APPLICATION
FOR A
SITE PERMIT
FOR A
LARGE WIND ENERGY
CONVERSION SYSTEM
IN
GOODHUE COUNTY, MINNESOTA

MPUC Docket NUMBER IP6605/WS-06-1445

KENYON WIND, LLC
APPLICANT
201 Ridgewood Avenue
Minneapolis, MN 55403

KENYON WIND LLC

201 RIDGEWOOD AVENUE
MINNEAPOLIS, MINNESOTA 55403-3508
FAX (612) 870-0689
TELEPHONE (612) 870-4000

WRITER'S DIRECT DIAL NO. (612) 252-0830
WRITER'S E-MAIL ADDRESS: j.danielsjr@worldnet.att.net

January 25, 2007
(updated)

Mr. Larry B. Hartman
Energy Facility Permitting
Minnesota Department oft Commerce
Suite 500, 85 Seventh Place East
St. Paul, MN 55101-2198

Mr. Burl A. Haar
Executive Secretary
Minnesota Public Utilities Commission
Suite 350, 121 Seventh Place East
St. Paul, MN 55101-2147

Re: Application for Site Permit, Goodhue County, Minnesota
MPUC Docket No. WS-06-1445

Gentlemen:

Enclosed for your review pursuant to Minnesota Rule 4401.0450, please find three (3) photocopies and one PDF/CD copy of our Application for Site Permit for a Large Wind Energy Conversion System in Goodhue County, Minnesota.

Also enclosed is our check in the amount of $5,000.00 for the down payment for the application fee made out to the Minnesota Department of Commerce.

Please contact me if you have any questions concerning the enclosed Application.

Thank you for your assistance in this matter.

Very truly yours,

KENYON WIND LLC

John H. Daniels, Jr.

John H. Daniels, Jr.
Chief Manager
Writer's Direct Dial: (612) 252-0830

JHD:sll
Enclosures
NOTE: Updated 1.25.2007: Figures 4.1a, 6.1, 7.11, 7.13 and Section 5.

Table of Contents

Section 1—Executive Summary of the Projects ... 1
1.1 **Introduction** ... 1
Section 2—Applicant ... 3
2.1 **Contact Information** ... 3
2.2 **Roles** ... 3
2.3 **Other LWECS in Minnesota** ... 3
2.4 **Control, Management and Service of the Projects** ... 3
Section 3—Compliance with Wind Siting Act and Minnesota Rules 4401 ... 5
3.1 **Certificate of Need or Other Commitment** ... 5
3.2 **State Policy** ... 5
Section 4—Proposed Site ... 6
4.1 **Site Boundaries** ... 6
4.2 **Wind Rights** ... 8
4.3 **Wind Characteristics** ... 8
4.3.1 **Inter-annual Variation** ... 8
4.3.2 **Seasonal Variation** ... 9
4.3.3 **Diurnal Conditions** ... 12
4.3.4 **Atmospheric Stability** ... 13
4.3.5 **Turbulence** ... 13
4.3.6 **Extreme Conditions** ... 14
4.3.7 **Speed Frequency Distribution** ... 14
4.3.8 **Variation with Height** ... 15
4.3.9 **Spatial Variations** ... 16
4.3.10 **Wind Rose (8 Directions)** ... 16
Section 5—Land Leases and Wind Rights ... 17
Section 6—Design of the Project ... 19
6.1 **Project Layout** ... 19
6.2 **Turbines and Towers** ... 19
6.3 **Electrical System** ... 20
6.4 **Location of Associated Facilities** ... 20
6.5 **Maintenance** ... 20
Section 7—Environmental Impacts ... 22
7.1 **Demographics** ... 22
7.2 **Noise** ... 22
7.3 **Visual Impacts** ... 23
7.4 **Public Services and Infrastructure** ... 25
7.5 **Cultural and Archaeological Impacts** ... 25
7.6 **Recreational Resources** ... 25
7.7 **Security and Traffic** ... 25
7.8 **Hazardous Materials** ... 26
7.9 **Land-Based Economics** ... 26
7.10 **Tourism and Community Benefits** ... 26
7.11 **Topography** ... 27
7.12 **Soils** ... 29
7.13 **Geologic and Ground Water Resources** ... 30

7.14 **Surface Water and Flood Plain Resources** ... 32
7.15 **Wetlands** ... 32
7.16 **Vegetation** ... 32
7.17 **Wildlife** ... 32
7.18 **Rare and Unique Natural Resources** ... 33
7.19 **Mitigation** ... 34
Section 8—Construction of the Projects ... 34
Section 9—Operation of the Projects ... 35
Section 10—Schedule ... 36
Schedule 11—Energy Projections ... 36
11.1 **Land Acquisition** ... 36
11.2 **Permits** ... 36
11.3 **Equipment Procurement and Delivery** ... 36
11.4 **Construction** ... 36
11.5 **Financing** ... 36
11.6 **Expected Commercial Operation Date** ... 37
Section 12—Decommissioning and Restoration ... 37
12.1 **Life of the Project** ... 37
12.2 **Decommissioning Costs** ... 37
12.3 **Updating Decommissioning Costs** ... 37
12.4 **Availability of Funds** ... 38
12.5 **Restoration** ... 38
Appendix A ... 41
Appendix B ... 42
Appendix C ... 47

Section 1—Executive Summary of the Projects

1.1 Introduction

This application is for an 18.9 MW Wind Energy Facility. The Wind Facility will consist of 9 separate limited liability companies each owning one 2.1 MW wind turbine. The project is located 3 miles east of the town of Kenyon, Goodhue County, Minnesota. Kenyon is located 60 miles west of the Minnesota–Wisconsin border and about 60 miles south-southeast of the Twin Cities and 40 miles northwest of Rochester, Minnesota (the "Projects").

The Kenyon Wind Project possesses dependable winds which and may be typical of high ground in the region around the Project Area. As such, the Kenyon Wind farm offers an opportunity to field an outstanding renewable energy project to benefit Minnesota consumers with cost-effective, price-stabilized and pollution-free electrical energy. Generally, the Project Area encompasses ground which is at the lower end of commercially viable wind resource. As the topographic maps will show, only a small portion of the greater Project Area has the excellent potential for commercial wind development whereas most of the surrounding land, which is lower than the Project Area, has greatly diminished potential if any at all. The Applicant has obtained wind rights with those land owners whose land has this potential for wind development.

The proposed site is on low and gently rolling hills which attract wind capable of producing a sufficient quantity of electric energy to make the Projects viable. Below is a chart showing the projected output of energy showing both gross and net production.

Suzlon S.88/2100 kW				
	Gross Production		Net Production	
Month	EP (MWh/mo)	CF	EP (MWh/mo)	CF
January	794	51%	646	42%
February	672	48%	547	39%
March	773	49%	629	40%
April	657	43%	535	35%
May	581	37%	473	30%
June	510	34%	415	28%
July	458	29%	373	24%
August	502	32%	409	26%
September	618	41%	503	33%
October	788	50%	641	41%
November	717	47%	584	38%
December	760	49%	619	40%
	EP (MWh/yr)	CF	EP (MWh/yr)	CF
Annual	7829	43%	6373	35%

The Project will connect to an existing 69KV line which is adjacent to the Project site. It will be

seen that the Project will have an extremely low environmental impact as only existing land currently used for row cropping will be utilized for the Project and the area possesses no unusual flora or fauna, no significant archeological or historical sites and is some distance from established recreational areas. The facility is in the process of obtaining all required permits and licenses. Construction should commence at the end of 2006. The Projects consist of nine (9) limited liability companies (LLC), each of whom will own one 2.1 MW wind turbine. Each LLC will be owned by Minnesota residents and Edison Mission Energy ("Edison"), a subsidiary of Southern California Edison. The facility will be operated by a single operational entity during the life of the Project. Funds are to be reserved for decommissioning the Project at its conclusion, consistent with Minnesota law and authorities.

All environmental issues will be addressed and the Projects will be completed with little or no negative impact on wetlands, endangered species, soil erosion, rare and unique natural resources. To date no adverse affect to the environment is expected.

All permits and licenses will be obtained from all local, state, and Federal authorities for the construction and operation of the Projects.

Construction of the Projects will be overseen by the Applicant and its partner, Edison, who has experience in construction and operation of wind farms in the Midwest and Western United States.

Applicant and Edison will create a sinking fund (similar to an increasing escrow account) or make available from other sources adequate funds to cover all costs of decommissioning. Periodically throughout the term of the project, Applicant will review the estimated costs of decommissioning of the projects and make adjustments to its sinking fund to cover such costs.

Section 2—Applicant

2.1 Contact Information

The Applicant is Kenyon Wind, LLC (the "Company" or the "Applicant"), a Minnesota Limited Liability Company located at 201 Ridgewood Avenue South, Minneapolis, Minnesota. Applicants' members are all Minnesota residents. Its telephone is (612) 252-0830 and fax number is (612) 870-0689. The Chief Manager of the Company is John H. Daniels, Jr.

2.2 Roles

Applicant will participate in the construction along with its partner, Edison. They will solicit and organize contractor bids and select one or more contractors who will be responsible for the construction of the Projects, including, but not limited to, construction of access roads, erection of turbine towers, installation of the turbine nacelles and all related components, installation of the turbine distribution system, design and installation of switchyard components, and installation of turbine foundations based on designs provided by the Company.

During construction, Applicant and Edison will manage the construction progress and oversee activities of the contractors and the suppliers. They will provide development services commensurate with the needs of the Projects.

2.3 Other LWECS in Minnesota

Applicant does not have any ownership or financial interest in any other large-scale wind conversion systems in Minnesota.

Applicant's partner—Edison—is involved regionally with the following large-scale wind conversion systems in Minnesota and Iowa. Edison is among the nation's leading developers, owners and operators of independent power projects in the United States, with total assets of $6.8 billion and an independent power portfolio of approximately 9,100 MW including wind, coal and gas-fired projects. As a leader in renewable energy, EME is committed to developing new, environmentally sensitive energy projects to meet the growing demand for electricity throughout the U.S. EME was recognized by the American Wind Energy Association as the 5th largest owner of wind energy projects in the United States as of the end of 2005.

EME has a goal of expanding its wind energy portfolio to 1,200 MWs within the next few years, and we have substantial number of projects in the advanced development state.

2.4 Control, Management and Service of the Projects

Applicant and Edison will control, monitor, operate, and maintain the Project by means of an existing proprietary computer software program. Using specialized software, Applicant and Edison will actively monitor, control, maintain, operate and trouble-shoot problems regarding the

wind turbines, electrical collection and transmission infrastructure, and the communication and control infrastructure.

The primary functions of the specialized computer software system are to:

- Monitor wind farm status;
- Allow for autonomous turbine operation;
- Alert operations personnel to wind farm conditions requiring resolution;
- Provide a user/operator interface for controlling and monitoring wind turbines;
- Collect meteorological performance data from turbines;
- Monitor field communications;
- Provide diagnostic capabilities of wind turbine performance for operators and maintenance personnel;
- Collect wind turbine and wind farm material and labor resource information;
- Provide information archive capabilities;
- Provide inventory control capabilities; and
- Provide information reporting on a regular basis.

Section 3—Compliance with Wind Siting Act and Minnesota Rules 4401

The Wind Siting Act requires an application for a site permit for a LWECS to meet the substantive criteria set forth in Minn. Stat. § 116C.57, Subd. 4. This application provides to the Minnesota Public Utilities Commission (MPUC) information necessary to demonstrate compliance with these criteria and Minnesota Rules Chapter 4401. The siting of LWECS is to be made in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources (Minn. Stat. § 116C.693). Sufficient Project design, wind resource, and technical information have been provided for a thorough evaluation of the reasonableness of the proposed site as a location for the Project.

3.1 Certificate of Need or Other Commitment

A Certificate of Need (CON) for the Project is not required from the Minnesota Public Utilities Commission because the Project's power will be sold to meet the needs of Northern States Power Company Minnesota (NSP) through NSP's mandate for increasing its wind energy sources via the CBED legislation. The Minnesota PUC recently confirmed this by issuing an order waiving competitive bidding requirements for CBED projects larger than 12 MW (Docket E002/M-05-1887). Kenyon Wind, LLC has negotiated a Power Purchase Agreement with NSP which Power Purchase Agreement is currently on file with the MPUC and stylized as "C-BED Wind Generation Purchase Agreement for Projects of 20MW or Less" dated July 31, 2006, and entered into by and between Northern States Power Company and Kenyon Wind LLC (hereinafter "NSP-Kenyon Wind PPA").

3.2 State Policy

There is strong public support for orderly development of wind energy in Minnesota. In fact, Minnesota is a leader in the United States for wind and other alternative electrical energy development. Applicant will further the state policy (Minn. Stat. § 116C.693) by siting the Project in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources, as demonstrated by the information provided in this Application.

The legislature has recently enacted Minn. Stat. § 216B.1612 (the "CBED Statute"). As evidenced by the legislative history of the statute, it is the express policy the State of Minnesota to foster and support the development of community-based wind-powered electrical generation projects within the scope of Section 216B. The present application is intended to be fully consistent with the purposes of the CBED statute in that it seeks to implement a planned development of a locally owned wind farm in Kenyon, Minnesota. Applicant has negotiated its Power Purchase Agreement ("NSP-Kenyon Wind PPA), discussed in more detail later in this Application, which by its terms is intended to comport the requirements of the CBED statute.

Section 4—Proposed Site

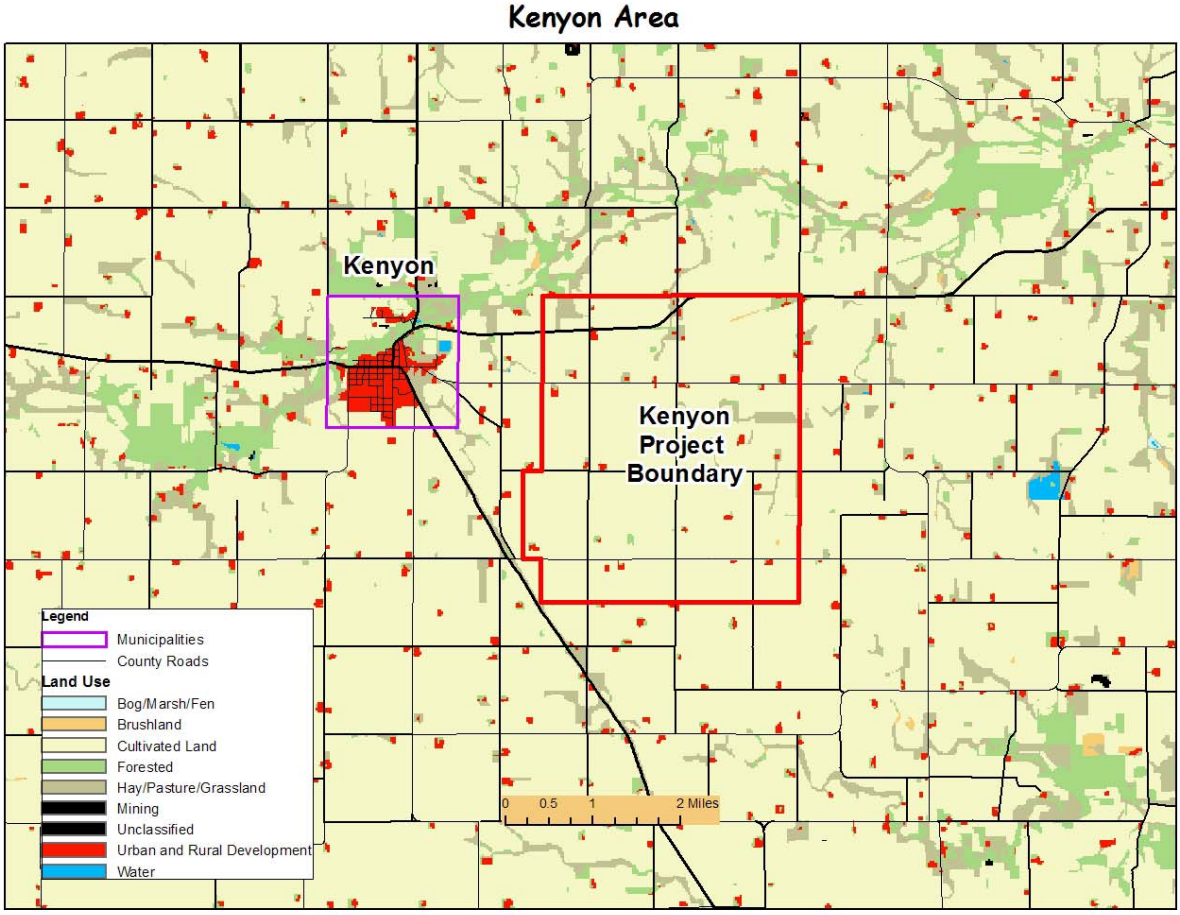
4.1 Site Boundaries

The Kenyon Wind Project is located 2 to 3 miles east of the town of Kenyon in east central Minnesota approximately 60 miles west of the Minnesota–Wisconsin Border and approximately 60 miles south southeast of the Twin Cites and approximately 40 miles northwest of Rochester, Minnesota. The geography is generally flat with gently rolling farm land, sparsely populated and spotted with occasional ponds and small lakes. It is used primarily for agricultural purposes and with little residential and commercial development and most of the housing is appurtenant to agricultural activity. Land contracts presently in the form of lease options have been obtained which will be converted to long-term leases upon construction of the project. These leases will give the Applicant rights to land and wind rights. The general project site can support a wind farm containing well in excess of 18.9 MW of wind turbine generators. Land options are available on four Sections in Kenyon and Cherry Grove Township as follows:

- Kenyon Township (T 109N R17W) Sections 12, 13
- Cherry Grove Township (T 109N R17W) Sections 6, 18

A pictorial of the project site is contained in Figure 4-1 below.

Figure 4-1
(updated 1.25.07)



4.2 Wind Rights

Applicant has worked with local landowners to obtain wind rights and leases for approximately 1100 acres, sufficient to build this 18.9 MW Project. Land rights will encompass the proposed wind farm and all associated facilities, including but not limited to wind and buffer easements, wind turbines, access roads, electrical collection system, and transmission feeder lines located on public roads when necessary. The lease terms are for thirty years and contain renewal options for ten years.

4.3 Wind Characteristics

4.3.1 Inter-annual Variation

The wind resource varies from year to year. Applicant installed a Meteorological Tower with wind assessment monitoring and reporting equipment at the Project Site in April, 2005, and has received data from the site since that date. In addition, Applicant has retained the services of WindLogics, Inc., to assess data from its Meteorological Tower in the context of regional wind data and history. The WindLogics Study concludes that wind resources at the Project Site are favorable. The WindLogics Study also addresses the inter-annual variation in wind speeds by looking at predictive intervals, which are similar to confidence values. The table below lists the P values found for the project site at the 80 meter level. A P value is confidence prediction of something occurring at a certain level. The P50 level in the table below indicates a predicted level of the capacity factor for this project that is like to occur 50 % of the time. The WindLogics study predicts that the gross energy production capacity factor for this site will be at least 42.56% half of the years.

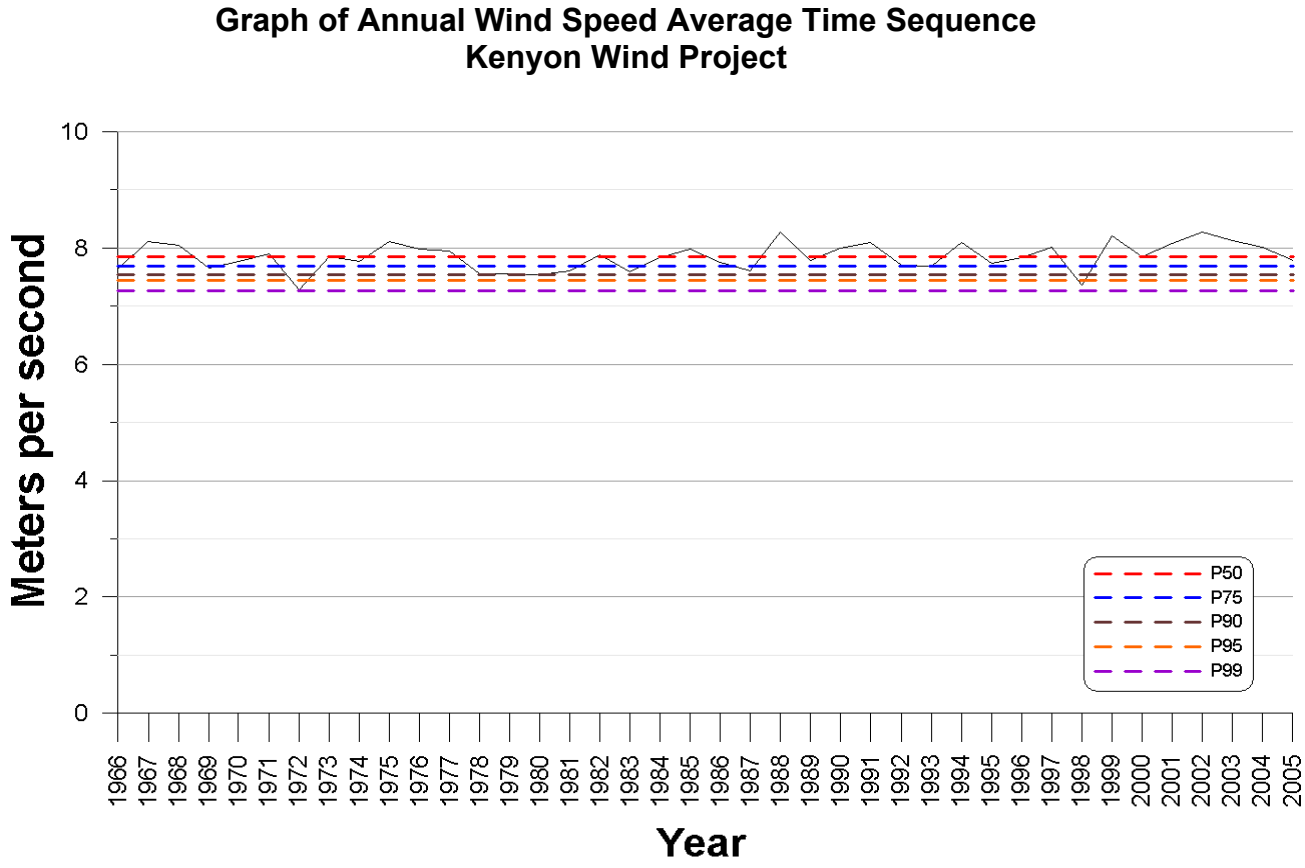
Table of Prediction Intervals on Annual Gross Energy Production
(Based on Annual Averages)
Kenyon Wind Project

	P50	P75	P90	P95	P99
Energy (MWh)	7829	7494	7187	6999	6633
Capacity Factor	42.56%	40.74%	39.07%	38.04%	36.06%

Number of Years	40
Mean	7829
Standard Deviation	487

A view of the variation in the annual average wind speed predicted for the project site along with the P values listed in the above table can be seen in the following graph.

Figure 4.3.1



4.3.2 **Seasonal Variation**

The wind resource found at this site typically has decreased wind speeds during the summer months and increased wind speeds during the transitional and cooler months. The average wind speed for the period of October through April is 8.32 m/s, while the May through September time span has an average wind speed of 7.18 m/s. The fastest average monthly wind speed occurs in January with a value of 8.54 m/s, corresponding to a gross capacity factor of 51% (794 MWh) for the Suzlon S.88/2100 KW turbine. July has the slowest average monthly wind speed with a value of 6.61 m/s, corresponding to a gross capacity factor of 29% (458 MWh) for the Suzlon S.88/2100 KW wind turbine. The following table and graph list the seasonal variation that can be expected in the wind resource found at the project site.

Figure 4.3.2A

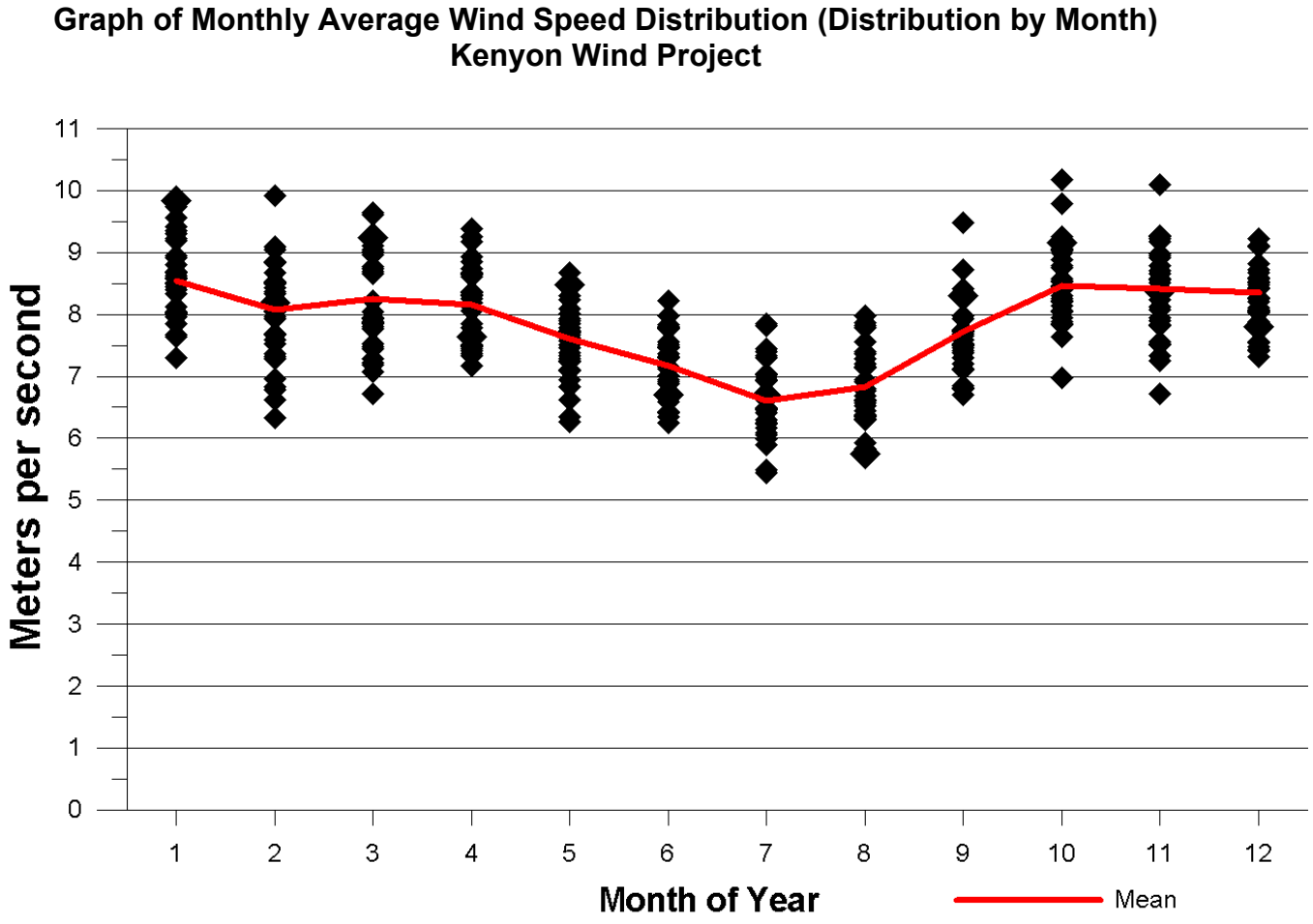
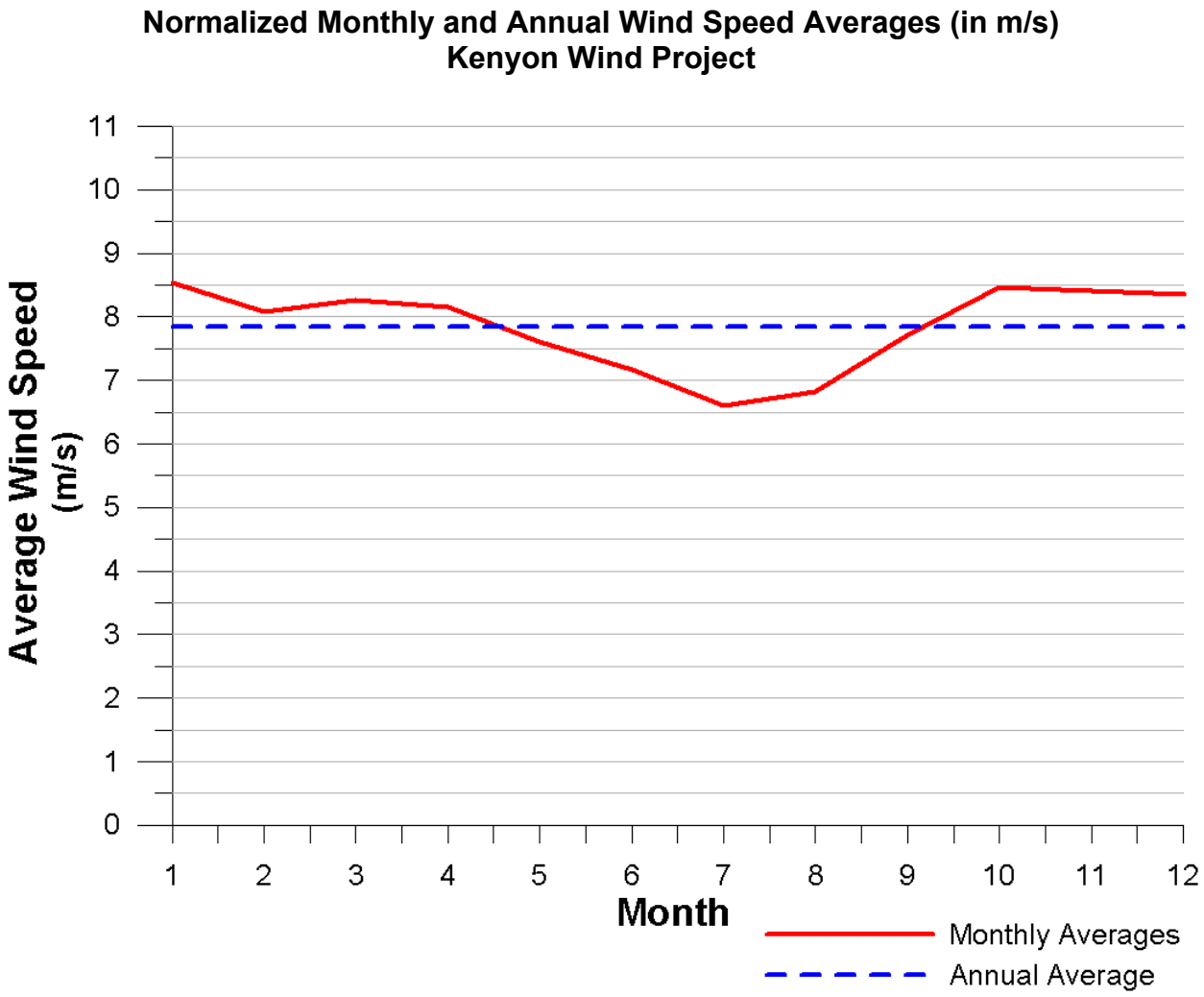

Graph of Monthly Average Wind Speed Distribution (Distribution by Month)
Kenyon Wind Project
Meters per second
0
1
2
3
4
5
6
7
8
9
10
11
1
2
3
4
5
6
7
8
9
10
11
12
Month of Year
Mean

Figure 4.3.2B

Normalized Monthly and Annual Wind Speed Averages (in m/s)
Kenyon Wind Project

Month	m/s
January	8.54
February	8.08
March	8.26
April	8.16
May	7.60
June	7.17
July	6.61
August	6.82
September	7.72
October	8.46
November	8.42
December	8.35
Annual Average	7.85

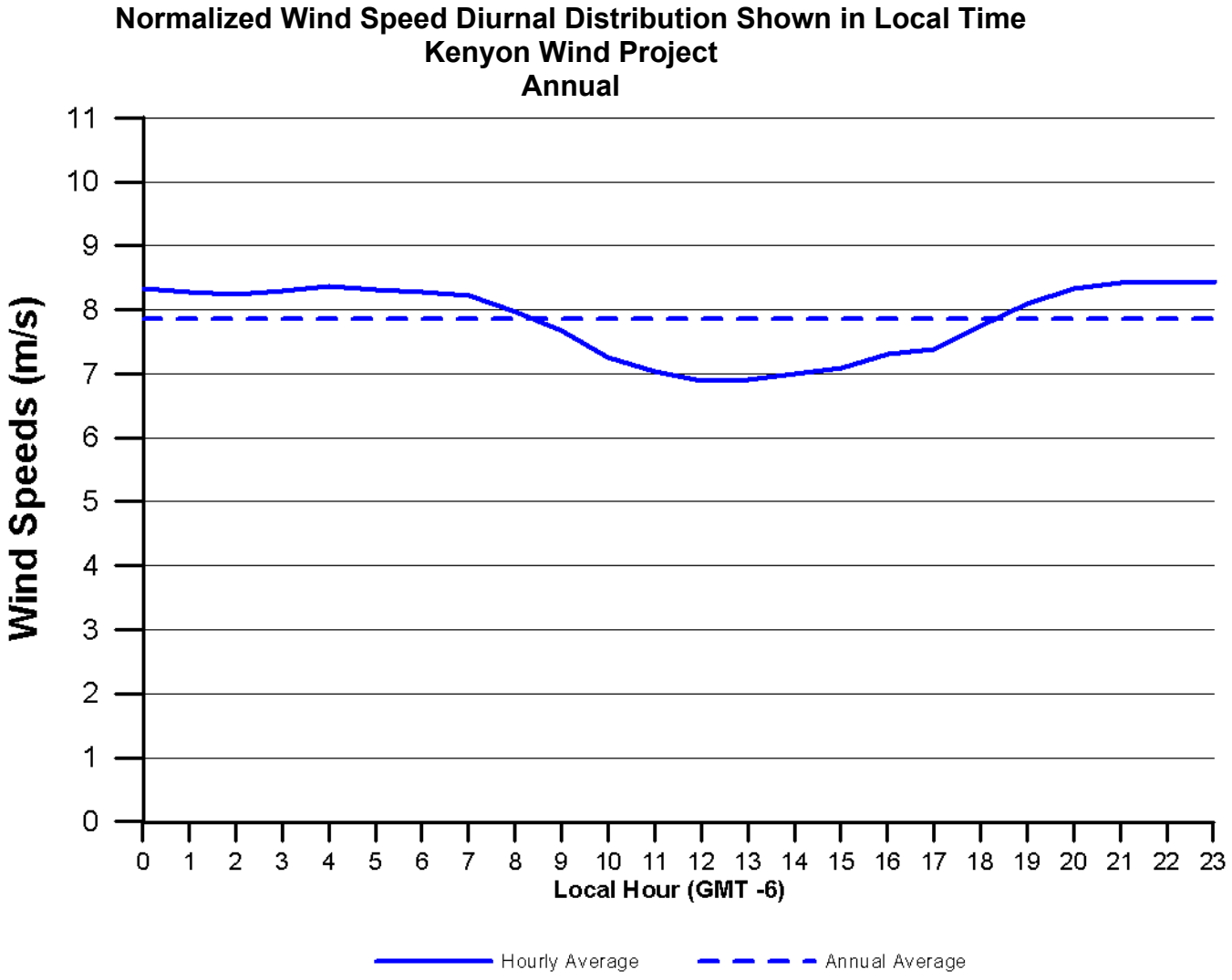
Figure 4.3.2C



4.3.3 **Diurnal Conditions**

The typical experience with the diurnal changes to the wind speed is that the wind pick up in the morning due to the warming by the sun and drop off in the evening as the sun sets. At the turbine hub height of 80 meters above ground a very different diurnal pattern can be found. At this level the winds generally fall off in the morning as the solar warming causes increased mixing of the winds at different levels. As the sun sets and less mixing of layers occurs the winds at the hub height level will again tend to increase. The following graph shows the annual average diurnal wind speeds. Monthly diurnal wind speed graphs for each month are available form the WindLogics report prepared for this project.

Figure 4.3.3



4.3.4 Atmospheric Stability

The large-scale wind regime that dominated the site is highly influenced by the location and strength of the jet stream and related tracks of the synoptic-scale weather systems (*i.e.*, low and high pressure systems). In the winter and surrounding transition seasons, the tracks of transient synoptic weather systems are frequently near southeastern Minnesota. These weather systems establish strong pressure gradients that drive the low-level winds. The winter and early spring months (October through April) often have vigorous winds due to the progression of strong synoptic weather systems through the region. In the summer, the jet stream weakens and moves north, resulting in generally weaker synoptic systems and weaker winds.

4.3.5 Turbulence

The analysis of the detailed wind characteristics of the Project site prepared by WindLogics does

not include information on specific turbulence intensities. In general, the turbulence intensity for this part of Southeast Minnesota is reasonably anticipated to be quite low and of negligible concern.

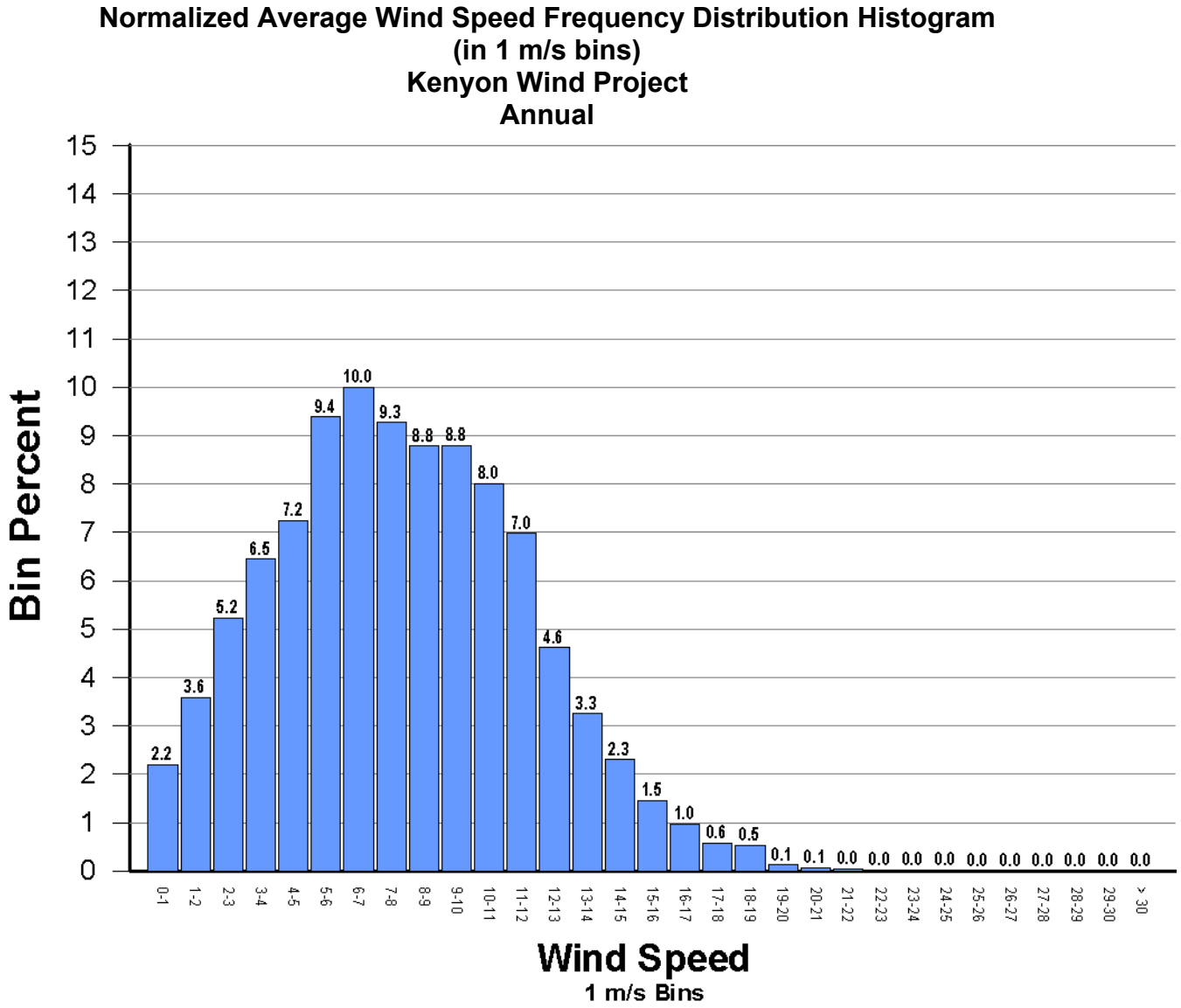
4.3.6 Extreme Conditions

Extremely high wind speeds are uncommon in southeastern Minnesota. Typically the highest wind speeds will be from significant thunderstorm events. The wind gusts produced by large thunderstorm events are well below the design limits of modern industrial wind turbines, including Suzlon turbines which Applicant intends to use in the proposed Project. Storm events that have included violent tornadoes have occurred in the southeastern parts of Minnesota. Tornado events can produce wind speeds well beyond the design limits of wind turbines. The likelihood that a tornado would strike one of the wind turbines making up this project is very low.

4.3.7 Speed Frequency Distribution

The table below shows the normalized average wind speed frequency distribution from the WindLogics study of the project site. The normalized average wind speed frequency distribution information is used to calculate the overall gross energy production based on the Suzlon 2.1 MW wind turbine power curve.

Figure 4.3.7



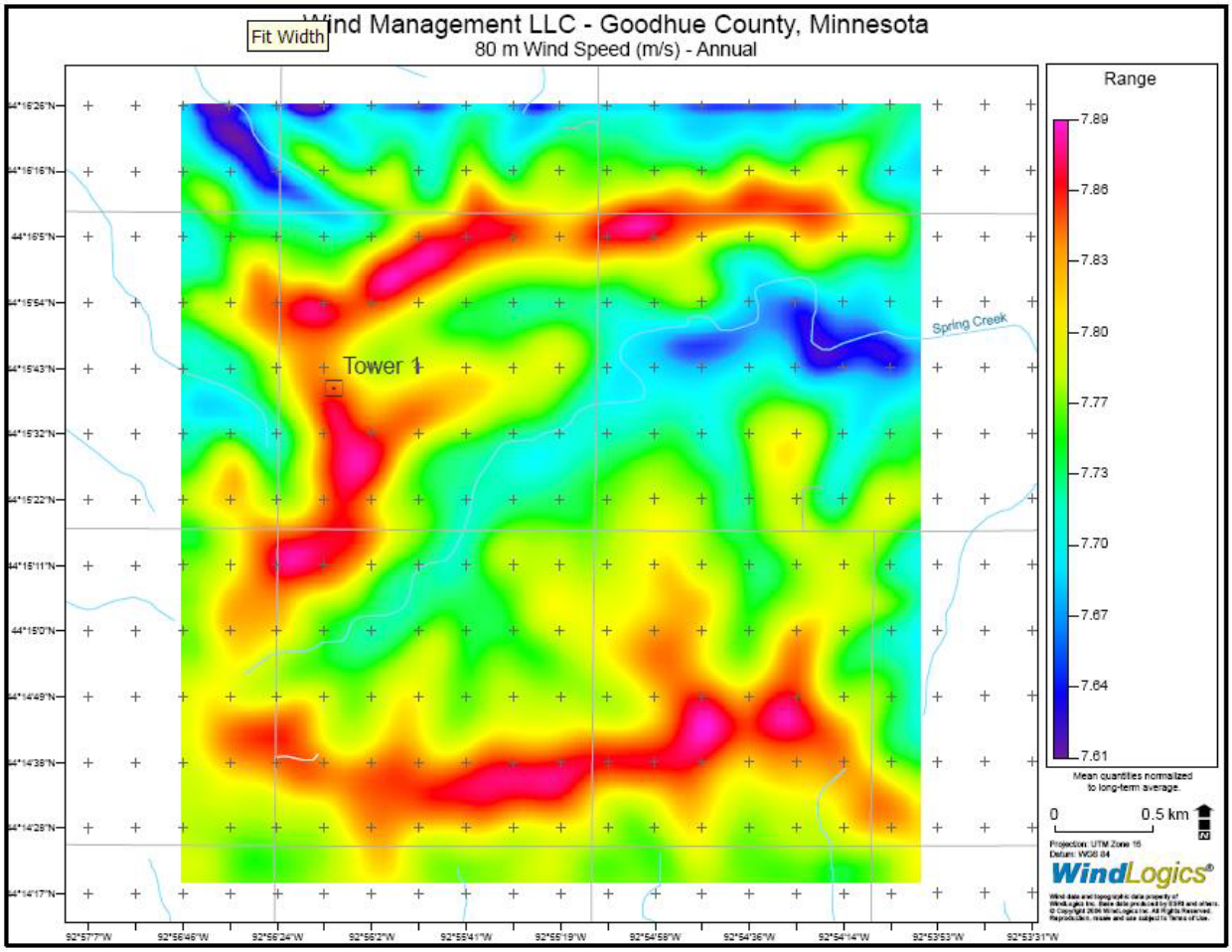
4.3.8 **Variation with Height**

Wind shear is a measure of the change in wind speed with height above ground. Wind shear values are computed using a power law where the power law coefficient alpha is usually in the range of 0.14 to 0.3. Analysis of data collected from the site show an annual average alpha of 0.19 for the project site. Of course, there are significant variations in the wind shear values depending on season, direction and time of day.

4.3.9 **Spatial Variations**

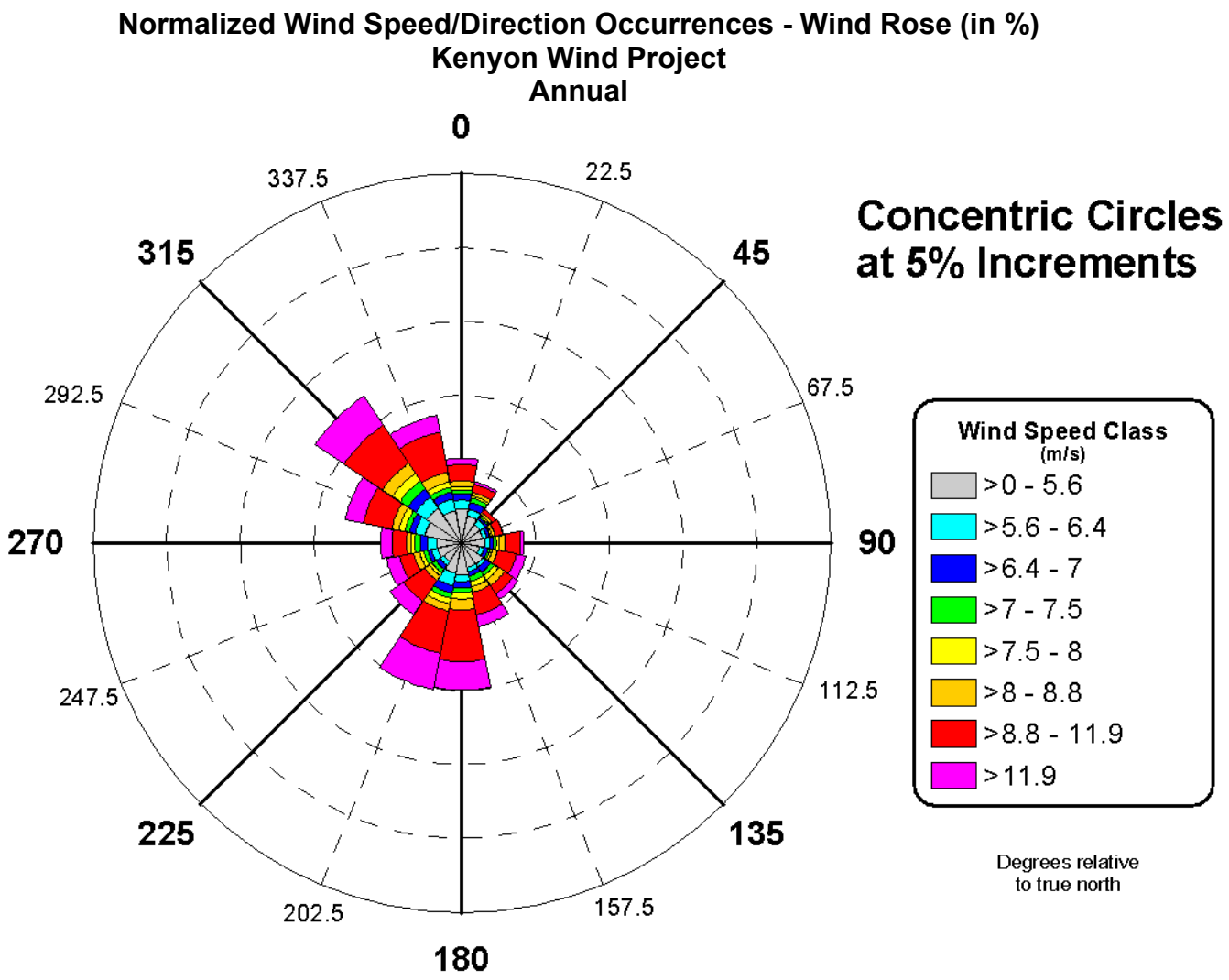
The following map shows the variations in the annual average wind speed over the project area. The overall change in wind speed varies from 7.61 to 7.89 meters per second. The higher wind resource areas coincide with the changes in topography with the higher ground having slightly higher wind resource potential.

Figure 4.3.9



4.3.10 **Wind Rose (8 Directions)**

There are two strong components which make up the seasonally changing prevailing winds in this part of South East Minnesota. In the wintertime the winds predominantly come from the NW direction. During the summertime the prevailing winds switch to a predominant SSW direction. The following wind rose graph shows the annual average wind speed by compass direction. Additional monthly wind rose graphs can be provided from the WindLogics Study upon request.



Section 5—Land Leases and Wind Rights (updated 1.25.07)

Applicant has obtained easement option agreements which grant it the right, upon exercise, to obtain lease agreements with all landowners for land within the project site boundary necessary for installation of the components of the Projects. The lease agreements, when optioned, grant Applicant the use of the property for all purposes necessary to construct the proposed wind Projects and retain on an exclusive basis wind rights over the land. These rights and easements will be able to support the proposed project. Where ever possible, the Applicant has worked to maintain a 3 by five rotor diameter wind buffer to neighboring property not involved in the project. Where the wind buffers possibly clip neighboring properties, the impact to wind development is de minimus. With the more modest wind resource and the gently rolling terrain found in the Kenyon area only the highest ground possesses the potential for commercial scale wind development. The turbines are located on the available "highest ground." This high ground location for the turbines will heighten the potential for the Applicant to maximize the wind resources in the Project Area. The Applicant continues to work to establish easements or other agreements where possible and logically needed with the landowners whose properties are touched by the wake loss buffers and who may have commercially developable wind.

In exchange for the wind rights and the use of the land during the term of the lease, landowners will be receiving lease payments throughout the 30-year lease term.

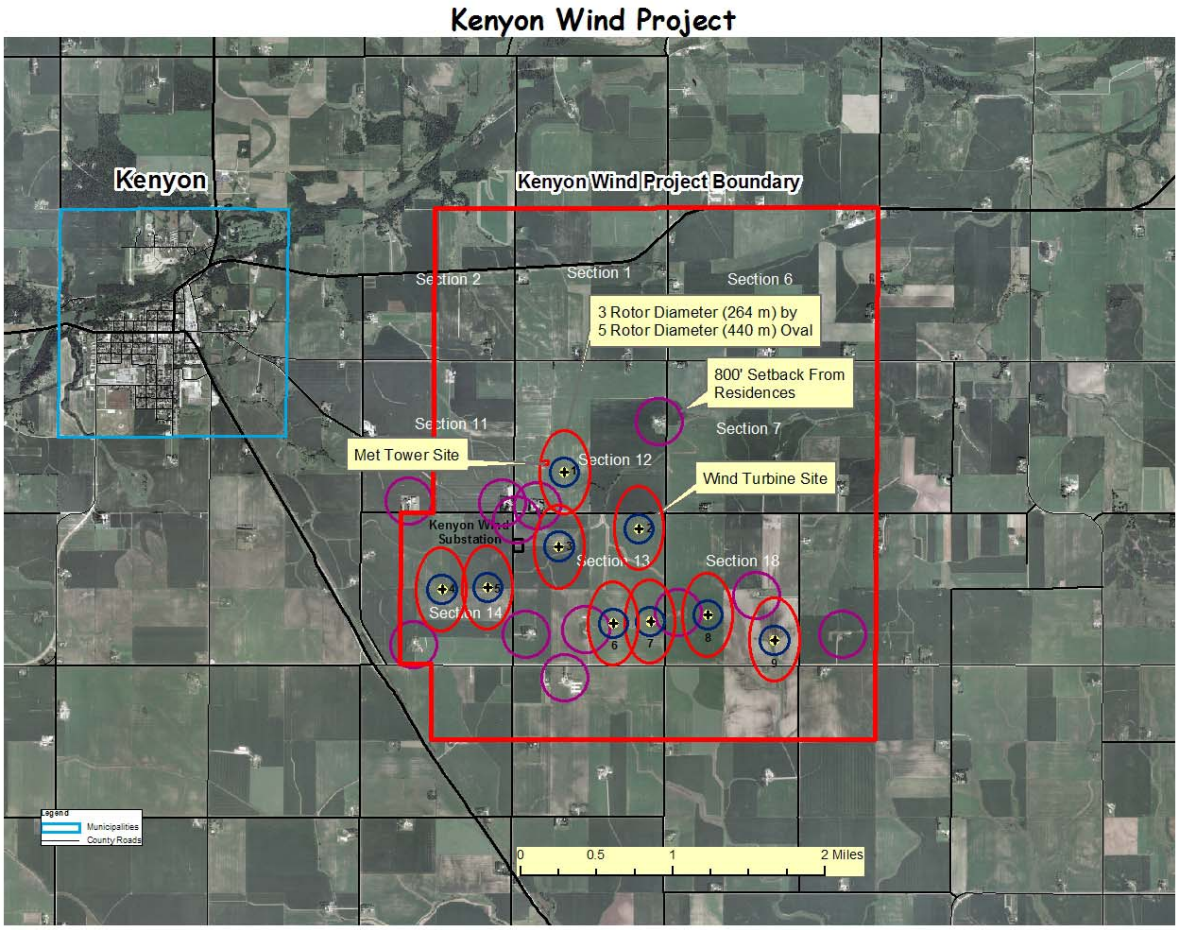
The Kenyon Wind Project proposes to use a minimum setback distance of 800 feet from all occupied structures. Also a setback of 500 feet from all roads and property boundaries will be used in establishing the locations of wind turbines.

Section 6—Design of the Project

6.1 Project Layout

The project layout has been developed to reduce impact on the community and the environment while also attempting to maximize the use of the wind resource in the project area.

Figure 6.1
(updated 1.25.07)



6.2 Turbines and Towers

The Projects expect to utilize nine (9) Suzlon S88 2.1 MW cold weather modified wind turbines (each, a "Turbine" and, collectively, the "Turbines") supplied by Suzlon Wind Energy (together with its affiliates and subsidiaries, "WTG Supplier") under the terms of one or more fixed-price date-certain turbine supply agreements with Applicant (the "Turbine Supply Agreements") on terms and conditions acceptable to Applicant and Edison. The Suzlon 2.1 MW WTG uses a 3-bladed rotor design with an 88-meter rotor diameter. The hub height of the turbines will be 80 meters above ground level. Technical specifications for the Suzlon S88 2.1 MW turbine can be provided upon request. Currently, Appendix A is blank.

The Suzlon 2.1 MW WTGs have a name plate rating of 2100 KW. Suzlon Energy Ltd. (Suzlon) has offices and blade manufacturing facilities in Pipestone, Minnesota. The Suzlon 2.1 MW wind turbines use an upwind, active pitch, horizontal axis design. It is anticipated that there will be widespread use of the Suzlon S88 turbine units throughout Minnesota and Iowa which will allow for pooling of resources during construction and subsequent operation of the turbines.

The turbine nacelles will be mounted on 80-meter tall tubular steel towers. The towers will consist of a three section heavy-duty tapered monopole design, mounted on a reinforced concrete foundation. The Individual foundations and tower specifications will be determined for the site-specific soil conditions at each turbine location.

6.3 Electrical System

Power will be generated at 600 volts and stepped up to 34.5 kV at a transformer mounted near the base of the tower. Multiple transformers will be looped together using 34.5 kV cable running underground along the turbine access roads. The power generated by each wind turbine will be routed along these underground feeder lines to the Kenyon Wind Project Substation. Fiber optic communications lines will run underground to connect all the turbines and run parallel to the underground electrical conductors.

6.4 Location of Associated Facilities

In addition to the 9 Suzlon 2.1 MW Wind Turbines and towers, Applicant will also be installing nine step-up transformers, access roads/paths to access the wind turbines for service year round. These roads will be approximately 16 feet wide and be constructed of gravel and will be low profile to allow easy cross-travel by farm equipment. Applicant will work closely with each landowner to minimize land use disruptions. Also, consideration will be taken in orientating the service roads to minimize the impact on current and future crop agriculture.

The proposed location of the Kenyon Wind, LLC substation is shown in Figure 6.1, above.

6.5 Maintenance

Applicant and Edison, through its operations manager, will monitor the Project as needed, which includes daily, weekly and monthly inspections, both remotely and on site. Several daily checks will be made in the first three months of commercial operation to see that the wind farm is operating within expected parameters. Once commissioned, service and maintenance for the Project is carefully planned and divided into the following intervals:

- **First Service Inspection.** The first service inspection will take place one to three months after the turbines have been commissioned. At this inspection, particular attention is paid to the tightening up of all bolts, a full greasing and filtering of gear oil;

- **Semi-Annual Service Inspection.** Regular service inspections commence six months after the first. The semi-annual inspection consists of lubrication and a safety test of the turbine;

- **Annual Service Inspection.** The yearly service inspection consists of a semi-annual inspection plus a full component check. Bolts are checked with a torque wrench, and tightened as necessary. The check covers 10 percent of every bolt assembly. If any bolts are found to be loose, all bolts in that assembly are tightened 100 percent and the event is logged;

- **Two-Year Service Inspection.** The two-year service inspection consists of the annual inspection, plus checking and tightening of terminal connectors; and

- **Five-Year Service Inspection**. The five-year inspection consists of the annual inspection, an extensive inspection of the wind braking system, checking and testing of oil and grease, balance check and tightness of terminal connectors.

Applicant and Edison will perform all scheduled and unscheduled maintenance including periodic operational checks and tests, regular preventive maintenance on all turbines, related plant facilities and equipment, safety systems, controls, instruments, and machinery. Specific duties include:

- Maintenance on the wind turbines and on the mechanical, electrical power, and communications system.
- Performance of all routine inspections.
- Maintenance of all oil levels and changing oil filters.
- Maintenance of the control systems, all structures associated with the wind farm, access roads, drainage systems and other facilities necessary for the operation of the wind farm.
- Maintenance of all O&M field maintenance manuals, service bulletins, revisions and documentation for the wind farm.
- Maintenance of all parts, price lists, and computer software.
- Maintenance and operation of interconnection facilities.
- Provide all labor, services, consumables and parts required to perform scheduled and unscheduled maintenance on the wind farm, including repairs and replacement of parts and removal of failed parts.
- Cooperate with regulatory agencies, as may be required, in regards to avian and other wildlife issues. This may include reporting and monitoring.
- Manage lubricants, solvents and other hazardous materials as required by local and/or state regulations.
- Maintain appropriate levels of spare parts in order to maintain equipment. Order and maintain spare parts inventory.
- Provide all necessary equipment including industrial cranes for removal and reinstallation of turbines.
- Hire, train and supervise a work force necessary to meet the general maintenance requirements.
- Implement appropriate security methods.

Section 7—Environmental Impacts

7.1 Demographics

The Projects are located in a lightly populated rural area in south-central Minnesota. According to the 2004 estimated United States Census the population of the greater Kenyon area was 1,684 and an actual census in 2000 of 1,661. Medium household income for 1999 for households was approximately $41,563 which represents the vast majority of households in Kenyon. Unemployment rates were 5.6% for males and 2.4% for females.

The greater Kenyon is primary agricultural with little manufacturing.

There is no indication of any new residential or commercial construction taking place or anticipated to take place on the proposed site. Demographics and residences are not anticipated to be affected by the proposed construction and operation of the Projects. Demographics were obtained from the official web site if the town of Kenyon.

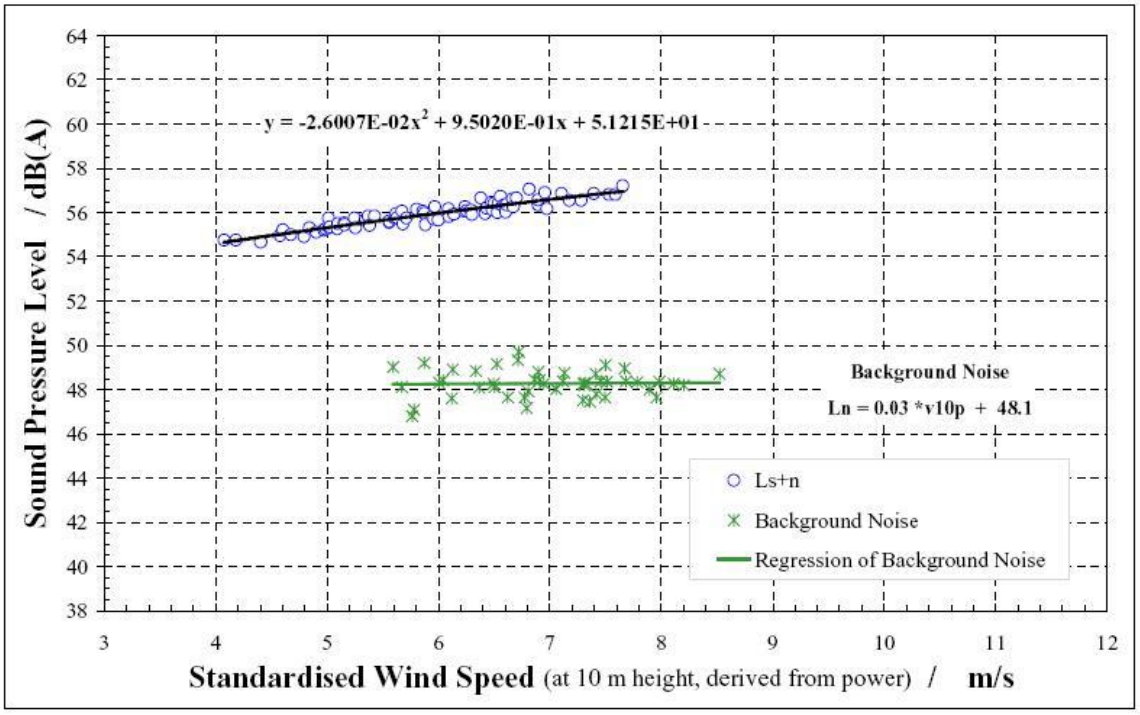
7.2 Noise

Background noise levels in the project area are typical of those in rural agricultural areas and are commonly in the low to mid-30dBA (equivalent to household level noise). These are relatively low background levels and are generally representative of the proposed site location. Higher levels exit near roads and other areas of human activity, e.g. near the town of Kenyon. The wind conditions of this general locale are approximately the same as other comparable rural areas in Minnesota.

When in motion, the wind turbines emit a perceptible sound. The level of this nose varies with the speed of the turbine and the distance of the listener of the turbine. On relatively windy days, the turbines create more noise, however, the ambient, or natural, noise level simply from the wind tends to override the turbine noise as distance from the turbines increases. The turbines will meet noise standards issued by the State of Minnesota for state permitted wind projects.

The impact to nearby residents and other potentially affected parties will be taken into consideration as part of the actual siting of the turbines and setback requirements.

Figure 7.2



Sound pressure levels measured at the WTGS operating and parked versus the standardised wind speed at 10 m above ground (fitted by a 2nd order regression)

The information shown in Figure 7.2 is from a Deutsches Windenergie Institut study of the noise emissions of the Suzlon S88 2.1 MW wind turbine. The noise level readings and calculations are based on measurements taken at a distance of 124 meters (407 feet) from the test turbine. The Kenyon Wind Project will establish a minimum setback from occupied buildings of 800 feet. From the information available from actual tests of the Suzlon S88 wind turbine it is expected that these turbines should easily meet the state noise standards. The referenced Deutsches Windenergie Institut study is available upon request.

7.3 Visual Impacts

Scenic quality is determined by evaluating the overall character and diversity of landform, vegetation, color, water, and cultural or manmade features in a landscape. Typically, more complex or diverse landscapes have higher scenic quality than those landscapes with less complex or diverse landscape features.

The Project Area lies in a rural location with farming, livestock grazing, and related agricultural operations dominating land use. Agricultural fields, farmsteads and silos, fallow fields, and large open vistas visually dominate the Project Area and the topography is relatively flat with gently rolling hills. The landscape can be classified as rural open space where the visual resources of the area are neither unique to the region nor entirely natural.

Structure and color features in the visual region of influence include those associated with wetlands, cultivated cropland, pasture, forested shelterbelt, and additional anthropogenic features such as farmsteads and other structures. Colors are seasonally variable and include green crop and pasture land during spring and early summer, green to brown crops and pasture during late summer and fall, brown and black associated with fallow farm fields year round, and white and brown associated with late fall and winter periods. The settlements in the Project Area are primarily residences and farm buildings (inhabited and uninhabited) surrounded by forested shelterbelts located along the rural county roads. These structures are focal points in the dominant open space character of the vicinity.

The towers are 80 meters at hub height. As stated above, the project is on low rolling hills (see section 7.11, Topography) in agricultural land. Because of the rolling terrain in the area the view shed will be minimized. The site layout allows for significant spacing between wind turbines which allows the design to be random rather than a straight north-south alignment.

Population density of the area is low, therefore the visual impact on large numbers of people is reduced.

There are similar towers in the general area. In the area surrounding the town of Kenyon, there are two cellular telephone towers. One stands 80.8 meters and the other 60.7 meters. In the village of Nerstrand there exists a radio/communication tower of a height of 300 feet (91.4 meters). There is an 80 meter (262 feet) wind tower at Carleton College, Northfield, Minnesota approximately 15 miles from Kenyon. Additionally, because of the agricultural nature of the area, there are many tall silos dotting the landscape.

The following measures are intended to mitigate any adverse visual impacts:

- Turbines will not be located in biologically sensitive areas such as wetlands or relict prairies;
- Turbines will be illuminated within FAA guidelines and regulations;
- Collector lines will be buried to minimize aboveground structures within the turbine array;
- Existing roads will be used for construction and maintenance where possible, minimizing the need for new roads;
- Access roads created for the wind farm will be constructed either at-grade or minimally above-grade to minimize changes to the landscape texture;
- Temporarily disturbed areas will be converted back to cropland or otherwise reseeded to blend in with existing vegetation; and
- Turbines will typically maintain minimum setbacks of 500 feet from public roads and 800 feet from occupied residences.

To attain maximum efficiency, wind power technology requires as much exposure to the wind as possible. Mitigation measures that would result in shorter towers or placement of the turbines at alternate locations off the ridgelines have not been considered as they would result in far less efficiency per unit.

7.4 Public Services and Infrastructure

The Projects will provide local tax revenues from a production tax on the wind energy produced by the turbines. No significant adverse impact on public services is expected. Wear and tear on roads will occur as a result of the transport of heavy equipment and other materials. Applicant will repair any road damage occurring during construction of the wind farm..

7.5 Cultural and Archaeological Impacts

A review of the Minnesota State Historic Preservation Office computer database indicates no known archaeological sites are documented in the proposed project area. A search was made for the town of Kenyon, Kenyon Township and Cherry Grove Township. The Project site does not have a high prehistoric archaeological potential. However, if any archaeological or historic sits are discovered in the proposed site, Applicant will avoid, when practicable, or cause minimal impacts to archaeological and historic sites. The footprint of the Projects is small, approximately 55 acres out of 1,100 acres leased for the wind farm, and it not anticipated that the Projects will have any impact on prehistoric archaeological or historic sites, if any.

7.6 Recreational Resources

Recreational opportunities in Goodhue County include: sailing, fishing, snowmobiling, hunting, wildlife viewing, campgrounds, and trails. Hunting is permitted in designated state Minnesota Department of Natural Resources (DNR) wildlife management areas, unless posted otherwise.

The Nerstrand Big Woods State Forest is located 8 miles away and will not be affected by the Projects. In fact, currently there is a 300 foot Xcel tower located in Nerstrand and a 80 meter wind turbine located at Carleton College, Northfield, both of which are not adversely affecting the state forest at Nerstrand.

Recreational activities would not be significantly impacted by the Projects. Wild game populations within Goodhue County are not expected to decline as a result of the Projects because the turbines will be located on farm land used mainly for row crops and not available for ground cover for wild game. Likewise, the Project would not reduce the camping or hiking opportunities, again because the Projects are not located on or near land used for hiking and camping.

7.7 Security and Traffic

The Project Area is located in a rural area with relatively low population. Construction and operation of the Project would have minimal impacts on the security and safety of the local population.

During the project construction period and during subsequent operation it is expected that the Projects will have no significant impact on the security and safety of the local community of Kenyon and its surrounding area. Some additional risk for worker or public injury will exist during the construction of the Projects, as it would for any large construction project. However, work plans and specifications would be prepared to address worker safety during the construction of the Projects. All work completed on the Projects will comply with OSHA rules and regulations.

7.8 Hazardous Materials

There are no hazardous materials produced by the operation of wind turbines. Similarly, no hazardous materials will be utilized in the construction of the Project or Project Site. Applicant will comply with all laws applicable to the generation, storage, transportation, clean up and disposal of hazardous wastes generated during any phase of the Projects' life. All oils and grease are contained in the wind turbine structure. There should be no leakage and no need to dispose of the fluids over the life of the wind turbine.

No harmful air or water emissions are expected from the construction and operation of the Projects. As a result, the impacts of the proposed wind farm on public health and safety will be minimal.

7.9 Land-Based Economics

The area in which the Projects are located consists of rural agricultural based farming operations, mostly row crop, dairy, and small scale hog production. In addition, within the town of Kenyon there are various small businesses but no large-scale manufacturing.

Currently there are no other wing energy farms in the area and Applicant is not aware of any proposed wind farms. However, a successful commercial scale wind farm is located approximately 20 miles to the south of the proposed Projects.

It is anticipate that the Projects will harmoniously contribute to the local economy by way of lease payments, real estate tax payments, and the acquisition of local goods and services in support of the Projects.

7.10 Tourism and Community Benefits

Tourism in south-central Minnesota centers around Rochester, Minnesota with its Mayo Clinic and Northfield with its two small nationally known colleges (St. Olaf and Carleton) and Red Wing located on the Mississippi River (50 miles away). The Kenyon area has little tourism at present. As the intended Projects would represent the largest commercial scale wind project within 60 miles of the Minneapolis-St. Paul metropolitan area. It is foreseeable that the Projects may generate tourism and related commercial activity in the initial years of its existence. Other communities in which wind projects have been located have experience an increase in tourism and community activities associated with the wind facility.

Another benefit of the wind Projects is the generation of real estate taxes assessed on the Projects which will go directly into the local government treasury and thereby benefiting the local community infrastructures, e.g. police, fire, and education.

7.11 Topography

The Projects are located in area which is transitioning from prairie to river bluff. The Projects are located in farm country with low rolling hills. See topography map below. The site was chosen for its adaptability and suitability for generating wind power from a 18.9 MW wind farm. In addition to the topography, land-use patterns (farming) and the environmental issues were also considered in site selection so as to provide sufficient land area in the site so that any negative influences could avoided or mitigated. The final designed site for the Projects with the associated facilities will encompass approximately 55 acres within a total boundary area of 1,100 acres.

Figure 7.11A
(updated 1.25.07)

Kenyon Wind Project Area Elevation

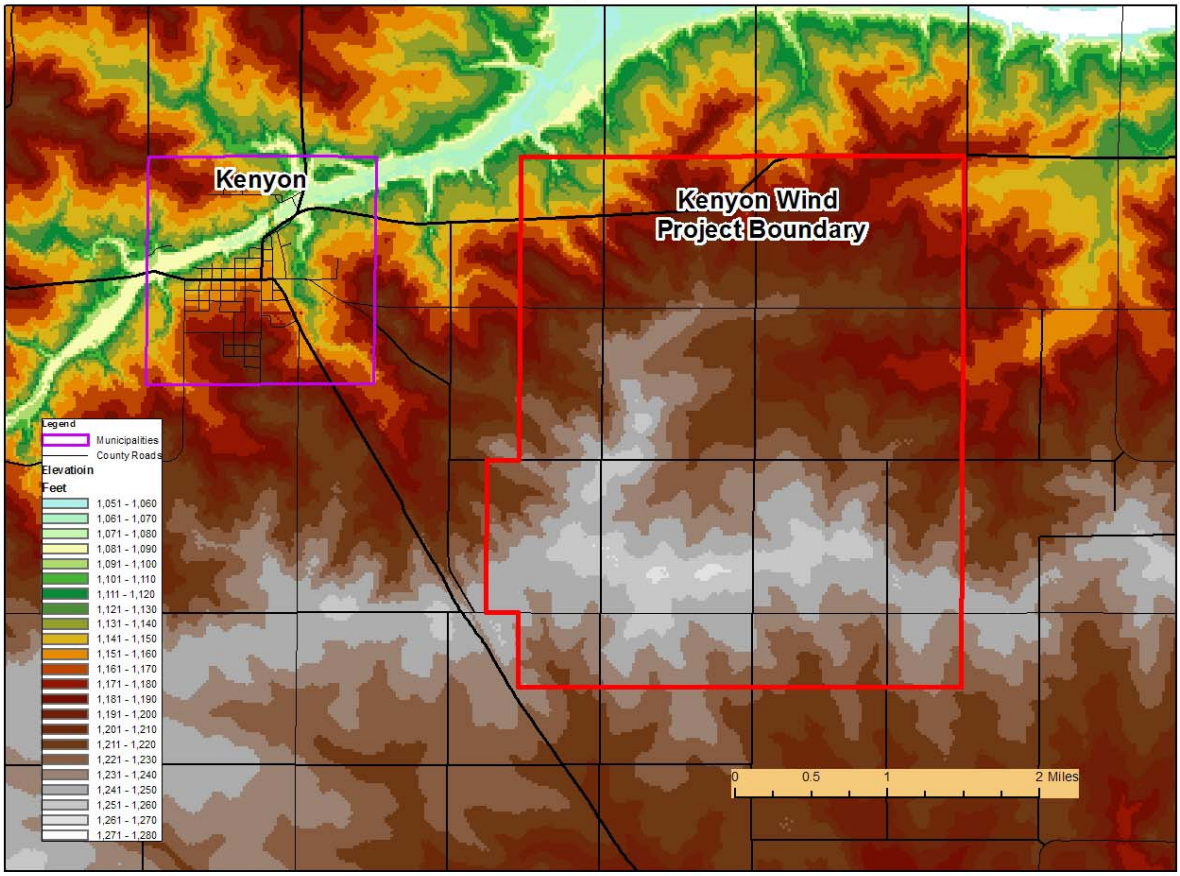
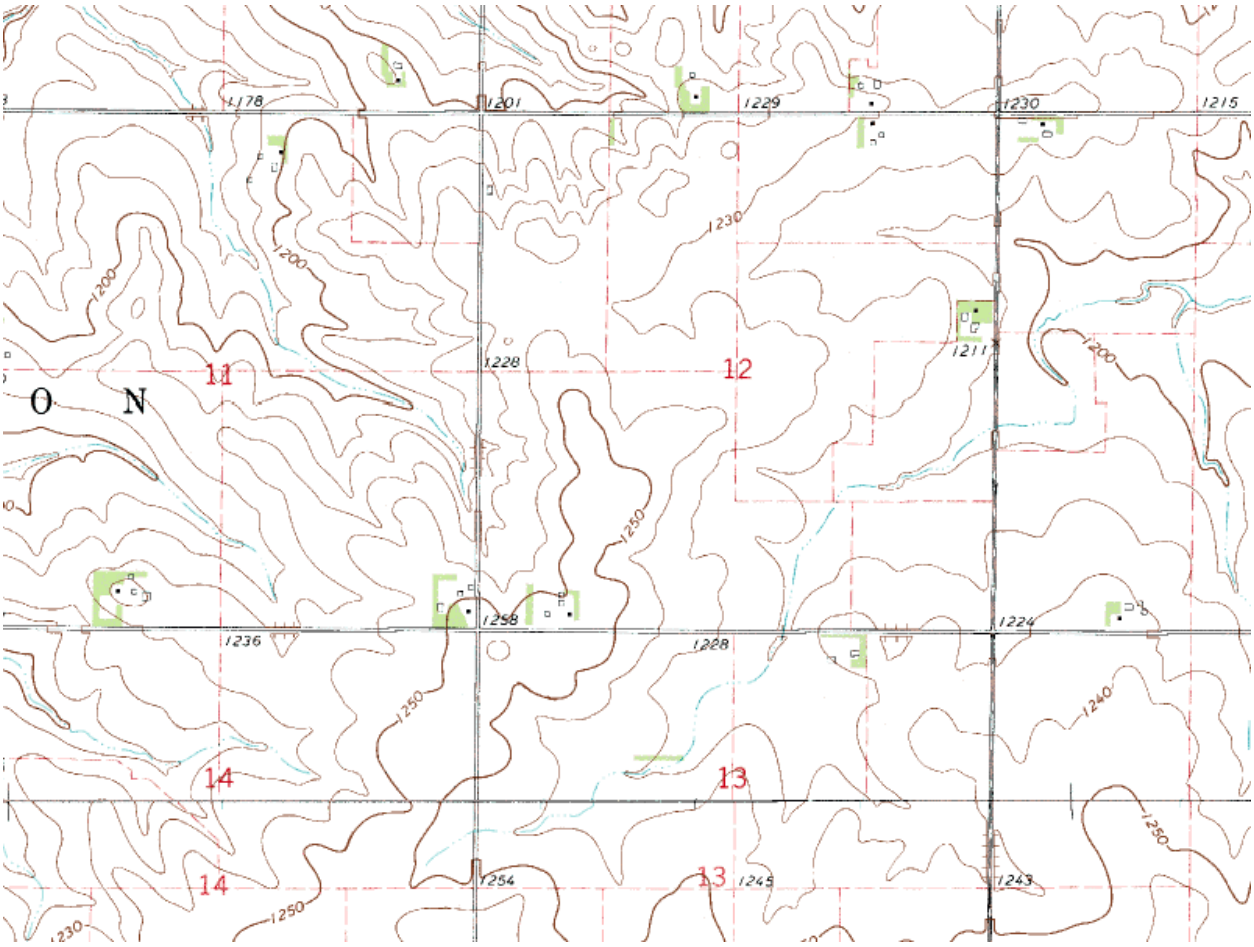


Figure 7.11B



7.12 **Soils**

Applicant will develop a Soil Erosion and Sediment Control Plan prior to construction. The goal of the Soil Erosion and Sediment Control Plan is to minimize soil erosion, to re-vegetate non-cropland and range areas disturbed by construction with wildlife conservation species, and wherever possible, to plant native tall grass prairie species in cooperation with landowners. The Soil Erosion and Sediment Control Plan shall address what types of erosion control measures will be implemented during each project phase, and shall at a minimum identify plans for grading, construction and drainage of roads and turbine pads; necessary soil information; detailed design features to maintain downstream water quality; a comprehensive re-vegetation plan to maintain and ensure adequate erosion control and slope stability and to restore the site after temporary project activities; and measures to minimize the area of surface disturbance.

Other practices will include containing excavated material, protecting exposed soil, and stabilizing restored material and removal of silt fences or barriers when the area is stabilized. The plan will identify methods for disposal or storage of excavated material. Erosion and

sedimentation control measures shall be installed prior to construction and maintained throughout the project's life.

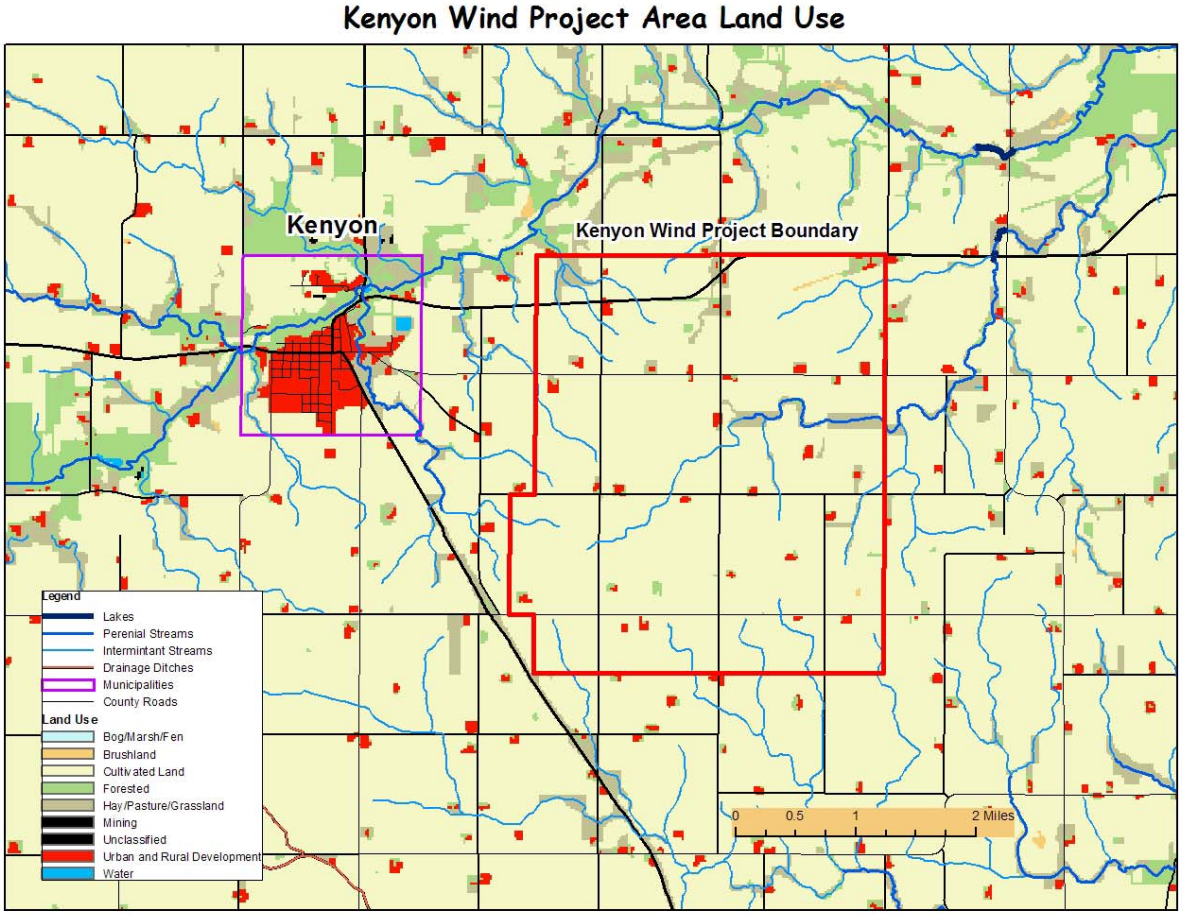
7.13 Geologic and Ground Water Resources

The construction of the foundations for the wind turbines and transformers will be done without affecting the local subsurface water resources. The foundation designs can not be completed for the wind turbines and transformers until geotechnical core sampling has been completed at each location. Edison's field engineer has expressed a preference for a pad and pier design for the turbine foundations over the more typical modified Patrick/Henderson foundation design. Because the pad and pier design does not extend nearly as deep into the ground as compared with the Patrick/Henderson design there is less disturbance of the near surface water table.

General Description of Resources

Surface water and floodplain resources for the study area were identified by reviewing U.S. Geological Survey topographic maps, Flood Insurance Rate Maps (FIRM) produced by the Federal Emergency Management Agency (FEMA), and Minnesota Public Waters and Wetlands map. The major surface waters located within the study area include the North Branch of the Zumbro River, some miles distant from the Project. . Figure 7.13 includes a complete description of the local land uses and boundaries for various surface water resources.

Figure 7.13
(updated 1.25.07)



Impacts

Construction of the wind turbines, transformer pads, and access roads will result in the disturbance of approximately 55 acres out of 1,100 total project area. All new construction will occur in areas that will avoid direct impacts to surface waters in the project area. No impacts will occur within the floodplain of the North Branch of the Zumbro River, which is a Minnesota Public Water.

Mitigative Measures

There are no significant streams or drainage ways in the Project Area. If access roads are constructed adjacent to streams and drainage ways (if any), the access roads will be designed in a manner so runoff from the upper portions of the watershed can flow unrestricted to the lower portion of the watershed. If needed, a NPDES storm water discharge permit will be acquired prior to the construction of the wind turbines and access roads. Erosion control measures will be

installed prior to construction and maintained throughout construction until disturbed areas have been successfully revegetated. The goal will be to minimize soil erosion and to revegetate the disturbed areas.

7.14 Surface Water and Flood Plain Resources

The Projects are to be built on relatively flat agricultural land and fields. The land is not located in a designated flood plain. This land has been protected by the installation of grass ways in sensitive water run off areas. The Projects will not disturb these water run off areas both pre and post construction and during decommissioning.

7.15 Wetlands

There are no protected wetlands in the vicinity of the proposed Projects. All land upon which the turbines will be built are agricultural fields which contain no low areas or ecological sensitive wetlands. Every effort will be used to not locate turbines on biologically sensitive areas such as wetlands, relic prairies, and grass ways. As noted above, the comparative size of the Projects are small and it is anticipated not to disrupt wetlands or environmentally sensitive areas.

7.16 Vegetation

The Projects are located on land which has historically used for row crop and animal production. Tree coverage is minimal in the affected areas where the turbines will be located. Applicant anticipates that there will not be a removal of any trees, groves of trees or shelter belts in its present configuration. In the event, presently unforeseen, that it becomes necessary to remove any trees or shelter belts requisite notification to the MEQB and local affected land owner will be timely made. All of the turbine towers will be located on land which is used to raise crops such as corn and soybeans and will not affect forested land or native prairie.

7.17 Wildlife

Generally

Wildlife at the site would be typical of those found in agriculture-related habitats. The resident species are representative of Minnesota game and non-game fauna that are associated with fencerows, roadside ditches, wetlands, and areas of non-maintained grasses and shrubs. The majority of the avian species are songbirds.

The impact of wind power development on resident wildlife is expected to be minimal. A small reduction in the available habitat that some of the resident wildlife uses for forage or cover will occur. Operation of the wind farm will not change the existing land use.

In the past, the Minnesota DNR expressed concern about the possibility of avian and bat mortality due to the construction of the proposed facility. Collisions with wind turbines by avian and species are known to occur. Studies of mortality are varied throughout the United States, with a greater number of mortalities occurring in California than the rest of the nation. A four-

year monitoring study in Minnesota at Buffalo Ridge was conducted to determine the risk associated with wind turbines to birds. Impacts primarily involve nocturnal migrants, whereas mortality of resident breeding birds is low. It was determined that from a population perspective, the effects are inconsequential.

On Buffalo Ridge, bat mortality primarily involves migrant or dispersing bats in the fall. Bat collision mortality is virtually non-existent to breeding populations in the area. The research conducted in Minnesota has determined that turbine collisions do not occur often enough to cause significant population declines.

Birds and Bats

Birds and bats have been documented to occasionally collide with wind turbines at other sites and there is potential for such collisions to occur at the proposed Project site. Given that the species commonly found in the Projects area are not of limited distribution or population, mortality associated with these collisions is not likely to result in impacts on a population scale. While wildlife habitat in the Projects area is of low quality, to the extent habitat is lost from construction of Project facilities, some impacts to wildlife will occur.

Based on studies of existing wind power projects in the United States and Europe, the only impact of concern to wildlife would primarily be to avian and bat populations.

Fish and Mammals

Within the general area of the Projects there exists both small and large game, including, deer, rabbit, ground rodents, and fish. However, the actual site area is fully tilled farm land which does not act as a habitat to the fish and mammals located in the Kenyon area. Thus, the Projects are not expected to disturb fish and mammal numbers or habitat.

7.18 Rare and Unique Natural Resources

For the purpose of this section, "Rare and Unique Natural Resources" are considered to be those species identified as threatened, endangered, candidate or sensitive by state and federal management agencies, or other natural resource features identified by state or federal management agencies to be unique within the region of the Project Area.

The Endangered Species Act of 1973, as amended, requires protection of those species federally listed as threatened or endangered, as well as protection of habitat designated as critical to the recovery of those listed species. Projects that could potentially have an adverse effect on listed species or critical habitat require consultation with the USFWS.

The Minnesota DNR maintains a Natural Heritage Database (NHD) through their Natural Heritage Program and Nongame Game Wildlife Program, which is the most complete source of data on Minnesota's rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features.

Minnesota's Endangered Species Statute (Minnesota Statutes, Section 84.0895) requires the Minnesota DNR to adopt rules designating species meeting the statutory definitions of endangered, threatened, or species of concern, and authorizes the Minnesota NDNR to adopt rules that regulate treatment of designated species.

The Minnesota DNR's NHD also maintains records of documented occurrences of state-listed species or other rare and unique species. The results of a NHD query for the Project Area a search radius found that there are three occurrences of rare species within the Goodhue County. These include:

- the Bald eagle *(Haliaeetus leucocephalus*) which exist in mature forest near water,
- Higgins eye pearlymussel *(Lampsilis higginsii*) which only occur in the Mississippi and St. Croix Rivers,
- Prairie bush clover *(Lespedeza leptostachya*) which occur in native prairie on well-drained soils.

None of these species exist in or near the Projects. A list of rare species within the Goodhue County from the Minnesota DNR's NHD is attached as Appendix B.

7.19 Mitigation

The following measures will be used to help avoid potential impacts to wildlife in the project area during selection of the turbine locations and subsequent development and operation.

- Avoid disturbance of individual wetlands or drainage systems during construction of the project.

- Protect existing trees and shrubs that are important to the wildlife present in the area.

- Maintain sound water and soil conservation practices during construction and operation of the project to protect topsoil and adjacent resources and to minimize soil erosion. Practices may include containing excavated material, protecting exposed soil and stabilizing restored material.

- Re-vegetate non-cropland and range areas with native species.

- Wind turbines will be sited away from areas of large concentrations of birds and migration corridors.

Section 8—Construction of the Projects

Applicant along with its partner, Edison, will oversee and manage the construction of the Projects. Edison, a wholly owned subsidiary of California Edison, has wide experience in the formulation, construction and maintenance of wind energy projects in Minnesota, Iowa and throughout the nation.

Applicant with Edison will solicit and organize contractor bids and select one or more contractors (the "BOP Contractor(s)") who will be responsible for the balance of plant activities,

which among other things includes: erection of the turbine towers, installation of the turbine nacelles and all related components, installation of the turbine distribution system, design and installation of switchyard components, and installation of turbine foundations based on designs provided by Applicant and approved by Edison and WTG Supplier. A fixed-price date-certain Construction Agreement will be negotiated with the BOP Contractor defining the scope, price and timeline for such activities and include appropriate warranties and guarantees to be agreed (the "Construction Agreement").

During construction, Edison and/or its designee(s) will manage the construction progress and oversee activities of Local Investors, WTG Supplier, and BOP Contractor. Edison's authority to manage the construction progress shall be absolute and its decisions regarding monthly draws and change orders shall be final. Upon Edison's request, Local Investors agree to continue providing development services concurrent with the construction of the Projects and to assist Edison and/or its construction management designee(s). (For example, activities requested of Local Investors may include coordination of correspondence and activities with respect to local land owners, local utilities, and local government authorities through COD.)

Applicant and Edison will provide security during construction and operation of the Projects, including fencing, warning signs, and locks on equipment and facilities. They will also provide landowners and interested persons with safety information about the project and its facilities.

Section 9—Operation of the Projects

Applicant in conjunction with Edison will operate and maintain the Projects during the term of the NSP-Kenyon Wind PPA and for any subsequent period of operation following the expiration of the present PPA.

Applicant will enter into a contractual agreement with Suzlon to provide service and maintenance for the project at least through the warranty period given by Suzlon. Thereafter, Applicant will contract with a qualified contractor for service and maintenance for the project. The service and maintenance activities will be performed by qualified technicians, trained specifically on Suzlon wind turbines. Applicant and Edison will use a qualified operations manager. The operations manager will oversee the maintenance and service program, ensure utility interconnection and respond to turbine outages. The operations manager will be responsible for all management, administration, service and maintenance activities. After the initial warranty period, Applicant and Edison may elect to take over service and maintenance duties.

The maintenance and operations facilities will be equipped with all necessary tools, instruments and spare parts to accomplish service, repairs and project/site operational control. Spare parts in relation to the electrical infrastructure will also be maintained based on similar historic project demands. The project staff will be complemented with the necessary service vehicles—light trucks, boom trucks, cranes, etc.—to ensure timely response. Turbine maintenance will be accomplished as an on-going cyclical function during the project lifetime, so as to minimize downtime. Transformer and pole-line maintenance will be accomplished on an annual basis and will be scheduled and performed during non- or low-wind periods.

Maintenance outages in relation to wind turbines will have minimal impact on the energy supply. Turbine maintenance will be accomplished as an on-going cyclical function during the project lifetime. Transformer and pole-line maintenance will be accomplished on an as needed basis and will be scheduled and performed, when possible, during non- or low-wind periods.

Section 10—Schedule

A detailed project working schedule for the construction of the Kenyon Wind Project is attached as Appendix C:

Schedule 11—Energy Projections

11.1 Land Acquisition

Applicant has entered into options to lease land and wind rights for all of the property required to support the Projects. The applicant anticipates exercising these options by Fall 2006 or Winter 2007.

11.2 Permits

Applicant will be responsible for undertaking all required environmental review, and hopes to obtain a LWECS Site Permit before the end of 2006. Any additional permits required beyond the state site permit will be obtained prior to construction.

11.3 Equipment Procurement and Delivery

For wind power projects, the longest lead-time items are typically the substation transformers, which require eight to twelve months from time of order to delivery, and the wind turbines, which require six to nine months for delivery. Edison has entered into an agreement with Suzlon to provide turbines for several 2006 wind energy projects. Under this agreement, 9 of these turbines have been designated for the Projects. Edison has also ordered the substation transformers for the Projects.

11.4 Construction

It is estimated that the construction and commissioning phase will take approximately seven months to complete. Construction will likely commence in the fall of 2006 or spring of 2007 and be completed by the latest June, 2007.

11.5 Financing

Applicant and Edison will be responsible for financing all pre-development, development, and construction activities, as well as permanent financing for the Project. All financing for the Projects has been secured.

11.6 Expected Commercial Operation Date

Applicant anticipates that the Projects will begin operation no later than July, 2007, if not sooner.

Section 12—Decommissioning and Restoration

12.1 Life of the Project

The manufacturer warrants that the wind turbines have a life of 20 years. The power purchase agreement with NSP is a twenty year term.

12.2 Decommissioning Costs

NSP in its Power Purchase Agreement ("PPA") requires Applicant to be fully responsible for decommissioning and its related costs. Applicant will comply with this requirement and will fund the costs through the use of a sinking fund or other alternative method to ensure that there are sufficient funds available for decommissioning the 9 wind turbines and associated facilities. It should be noted that the residual value of the wind turbines and the towers should be equal to the decommissioning costs.

To assure that the Project will meet is obligation to dismantle the wind Project, Applicant will either (i) establish a decommissioning fund in the amount of $25,000 per wind turbine generator to be held is escrow for the benefit of landowners, (ii) provide the landowners a corporate guaranty of the Project's decommissioning obligations from a company with an investment grade credit rating, or (iii) provide similar security acceptable to the landowners. Applicant plans to establish the decommissioning security during the seventh year of the Project.

Decommissioning the site includes removal of all wind turbines and appurtenant facilities at the conclusion of the PPA. Appurtenant facilities include the substation, access roads, underground cables, towers, foundations, buildings, transformers, etc.

Applicant reserves the right to explore alternatives to decommissioning the Projects at the conclusion of the PPA, including, but not limited to, re-applying for a Sit Permit and continuation of the operation of the Projects, providing energy to NSP or to the open market. Proper upgrades and retrofits of the turbines and infrastructure will allow the Projects to continue to efficiently produce energy for many years after the expiration of the initial PPA.

If full decommissioning of the Projects is done at the conclusion of the PPA, Applicant will restore the land to its original farming condition.

12.3 Updating Decommissioning Costs

Periodically throughout the term of the project, Applicant will review the estimated costs of decommissioning of the projects and make adjustments to its sinking fund to cover such costs.

12.4 **Availability of Funds**

Applicant and Edison will crate a sinking fund or make available from other sources adequate funds to cover all costs of decommissioning.

12.5 **Restoration**

As stated above in Paragraph 12.2, Applicant will restore the site to its pre-construction conditions suitable for farming upon the full decommissioning of the Projects.

Section 13—Identification of Other Permits

Applicant is pursing all other permits which may be required to construct and operate a Large Wind Energy Conversion System, are listed below.

Potential Permits and Approvals for Construction and Operation of the Proposed Projects

Permit	Permitting Agency	Trigger	Permit Required
Federal			
Notice of Proposed Construction or Alteration	Federal Aviation Administration	Facility safety lighting	Yes
Determination of No Hazard	Federal Aviation Administration	Turbines and facility safety lighting	Yes
Clean Water Act Section 404 Permit: GP/LOP-98-MN	U.S. Army Corps of Engineers, St. Paul District Office	Discharges of dredged or fill material into waters of the United States, including their adjacent wetlands	Yes
Exempt Wholesale Generator Status	Federal Energy Regulatory Commission	Seeking status as an exempt wholesale generator must file with the Commission	Yes
Market-based Rate Authorization (Petitions for Rate Approval pursuant to Section 284.123(b)(2), 18 C.F.R. Section 381.403)	Federal Energy Regulatory Commission	Commissioning of the wind facility	Yes
State of Minnesota			
Site Permit	Minnesota Public Utilities Commission	Construction of a Large Wind Energy Conversion System defined as a system capable of generating over 5MW	Yes
General NPDES Permit for Storm Water Discharges Associated with Construction Activities	Minnesota Pollution Control Agency (MCPA)	Disturbance of greater than 1 acre of ground	Yes
Section 401 Water Quality Certification	MPCA	Impacts to waters of the US (Corp Section 404 Permit)	
Very Small Quantity Hazardous Waste Generator License	MPCA	Generation of more than 100 pounds of hazardous waste each year	TBD
Above-ground Storage Tank (AST) Notification Form	MCPA	Any above-ground petroleum storage tank 500 gallons or greater	TBD

Permit	Permitting Agency	Trigger	Permit Required
License for Crossing Public Lands and Waters	Minnesota Department of Natural Resources	Any wind farm facility that requires crossing of or location on State administered Public Lands or Waters	Yes
Public Waters Work Permit	Minnesota Department of Natural Resources	Any construction activities that impact waterways, including wetlands. Applies to public water that are identified on DNR public waters inventory maps	Yes
Well Construction Notification	Minnesota Department of Health	Installation of private well for O&M building	Yes
Highway Access Permit	Minnesota Department of Transportation	Access to State roads from wind farm facilities	Yes, if off Highway ???
Utility Access Permit	Minnesota Department of Transportation	Utility construction to state roads	Yes
Oversize and Overweight Permit	Minnesota Department of Transportation	Use of oversize & overweight vehicles	Yes
Goodhue County			
Wetland Conservation Act Compliance	Goodhue County Soil & Water Conservation District—Minnesota Board of Soil and Water Resources (Rules)	Construction activities that impact non-state wetlands	Yes
Highway Access Permit (County and Local Roads)	Goodhue County Engineer and Township Chairs	Access to county and local roads from wind farm facilities	Yes
Zoning Permit	Goodhue County Office of Planning and Environmental Services	Construction of wind farm facilities	Yes
Conditional Use Permit (Required an Environmental Assessment)	Goodhue County Office of Planning and Environmental Services	Construction of transmission line	Yes
Individual Sewage Treatment System Permit (ISTS)	Goodhue County Office of Planning and Environmental Services	Connection to an existing or approval of on-site sewage and water (O&M building)	TBD

Appendix A

Suzlon S88 2.1 MW Turbine Specifications

This Appendix is intentionally Left Blank.

Appendix B

Rare Species within Goodhue County

U.S. Fish & Wildlife Service

Great Lakes - Big Rivers

Endangered Species

Region 3

Minnesota's Federally-Listed Threatened, Endangered, Proposed, and Candidate Species' County Distribution

PDF Version

For more information about threatened and endangered species in Minnesota, contact the U.S. Fish & Wildlife Service office at 4101 E. 80th Street, Bloomington, Minnesota 55425-1665 (612-725-3548)

Species' common names are linked to fact sheets

Species	Status	County	Habitat
Mammals			
Canada lynx *(Lynx canadensis)*	Threatened	Aitkin, Beltrami, Carlton, Cass, Clearwater, Cook, Itasca, Koochiching, Lake, Lake of The Woods, Marshall, Pine, Roseau, St. Louis	Northern forested areas
Gray wolf *(Canis lupus)*	Threatened	Aitkin, Beltrami, Becker, Benton, Carlton, Cass, Chisago, Clearwater, Cook, Crow Wing, Hubbard, Isanti, Itasca, Kanabec, Kittson, Koochiching, Lake, Lake of the Woods, Mahnomen, Marshall, Mille Lacs, Morrison, Pennington, Pine, Polk, Red Lake, Roseau, St. Louis, Sherburne, Todd, Ottertail, Wadena	Northern forested areas
Gray wolf *(Canis lupus)*	Critical Habitat	Areas of land, water, and airspace in Beltrami, Cook, Itasca, Koochiching, Lake, Lake of the Woods, Roseau, and St. Louis Counties with	

		boundaries (4th and 5th Principal meridians) identical to those of zones 1, 2, and 3, as delineated in 50 CFR 17.40(d)(1)." Contact FWS at (612)725-3548 for further information.	
Birds			
Bald eagle (*Haliaeetus leucocephalus*)	Threatened	Aitkin, Anoka, Becker, Beltrami, Benton, Big Stone, Blue Earth, Brown, Carlton, Carver, Cass, Chippewa, Chisago, Clearwater, Cook, Crow Wing, Dakota, Douglas, Fillmore, **Goodhue**, Grant, Hennepin, Houston, Hubbard, Isanti, Itasca, Kanabec, Kandiyohi, Kittson, Koochiching, Lac Qui Parle, Lake, Lake of The Woods, Le Sueur, Mahnomen, Marshall, McLeod, Meeker, Mille Lacs, Morrison, Nicollet, Olmsted, Otter Tail, Pennington, Pine, Polk, Pope, Ramsey, Redwood, Renville, Rice, Roseau, Scott, Sherburne, Sibley, St. Louis, Stearns, Swift, Todd, Traverse, Wabasha, Wadena, Washington, Winona, Wright, Yellow Medicine	Mature forest near water
Piping plover (*Charadrius melodus*) Great Lakes Breeding Population	Endangered	St. Louis County	Sandy beaches, islands
Piping plover (*Charadrius melodus*) Northern Great Plains Breeding Population	Threatened	Lake of The Woods	Sandy beaches, islands
Piping plover (*Charadrius melodus*) Great Lakes Breeding Population	Critical Habitat	St. Louis County	

Piping plover (*Charadrius melodus*) Northern Great Plains Breeding Population	Critical Habitat	Lake of the Woods	
Reptiles			
Eastern massasauga (*Sistrurus catenatus catenatus*)	Candidate	Houston, Wabasha, Winona	Floodplain wetlands and nearby upland areas along the Mississippi River and Tributaries in Houston, Wabasha, and Winona Counties
Fish			
Topeka shiner (*Notropis topeka*)	Endangered	Lincoln, Murray, Nobles, Pipestone, Rock	Prairie rivers and streams
Topeka shiner (*Notropis topeka*)	Critical Habitat	Lincoln, Murray, Nobles, Pipestone, Rock	
Insects			
Dakota skipper (*Hesperia dacotae*)	Candidate	Big Stone, Chippewa, Clay, Cottonwood, Kittson, Lac Qui Parle, Lincoln, Murray, Norman, Pipestone, Polk, Pope, Swift, Traverse, Yellow Medicine	Native prairie habitat
Karner blue butterfly (*Lycaeides melissa samuelis*)	Endangered	Winona	Pine barrens and oak savannas on sandy soils and containing wild lupines (*Lupinus perennis*), the only known food plant of larvae.
Mussels			
Higgins eye pearlymussel (*Lampsilis higginsii*)	Endangered	Chisago, Dakota, **Goodhue**, Hennepin, Houston, Ramsey, Wabasha, Washington, Winona	Mississippi and St. Croix Rivers

Sheepnose (*Plethobasus cyphyus*)	Candidate	Wabasha, Washington, Winona	Mississippi River in Wabasha and Winona counties, St. Croix River in Washington county
Spectaclecase (*Cumberlandia monodonta*)	Candidate	Chisago, Pine, Washington	St. Croix River and Rush Creek
Winged mapleleaf (*Quadrula fragosa*)	Endangered	Chisago, Washington	St. Croix River
Plants			
Minnesota dwarf trout lily (*Erythronium propullans*)	Endangered	Dakota, **Goodhue**, Rice, Steele	North facing slopes and floodplains in deciduous forest
Leedy's roseroot (*Sedum integrifolium ssp. leedyi*)	Threatened	Fillmore, Olmsted	Cool, wet groundwater-fed limestone cliffs
Prairie bush clover (*Lespedeza leptostachya*)	Threatened	Brown, Cottonwood, Dakota, Dodge, **Goodhue**, Jackson, Martin, Mower, Olmsted, Redwood, Renville, Rice	native prairie on well-drained soils
Western prairie fringed orchid (*Platanthera praeclara*)	Threatened	Clay, Kittson, Lincoln, Mower, Nobles, Norman, Pennington, Pipestone, Polk, Red Lake, Rock	Wet prairies and sedge meadows

Revised April 2006

Appendix C

Project Working Schedule

	2005		2006											
Activity Description	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
PLANNING														
WIND RESOURCE/EVAL/VER														
WINDLOGICS STUDY														
TURBINE SELECTION(BID?)/NEGOTIATIONS														
PPA/MN QUEUE														
SITE SURVEY/LAND LEASE														
MISO/EVAL STUDIES														
FACILITY STUDY INCL VAR SUP														
RF SURVEY														
FAA APPLICATION														
FINANCE STRUCTURE&FINANCE														
COMMUNITY MEETINGS														
PROJ INFO PACKAGE COMPLETE														
BID PACKAGE(TURBINE/CONSTRUCTION)														
INTERCONNECT/SUB														
UTILITY PROTECTION APPROVAL														
INTERCONNECT DETAIL														
SUBSTATIOIN DESIGN														
PROCURE SUB EQUIPMENT														
INTERCONNECT START CONST														
PERMITTING														
ZONING/SITE DESIGN/SOIL SAMPLES														
BUILDING PERMITS														
FAA/PERMITS														
DNR/OTHER														
CONSTRUCTION														
TURBINE/TOWER DOWNPAYMENTS							3%		10%			20%		
TURBINE/TOWER DELIVERY														
TRANSFORMER PROCURE&DELIVER														
ROAD CONSTRUCTION														
TOWER AND PADMOUNT FOUNDATION														
UNDERGROUND/SET TRANSFORMER														
INTERCONNECT/SCADA/METERING														
TOWER ERECTION/INSTALL NACELLE&BLADES														
INSTALL CONTROL CABS/LADDERS&PLATFORMS														
ELECTRICAL&SCADA TERMS/COMMISSION														