temperature range	-20...+30 °C
Option for hot climate version (HCV)	-20...+40 °C

2 Rotor

The rotor consists of three blades, the hub, the pitch bearings and drives to change the pitch angle of the blades. The rotor blades are made of glass fibre-reinforced plastic. Each rotor blade is controlled and driven independently of the other blades. The blades are equipped with a lightning protection system including lightning receptors deflecting the lightning into the rotor hub.

Rotor main data	
Rotor diameter	90 m
Swept area	6,362 m ²
Maximum tip speed	LS: approx. 70 m/s HS: approx. 75 m/s
Specific power	393 W/m ²
Rotor speed N90/2500 LS	9.6...14.85 rpm
Rotor speed N90/2500 HS	9.6...16.00 rpm
Rotor tilt angle	5°
Blade cone angle	2°
Total weight	approx. 55 t

Rotor hub	
Material	spheroidal graphite cast iron EN-GJS-400-18U-LT
Total weight, incl. pitch system	approx. 25 t

Rotor blades	
Material	glass fibre-reinforced plastic
Total length	43.8 m
Weight per blade	approx. 10.2 t

3 Rotor shaft

The drive train consists of the rotor shaft, the gearbox connected by a shrink-fit coupling, a coupling with overload protection and the generator.

Rotor shaft	
Material	42CrMo4 or 34CrNiMo6
Weight	approx. 11.8 t
Bearing	self-aligning roller bearing
Bearing housing	spheroidal graphite cast iron EN-GJS-400-18U-LT

4 Gearbox

The gearbox is designed as a two-stage planetary and one-stage spur gear. Alternatively a linkage with power split is also possible. The gearbox is cooled through an oil-air cooling circuit with stepped cooling capacity. The bearings and tooth engagements are constantly pump-fed lubricated with cooled oil. The temperatures of the bearings and the oil are constantly monitored.

Gearbox	
Type	multi-stage planetary + one-stage spur gear
Nominal power	2,775 kW
Gear ratio	N90/2500 LS 50 Hz: 1 : 77.44 60 Hz: 1 : 92.93
Gear ratio	N90/2500 HS 50 Hz: 1 : 71.88 60 Hz: 1 : 86.25
Lubrication	pump-fed lubricated
Oil quantity	approx. 360 l
Oil type	VG 320
Oil change	check at every maintenance, change as required
Weight	approx. 18.5 t

5 Generator

The generator is a double-fed asynchronous machine. The generator is kept in its optimum temperature range by a water cooling circuit.

Generator	
Type of enclosure	IP 54
Nominal power	2,500 kW
Nominal voltage	660 V
Frequency	50 or 60 Hz
Speed	740...1,310 rpm
Poles	6
Weight	approx. 12 t

6 Cooling and filtration

The gearbox, generator and inverter of N90/2500 have active cooling systems which are independent from each other. All systems are designed so that also at high ambient temperatures, optimal operating temperatures are achieved. The temperature of some gearbox bearings, the gearbox oil, the generator windings, the generator bearings and the cooling liquid (frostproof water/glycol mixture) are monitored constantly and partially redundantly by the control system.

Gearbox cooling

The gearbox is cooled by the oil circuit in an oil/air heat exchanger. A pump with 2 stages pushes the warm gearbox oil through a combined filter (coarse filter 50 μm , fine-mesh filter 10 μm) into the cooling circuit. The coarse and fine-mesh filters filter impurities out of the oil. Optionally, an additional bypass filtration can be installed (super fine-mesh filter 5 μm).

When the oil does not reach the optimal operating temperature a thermal choke shorts the circuit and conducts the cold oil back to the gearbox. As soon as the optimal operating temperature is exceeded, the active oil/air heat exchanger starts and cools down the oil.

The cooled oil is pumped via a pipe system inside the gearbox to the thermally high loaded parts.

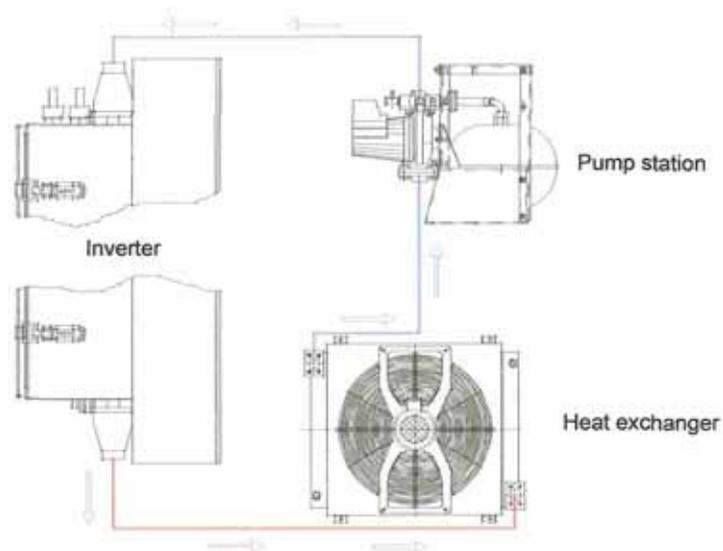
Generator cooling

The heat is led off the generator by a cooling water circuit. The heat is dissipated via an internal air cooling to the cooling water. This is conducted by a maintenance-free rotary pump to an active water/air heat exchanger. The pump starts automatically as soon as the temperature exceeds a defined value and cools down the cooling water and thusly keeps the generator on the optimal operating temperature.

Inverter cooling

The main inverter is integrated in the cabinet on the lowest platform of the tower. It is cooled by cooling water. The cooling water is pumped through the cooling system of the main inverter to an

active water/air heat exchanger. The pump is switched on when the temperature exceeds a defined value. The warmth is dissipated outside.



7 Braking system

The aerodynamic brake is made up by the rotor blades which are controlled independently and which can be swivelled 90° around their own axis. To protect the turbine, a safety system is installed. A back-up system is available for the blade control: In case of unwanted voltage drop of power supply, energy storage devices in the pitch are activated automatically to swivel the blades perpendicular to the direction of rotation.

In addition to the blade pitch control, the NORDEX N90/2500 is equipped with a hydraulical disc brake system. The brake supports the braking by the rotor blades and brings the rotor to a halt. The brake power is controlled by several brake programs to avoid load peaks. After the rotor has come to complete stop, the brake can be fixed.

Aerodynamic Brake	
Type	individual blade pitch
Activation	electrical

Mechanical Brake	
Type	active disc brake
Location	on the high-speed shaft
Disc diameter	1,030 mm
Number of brake callipers	1
Material of brake pads	sintered metal

8 Hydraulic system

The hydraulic system provides the oil pressure for operation of the yaw brakes and rotor brake. The rotor brake and the hydraulic rotor lock are lifted or closed manually.

Hydraulic system	
Hydraulic oil	VG 32
Oil quantity	approx. 20 l
maximum operation pressure	185 bar
Nominal power of the hydraulic pump	1.1 kW

9 Nacelle

The nacelle consists of the cast main frame, the welded generator support and the nacelle cover. The nacelle cover is made of glass fibre-reinforced plastic (GRP). By the shape of the nacelle and the cooler being placed in the top section the natural air flow is exploited for cooling.

Nacelle	
Type of nacelle frame	cast construction
Material	cast iron GGG EN-GJS-400-18U-LT
Type of nacelle cover	shell construction on welded frame
Material	glass fibre-reinforced plastic (GRP)/S235JR

10 Crane systems

Inside the nacelle a service crane is installed, which can be used for lifting tools and other materials. Two other and more powerful crane systems are available as an option. With option 1 the PowerCrane can be installed which can lift all components.

Standard equipment	pillar slewing crane
Allowed load	250 kg
Option 1	slewing crane with adjustable telescope extension arm and electrical chain
Allowed load	1000 kg
Option 2 (only with option 1)	PowerCrane, hydraulically heavy-load crane
Allowed load	13.000/25.000 kg

11 Yaw system

The wind direction is continuously monitored by two devices at hub height. When the wind direction changes, the nacelle is yawed actively. Yawing is done by two gear motors operating on the geared yaw ring. When there is no yaw operation, the yaw brakes are activated. The yaw brakes are located at two different positions, first on the circumference of the yaw ring (hydraulically) and second on the high-speed shaft of the yaw gears (electrically).

Yaw bearing	
Type	ball bearing
Material	42CrMo4
Weight	approx. 2.3 t

Yaw drive	
Motor	asynchronous motor
Gear	4-stage planetary gear
Number of drives	2
Lubrication	oil, ISO VG 620
Yaw rate	approx. 0.5 °/s

Yaw brake	
1 st Type	hydraulic disc brake
Material of brake pads	organic
Number of brake callipers	10 or 14
2 nd Type	Electric spring brake at yaw drive

12 Tower and foundation

The NORDEX N90/2500 is erected on a tubular tower for different hub heights and wind classes.

Hub height	80 m (MT)	80 m (MT)	100 m (MT)
Classes	LS: IEC 2a (GL 2a) LS: DIBt 3	HS: IEC 1b	LS: DIBt 2 LS: IEC 3a
Number of tower segments	4	4	6
Weight with built-in equipment [t], approx.	172.8	194.4	318.6

The ladder, climbing safety, resting and working landings are located inside the tower. A service-lift can be supplied as an option.

Corrosion protection of the tubular tower is achieved by an epoxy coating of the tower surface according to ISO 12944.

The foundation depends on the ground conditions at the intended site.

Tower	
Material	S355
Corrosion protection	multi-layer epoxy coating
Tower-to-base connection	flange and bolts cast in concrete

13 Grid connection

Network connection of the turbine is through an IGBT converter based on the principle of the asynchronous generator. The power-factor correction can be adjusted to a value of 0.9 inductive to 0.95 capacitive at the IGBT converter. With this system, the starting current ratio can be limited to a value of about 1.

The turbine can be equipped with an extended grid connection package (see also *Electrical Properties*).

14 Controller and safety system

The wind turbine is controlled by the software *Nordex Control 2*, which analyses the data from the connected sensors and generates the control signals for the wind turbine.

The wind turbine runs with two devices for measuring wind data. One anemometer is used for controlling the turbine; the second anemometer monitors the first one. If one device fails, the second is used for control.

On a control screen at any PC, all operational data can be monitored and checked and a number of functions, such as starting, stopping and yawing can be controlled.

In addition, the turbine is equipped with a remote monitoring system (see also *SCADA*). The data and signal transfer only requires an ISDN-connection and an internet browser.

The turbine control is equipped with an uninterruptible power supply system (UPS). In case of a grid drop, the UPS together with the battery of the pitch system ensure a safe shut down of the turbine. The UPS ensures the operation of controller, hydraulic valves, SCADA-server and Ethernet until the turbine is shut down (minimum 10 minutes). This guarantees the continuous monitoring of the turbine's status and further data of the controller can be downloaded for later analysis until the turbine is shut down.

Controller		
Type	Hardware	remote Field Controller/SPS
	Software	Nordex Control 2
Automatic restart:		
– After grid drop		yes
– After cut-out wind		yes

15 Lightning protection

During the development of the NORDEX N90/2500, the utmost attention has been devoted to lightning protection. For all components, a most reliable protection has been achieved. The lightning and overvoltage protection of the wind turbine is based on the lightning protection zone concept and is according to IEC 61024 and DIN VDE 0185. A detailed description can be found in the document *Lightning and overvoltage protection*.

16 Operation control

The main task of the operational control (computer + software NC 2) is to ensure an automatic and safe operation of the turbine in all situations by monitoring and constantly keeping the parameters within the set range as stored in the control computer of the turbine. The parameters are provided by Nordex and are adapted to the respective site. The objective is a safe and automatic operation of the turbine in all situations.

When the wind speed is lower than the cut-in wind speed, the turbine keeps in stand-by (energy save modus), i.e. only the computer is working and collects data. All further systems are switched on only if required and do not need any power. Exceptions are the safety related functions, e.g. the brake system (hydraulic pump). The rotor is idling.

When the cut-in wind speed is reached, the turbine will change to the mode 'ready for operation'. Now all systems are tested and the nacelle aligns to the wind direction. If the wind increases, the rotor accelerates. When a certain speed is reached, the generator is connected to the grid and the turbine starts producing electricity. During operation, the nacelle follows the wind direction. The nacelle is capable of turning 360° several times. But if a set-value is exceeded the turbine shuts down and the nacelle turns back automatically. Afterwards the WTG starts again.

Once the cut-out wind speed is exceeded, the turbine shuts down, i.e. the blades turn by 90° in wind direction. The rotor slows down and idles until the wind decreases below a safe cut-in wind speed.

Sensors are mounted onto all systems and many components of the turbine. They report the current state to the control unit. There are set-values (parameters) given for each measuring location. These must be kept. If one set-value is exceeded, the control unit reacts respectively.

When exceeding a certain set temperature, at first e.g. the pump of the cooling circuit is switched on. If the temperature falls below the set-value again, the pump is switched off. If another certain value is exceeded, a warning message is sent to the remote control centre of NORDEX. The remote control centre is online 24 h a day, 7 days a week and they can decide what to do by processing all current data of the turbine. If the temperature falls again below a certain value, the warning message disappears. When exceeding a third certain temperature value, the turbine is switched off immediately. This third value is selected to prevent any damage to the turbine.

All in all, six parameters belong to this single measuring location, three high and three low temperature limiting values.

When exceeding certain parameters regarding the safe operation, the turbine is switched off immediately, e.g. excess of the cut-out wind speed or pressure decline at the hydraulic system. Disturbances from outside cause a soft braking procedure, e.g. too high wind speed or grid failure. Safety relevant disturbances cause emergency-stops to ensure that the rotor slows down as fast as possible.

For safety reasons after every shut down, a certain delay must be kept after every shut down before the turbine starts again.

17 General reservations

Deviation from the conditions specified above may have an adverse impact on the operation of the wind turbine. In particular, a performance reduction may occur.

At very low temperatures, after e.g. a grid failure, some time for preheating some components of the wind turbine should be allowed before starting again.

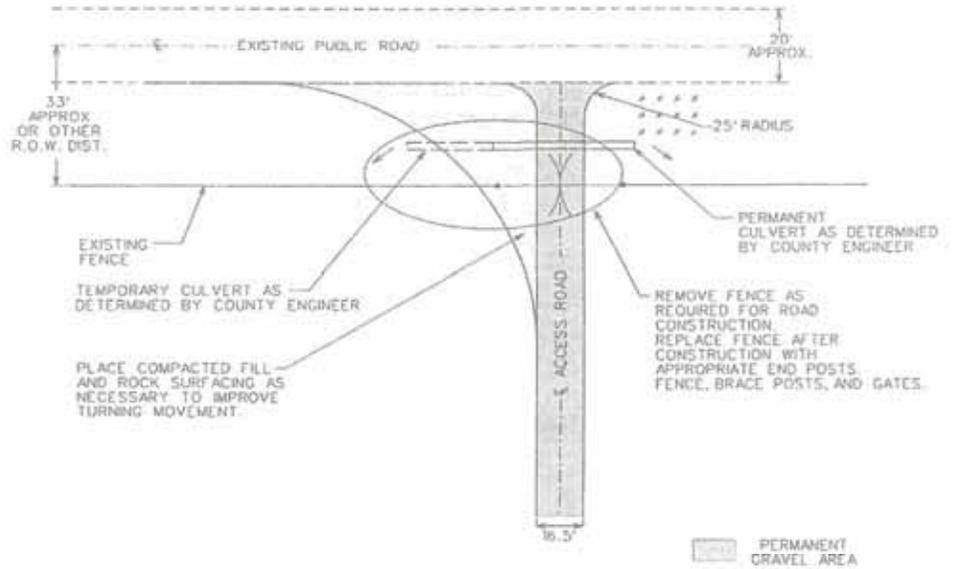
Should icing occur on the rotor blades, the wind turbine must be stopped. An ice warning system can be delivered as an option.

The transformer is usually installed in a separate transformer station. As an option, the transformer can be installed inside the tower.

As a further option, Nordex offers a Condition Monitoring System.

In connection with the continuous development and improvement of our products, we reserve the right to make technical changes without prior notice.

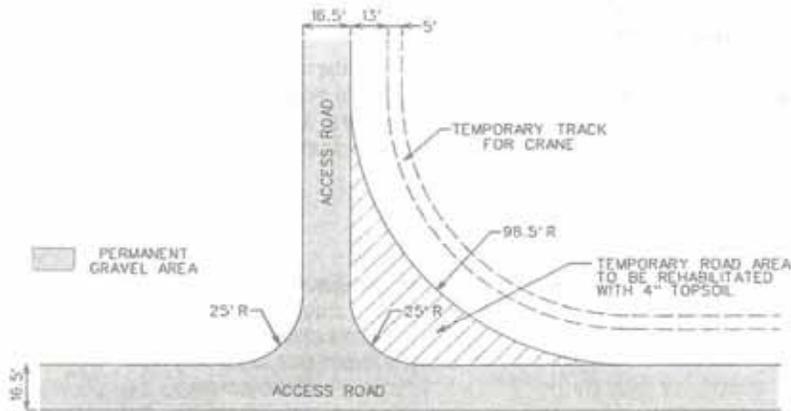
**APPENDIX E.1
Access Roads**



- NOTES:
 1. ENTRANCE AT PUBLIC ROAD RIGHT, LEFT IS REVERSE PLAN OF THIS DETAIL.
 2. REMOVE TEMPORARY SURFACING AND FILL AFTER CONSTRUCTION, RESTORE AND RESEED AREAS DISTURBED BY CONSTRUCTION. COORDINATE WITH APPROPRIATE COUNTY PERSONNEL.

ACCESS ROAD ENTRANCE DETAIL

NO SCALE



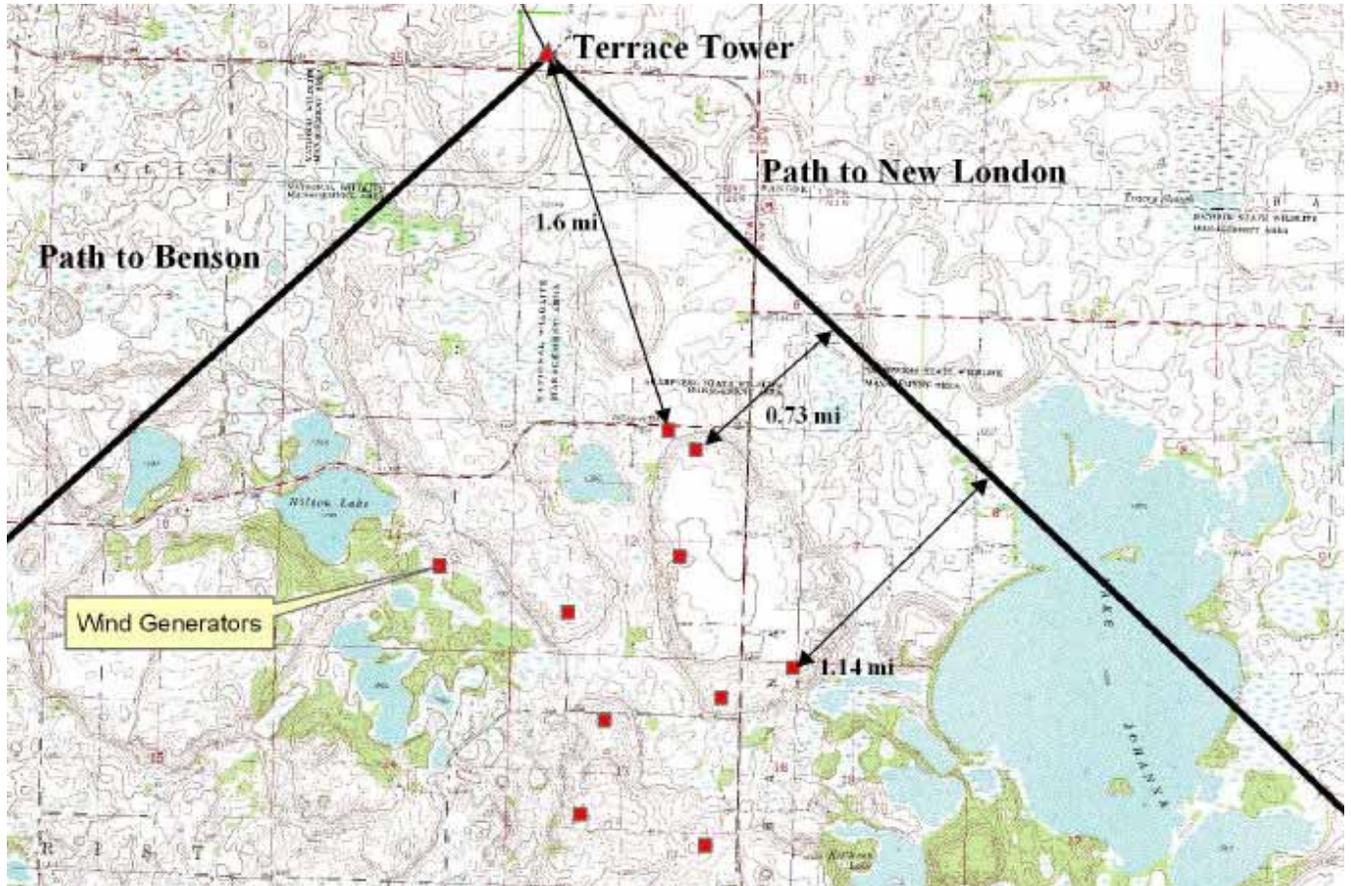
TYPICAL ACCESS ROAD INTERSECTION

NO SCALE

ACCESS ROAD NOTES:

1. ROAD COMPACTION SHALL MEET OR EXCEED 95% OF SPECIFIC MATERIALS MAXIMUM STANDARD PROCTOR (ASTM D698) DRY DENSITY.
2. TEST COMPACTION OF ROAD SUBGRADE EVERY 500' MAXIMUM, WITH A MINIMUM OF 2 TESTS PER ROAD.
3. DURING CONSTRUCTION CONTRACTOR WILL BE RESPONSIBLE FOR ANY GRADING, CLEARING, AND MAINTENANCE OF ACCESS ROADS TO FACILITATE INSTALLATION.
4. CONTRACTOR SHALL REESTABLISH THE TEMPORARY AREAS TO THEIR PRIOR CONDITION INCLUDING THE NECESSARY DE-COMPACTION OF SOILS (WITH A CHISEL PLOW, V-RIPPER, OR EQUIVALENT TYPE EQUIPMENT) AND RE-VEGETATION OF DISTURBED AREAS.

APPENDIX F-MNDoT Microwave Beampath at Glacial Ridge Wind Project



**A WHITE PAPER ON
ELECTRIC AND MAGNETIC FIELD (EMF)
POLICY AND MITIGATION OPTIONS**

PREPARED BY

**THE MINNESOTA STATE
INTERAGENCY WORKING GROUP
ON EMF ISSUES**

SEPTEMBER 2002

EXECUTIVE SUMMARY

Over the last two decades concern about the health effects of electric and magnetic fields (EMF) has increased. Early scientific studies reported a weak association between increased rates of cancer and closeness to certain kinds of power lines that can cause strong electric and magnetic fields. As more electric facilities are built to meet growing demands for electricity, policy makers will increasingly be faced with questions regarding the potential health impacts of EMF. This report is the result of an interagency work group that was formed to examine these issues and provide useful, science-based information to policy makers in Minnesota.

Electric and magnetic fields are a basic force of nature generated by electricity from both natural and human sources. Exposure to EMF comes from high voltage transmission lines and distribution lines, wiring in buildings, and electric appliances. Electric fields are easily shielded by common objects such as trees, fences, and walls. Magnetic fields are difficult to shield; this is why magnetic fields produced by power lines can extend into people's homes.

Transmission and distribution lines are part of the complete electric power system. Transmission lines carry between 69 and 500 kilovolts (kV) of electricity and transport it from generation sources to regions of the state needing electricity. Primary distribution lines generally carry less than 69 kV of electricity and bring it from transmission lines to homes, offices, and other sites where there are end users of electricity.

Based on forecasts of future electrical use, Minnesota has now reached the point at which new generation and transmission capacity is needed. Over the ten years from 1990 to 2000, total annual electric consumption in the State grew by 27 percent; summer peak demand is predicted to grow by 16 percent over the next ten years. Several transmission expansion projects are planned over the next ten years to meet this demand. These projects will need to be reviewed and approved by the Public Utilities Commission and the Environmental Quality Board.

Research on the health effects of EMF has been carried out since the 1970s. Epidemiological studies have mixed results – some have shown no statistically significant association between exposure to EMF and health effects, and some have shown a weak association. More recently, laboratory studies have failed to show such an association, or to establish a biological mechanism for how magnetic fields may cause cancer. A number of scientific panels convened by national and international health agencies and the U.S. Congress have reviewed the research carried out to date. Most concluded that there is insufficient evidence to prove an association between EMF and health effects; however, many of them also concluded that there is insufficient evidence to prove that EMF exposure is safe.

In deciding whether or how much to regulate EMF, decision-makers have several possible options. Each approach has advantages and disadvantages. At one extreme, regulators can require virtual certainty of harm before they address it. At the other extreme, proposers of a project would need to demonstrate its safety before regulators would allow them to proceed. Several options along this continuum are presented below for regulators to consider when routing power lines.

Several EMF exposure mitigation options are available. Mitigation options for transmission lines include increasing distance to the EMF source, phase cancellation by changing the proximity of the conductors, shielding the EMF source, and reducing voltage or current levels on the lines. Principles for decreasing EMF from primary distribution lines are similar and include increasing the right-of-way around distribution lines, phase cancellation, and burying the lines. There are also several options for mitigating EMF exposure in the home, including increasing distance to operating appliances and properly following electrical codes for wiring the home.

The Minnesota Department of Health (MDH) concludes that the current body of evidence is insufficient to establish a cause and effect relationship between EMF and adverse health effects. However, as with many other environmental health issues, the possibility of a health risk from EMF cannot be dismissed. Construction of new generation and transmission facilities to meet increasing electrical needs in the State is likely to increase public exposure to EMF and public concern regarding potential adverse health effects.

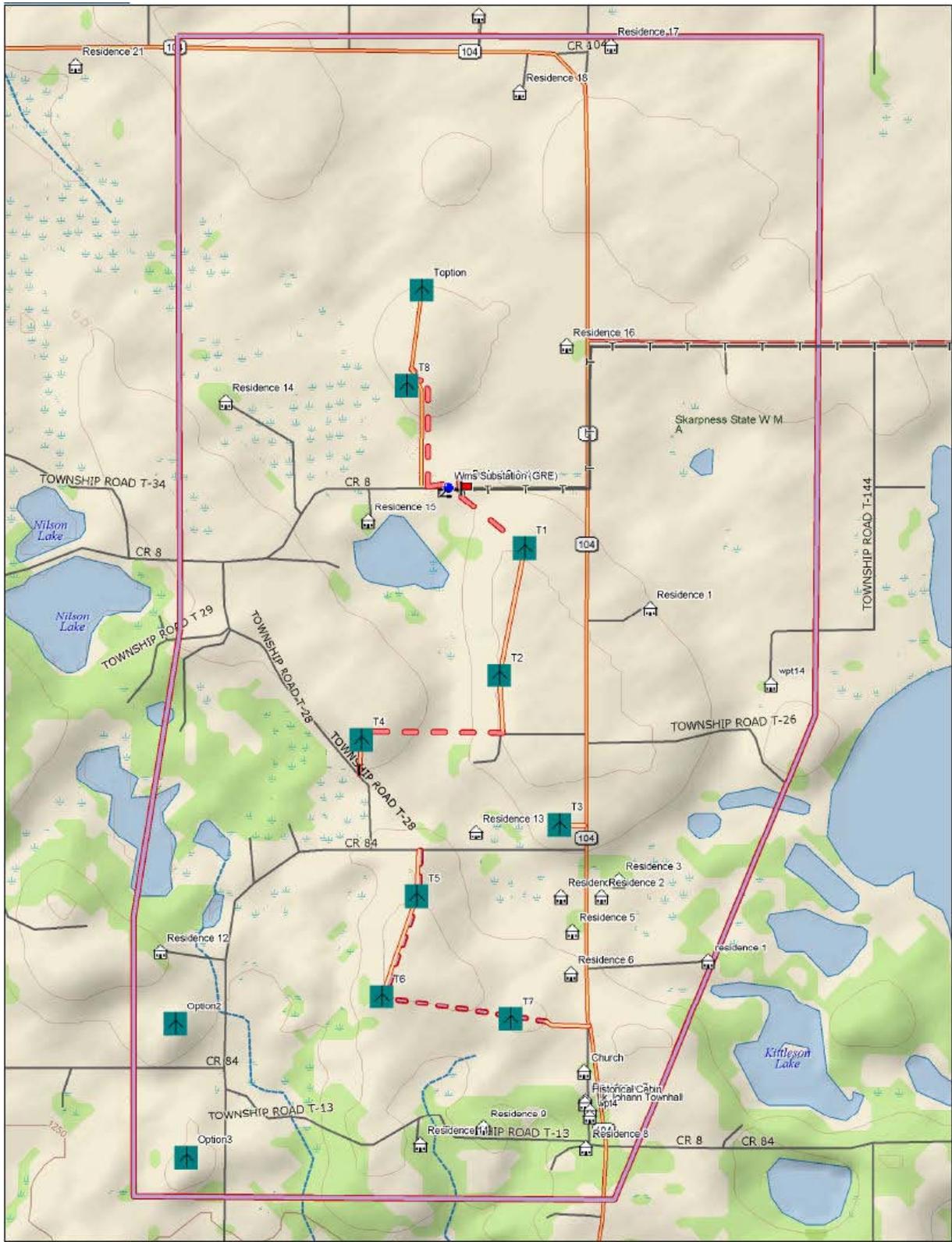
Given the questions and controversy surrounding this issue, several Minnesota agencies that regularly deal with electric generation and transmission formed an Interagency Work Group to provide information and options to policy makers. Work Group members included representatives from the Department of Commerce, the Department of Health, the Pollution Control Agency, the Public Utilities Commission, and the Environmental Quality Board. Based on its review, the Work Group believes the most appropriate public health policy is to take a prudent avoidance approach to regulating EMF. Based on this approach, policy recommendations of the Work Group include:

- Apply low-cost EMF mitigation options in electric infrastructure construction projects;
- Encourage conservation;
- Encourage distributed generation;
- Continue to monitor EMF research;
- Encourage utilities to work with customers on household EMF issues; and
- Provide public education on EMF issues.

APPENDIX I Site Picture



APPENDIX J-Residence Locations



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