BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

David Boyd	Chair
J. Dennis O'Brien	Commissioner
Phyllis Reha	Commissioner
Thomas Pugh	Commissioner
Betsy Wergin	Commissioner

Joe Grennan, Permitting Director
Pleasant Valley Wind, LLC c/o
Renewable Energy Systems Americas Inc.
11101 W. 120th Ave Suite 400
Broomfield, CO 80021

SERVICE DATE: October 27, 2010

DOCKET NO. IP-6828/WS-09-1197

In the Matter of the Application of Pleasant Valley Wind, LLC for a Large Wind Energy Conversion System Site Permit for the 301 MW Pleasant Valley Wind Project in Dodge and Mower Counties The above entitled matter has been considered by the Commission and the following disposition made:

Adopted the attached Findings of Fact, Conclusions of Law, and Order prepared for the 301 MW Pleasant Valley Wind Project in Dodge and Mower counties.

Issued the attached LWECS Site Permit for the 301 MW Pleasant Valley Wind Project to Pleasant Valley Wind, LLC.

The Commission agrees with and adopts the recommendations of the Office of Energy Security which are attached and hereby incorporated in the Order, revised to correspond to the attached Findings of Fact and Site Permit.

BY ORDER OF THE COMMISSION

Burl W. Haar
Executive Secretary

This document can be made available in alternative formats (i.e. large print or audio) by calling 651.296.0406 (voice). Persons with hearing or speech disabilities may call us through Minnesota Relay at 1.800.627.3529 or by dialing 711.

office of energy security

85 7th Place East, Suite 500, St. Paul, MN 55101-2198
main: 651.296.4026 tty: 651.296.2860 fax: 651.297.7891
www.commerce.state.mn.us

October 13, 2010

Dr. Burl W. Haar
Executive Secretary
Minnesota Public Utilities Commission
127 7th Place East, Suite 350
St. Paul, MN 55101-2147

RE: **Comments and Recommendations of the Office of Energy Security Energy Facility Permitting Staff**
Docket No. IP-6828/WS-09-1197

Dear Dr. Haar:

Attached are the Comments and Recommendations of the Office of Energy Security Energy Facility Permitting Staff in the following matter:

> In the Matter of the Application of Pleasant Valley Wind, LLC for a Large Wind Energy Conversion System Site Permit for the 301 MW Pleasant Valley Wind Project in Dodge and Mower Counties.

Included in the Comments and Recommendations are a proposed Site Permit, proposed Findings of Fact, Conclusions of Law, and Order, an exhibit list, and maps.

OES EFP Staff is available to answer any questions the Commission may have.

Sincerely,

Ingrid Bjorklund
OES EFP Staff

Attachment

Page Left Intentionally Blank

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

COMMENTS AND RECOMMENDATIONS OF THE MINNESOTA OFFICE OF ENERGY SECURITY ENERGY FACILITY PERMITTING STAFF

DOCKET NO. IP-6828/WS-09-1197

Meeting Date: October 21, 2010……Agenda Item # 4

Company: **Pleasant Valley Wind, LLC**

Docket No. **IP-6828/WS-09-1197**

In the Matter of the Application of Pleasant Valley Wind, LLC for a Large Wind Energy Conversion System Site Permit for the 301 MW Pleasant Valley Wind Project in Dodge and Mower Counties.

Issue(s): Should the Commission grant a site permit to Pleasant Valley Wind, LLC for the 301 MW Pleasant Valley Wind Project?

OES Staff: Ingrid E. Bjorklund 651-297-7039

Relevant Documents

2nd Revised LWECS Site Permit Application ……February 5, 2010
Supplemental information on shadow flicker and noise …….....October 5, 2010
ALJ Summary of Public Comments ……August 3, 2010
DNR comments…….September 27, 2010
Public comments……...August 3, 2010

The enclosed materials are the work papers of the Office of Energy Security (OES) Energy Facility Permitting Staff (EFP). They are intended for use by the Public Utilities Commission and are based on information already in the record unless otherwise noted.

This document can be made available in alternative formats (i.e., large print or audio) by calling 651-296-0406 (voice). Persons with hearing or speech disabilities may call us through Minnesota Relay at 1-800-627-3529 or by dialing 711.

Documents Attached

1. Pleasant Valley Wind Site Maps (constraint maps and turbine layout maps)
2 Proposed Findings of Fact, Conclusions of Law, and Order
3. OES EFP Staff Exhibit List
4. Proposed Site Permit

See eDocket filings (09-1197) at https://www.edockets.state.mn.us/EFiling/search.jsp, or the Commission website at: http://energyfacilities.puc.state.mn.us/Docket.html?Id=25724 for project related documents.

Statement of the Issues

Should the Commission grant a site permit to Pleasant Valley Wind, LLC for the 301 Pleasant Valley Wind Project?

Introduction and Background

Pleasant Valley Wind, LLC (Applicant) submitted a site permit application to construct the proposed 301 megawatt (MW) Pleasant Valley Wind Project (Project) in Dodge and Mower counties. The Applicant filed its Site Permit application on November 23, 2009, which was accepted by the Commission on January 19, 2010.

Project Location

The Project area consists of approximately 70,000 acres located in southern Dodge and northern Mower counties in Hayfield and Vernon townships of Dodge County and Waltham, Sargeant, Pleasant Valley, Red Rock, and Dexter townships of Mower County. The Project area is located six miles northeast of the city of Austin and approximately 15 miles west of Rochester. The Applicant currently has wind rights for approximately 52,000 acres within the Project area, which should be sufficient to allow siting flexibility to ensure appropriate setbacks are met. Attachment 1 shows the Project boundaries, turbines layouts, and constraint maps.

Project Description

The Project for which a permit is being requested includes the following associated facilities:

1. A turbine layout consisting of either 188 General Electric 1.5 MW wind turbine generators with WindBOOST Control System (a software upgrade that will boost output to 1.6 MW per turbine) mounted on 80 meter (262.5 foot) towers with a rotor diameter of 82.5 meters (270 feet) or 130 Siemens 2.3 MW wind turbine generators mounted on 80 meter (262.5 foot) towers with a rotor diameter of 101 meters (331 feet);
2. Gravel access roads;
3. Electrical collection system, SCADA wiring, pad mounted transformers, collector or feeder lines, and two permanent meteorological towers.

The Applicant's goal is to complete the construction of the Project and achieve commercial operation prior to December 2012.

Regulatory Process and Procedures

A site permit from the Commission is required to construct a Large Wind Energy Conversion System (LWECS), which is any combination of wind turbines and associated facilities with the capacity to generate five megawatts or more of electricity. This requirement became law in 1995.

Certificate of Need Process

A site permit cannot be granted before a Certificate of Need (CN) is issued if a CN is required. A CN is required for the Pleasant Valley Wind Project because, as a 301 MW LWECS, it qualifies as a "large energy facility" as defined by Minnesota Statutes section 216B.2421, subdivision 2(1). The Applicant applied for a CN from the Commission on October 27, 2009, prior to filing its site permit application. A Commission order accepted the application on December 23, 2009. See Docket No. IP-6828/CN-09-937.

OES EFP staff combined portions of the site permit public participation process with portions of the environmental review process in the CN proceeding for the Project, as has been done in several recent dockets to achieve efficiencies. This included combining notices, public information and environmental review scoping meetings, and comment periods. An environmental report was prepared by OES EFP staff on June 23, 2010, for the CN proceeding. Upon completion of the environmental report, OES posted notice of Public Hearing and Environmental Report Availability on eDockets and the Commissions web page. Notice was also published in the *Rochester Post-Bulletin*, *Meadow Area News*, *Star Herald*, the *Austin Daily Herald*, and *EQB Monitor*. The Office of Administrative Hearings conducted a public hearing on the CN proceeding, including the environmental report, on July 1, 2010.

Site Permit Application and Acceptance

The Applicant filed a site permit application for the Pleasant Valley Wind Project with the Commission on November 23, 2009, and filed its second revised application on February 5, 2010. The Commission accepted the application on January 19, 2010. An OES notice of site permit application acceptance was issued on February 3, 2010. The Applicant distributed the site permit application and notice of application acceptance to local, state, and federal government agencies and to landowners.

Preliminary Determination on Draft Site Permit

On April 23, 2010, a Commission order made a preliminary determination that a draft site permit may be issued for the Pleasant Valley Wind Project. This allowed EFP staff to proceed with the notice requirements of Minnesota Rules 7854.0800 and 7854.0900. Notice of the July 1, 2010, public information and CN hearing was published in *the Rochester Post-Bulletin*, *Meadow Area News*, *Star Herald*, the *Austin Daily Herald*, and the *EQB Monitor* and also mailed to persons and governmental agencies required by rule.

Public Participation Process and Public Comments

The rules provide opportunities for the public to participate in deliberations on the LWECS site permit application. The public was advised of the submission of the site permit application after the site permit application was accepted. Public comments on information in the application and issues to be considered in development of a draft site permit were accepted through March 15,

2010. OES EFP staff received 26 comments on the site permit application in addition to the scope of the Environmental Report as part of the CN proceeding. Further, two public meetings (attendance was approximately 125 people each meeting) were held on issues to be considered in developing the draft site permit and the scope of the environmental report. OES EFP staff submitted comments and recommendations to the Commission on issuance of the draft site permit and summarized the issues raised by the public and government officials.

A public hearing on the Pleasant Valley Wind Project was held on July 1, 2010, presided over by Administrative Law Judge Manuel Cervantes. Approximately 85 people attended the public hearing. On August 3, 2010, Administrative Law Judge Cervantes filed his "Summary of Public Testimony." The summary provides an overview of project background and development and comments from 26 people. Some people spoke in favor of the Project while others had questions or concerns. Many comments related to the certificate of need. Few people commented on site permit issues; however, issues regarding property values and visual landscape were raised.

The deadline for submitting comments following the hearing was July 16, 2010. Eleven comments were received within the comment period, including a comment from the Department of Natural Resources that was received on July 16, 2010, by OES EFP staff and e-filed on September 27, 2010. Concerns regarding airports, wildlife, turbine lighting impacts on birds, trails, noise, shadow flicker, loss of productive farm land, transmission lines, property values, visual pollution, overstatement of job creation by the Applicant, and notice procedures were raised in the written comments.

Standard for Permit Issuance
The test for issuing a site permit for a LWECS is to determine whether a project is compatible with environmental preservation, sustainable development, and the efficient use of resources. Pursuant to Minnesota Statutes section 216F.02, certain sections of Minnesota Statutes chapter 216E (Minnesota Power Plant Siting Act) apply to siting LWECS, including section 216E.03, subdivision 7 (considerations in designating sites and routes). Minnesota Statutes section 216F.04(d) allows the Commission to place conditions in LWECS permits.

OES EFP Staff Analysis and Comments

The OES EFP staff addresses oral and written comments below and the proposed findings.

Minnesota Department of Natural Resources
The Minnesota Department of Natural Resources (DNR) provided comments regarding the Wild Indigo Scientific and Natural Area (SNA), Blanding's turtle, and Grant in Aid snowmobile trials in addition to other topics.

Grant in Aid Trails: The DNR requests that turbines be placed a sufficient distance from the trails to avoid falling ice through a setback requirement or requiring coordination with trail contacts regarding trail locations.

OES EFP Response: Grant in Aid trails are located on private property and their location can vary from year to year. As discussed in Finding 73, the Applicant will coordinate with the trail contacts regarding trail locations during the micro-siting process. Finding 55 addresses the issue of ice on turbine blades.

Wild Indigo SNA: The Wild Indigo SNA is a linear SNA located in the southern portion of the Project area in an east-west direction from Dexter to Brownsdale. The DNR requested a setback of 5 RD from the Wild Indigo SNA due to the prevailing wind direction. The Applicant initially did not have a setback from the Wild Indigo SNA, but has incorporated the 5 RD setback in the updated turbine layout maps (Exhibit 17). Several participating landowners will not be able to have turbines on their property due to relocation of turbines as a result of this setback.

OES EFP Response: Setbacks from SNAs are found at sections 4.1 and 4.5 of the site permit. As a result of the permit conditions, the setback from the Wild Indigo SNA would be 5 RD. Findings 71 and 72 address the Wild Indigo SNA.

Blanding's Turtle: The DNR requested that a permit condition address mitigation measures to avoid the threatened Blanding's turtle.

OES EFP Response: Section 13.1 of the site permit contains a special condition that requires Pleasant Valley to follow the fact sheet prepared by the DNR regarding recommendations for avoiding and minimizing impacts to the Blanding's turtle and distribute a summary of recommendations to all contractors and its employees. The fact sheet and summary are attached to the permit. This issue is also addressed in Finding 89.

Bird and Bat Reporting: The DNR requests that the permit define "large" with respect to the reporting of a "kill of migratory, threatened or endangered species, or the discovery of a large number of dead bird or bats of any variety on site," which was in the extraordinary events provision of the draft site permit.

OES EFP Response: This issue is now addressed in section 6.7 of the site permit. As addressed in Finding 87, section 6.7 requires the Applicant to prepare an avian and bat protection plan, submit quarterly avian and bat reports, and report five or more dead or injured non-protected avian or bat species or a single dead or injured migratory, state threatened, endangered, or species of special concern, or federally listed species discovered in the vicinity of the rotor swept area within 24 hours of discovery.

NHIS Review: The DNR requests that an updated Natural Heritage Information System (NHIS) review be performed on the Project.

OES EFP Response: Section 6.1 of the site permit requires the Applicant to conduct pre-construction desktop and field inventories of potentially impacted, if any, native prairies, wetlands, and any other biologically sensitive areas within the site and assess the presence of state threatened, endangered, or species of special concern or federally listed species. The desktop inventory will include an updated NHIS report. Further, section 13.2 of the site permit requires the avian and bat surveys, which the Applicant has committed to conducting, to be submitted at least 30 days prior to the pre-construction meeting.

Project Area Residents

Residents raised a wide variety of concerns, primarily in written comments. The issues raised by the public include impacts to airports, turbine lighting impacts on birds, noise, shadow flicker,

loss of productive farm land, transmission lines, property values, visual landscape, overstatement of job creation by the Applicant, and inadequate notice procedures.

OES EFP Response: Many of these issues are addressed in the Findings of Fact. For example, Findings 37 – 40 address noise, Findings 41 – 44 address shadow flicker, Findings 45 – 48 address visual values, Findings 49 – 51 address airports, Findings 77- 78 address loss of cropland, Findings 85 – 87 and 89 address wildlife, and Findings 52 – 54 address transmission lines from a public health perspective. Certain issues that warrant special note are discussed below.

- Lighting Impacts on Birds: Three people requested that the Project be exempt from warning lights required by the FAA or install a collision avoidance system to reduce impacts to birds.

  OES EFP Response: The wind turbines will be lighted in compliance with Federal Aviation Administration requirements as set forth in section 7.18 of the site permit. Findings 85 through 87 address impacts of the Project on birds. The Project is not known to be within a migratory flyway and the Applicant is currently conducting an avian survey, which will be used to inform micro-siting pursuant to section 13.2 of the site permit.

- Notice Procedures: One person expressed concern that she did not receive notification for the public hearing, which incorporated the public information meeting required under Minnesota Rule 7854.0900, subpart 4.

  OES EFP Response: The notice for the hearing was distributed pursuant to the requirements of Minnesota Rule 7854.0900, subpart 2, which requires that notice be distributed to persons known to be interested in the proposed project in addition to other required recipients. OES EFP maintains a list of persons who have signed up to receive notices due to their interest in the project. The notice for the public hearing included those persons on the OES EFP list. The notice was also published in four local newspapers. Findings 12 and 13 address notice for the comment period and public hearing.

- Impacts on Airports: The city of Austin requested that the Applicant address any impacts that might occur to the Austin Municipal Airport and an owner of an airport located two miles from the Project boundary expressed concern that the Project would create obstruction to navigable space.

  OES EFP Response: Section 4.12 of the site permit requires the applicant to avoid placing wind turbines or associated facilities in a location that could create an obstruction to navigable airspace of public and private airports as defined in Minnesota Rule 8800.0100, subparts 24a and 24b. The Applicant will conduct aeronautical studies, in consultation with the Federal Aviation Administration, prior to Project construction to determine if the proposed turbine locations will cause interference to Austin Municipal Airport. Finding 49 addresses this issue. The Applicant will also follow Minnesota Department of Transportation, Department of Aviation, and the Federal Aviation Administration setbacks and other limitations, which apply to public airports.

A private airport is a restricted airport that could be privately or publicly owned, but persons who may use the airport are determined by the owner of the airport. In contrast, Minnesota Rule 8800.0100, subpart 22a, defines a personal-use airport as one intended for the personal use of the owner of the airport. Section 4.12 requires the Applicant to apply the minimum obstruction clearance for private airports pursuant to Minnesota Rule 8800.1900, subpart 5, which is the license requirement for private airports. Personal-use airports are not addressed in the site permit. It is not known whether the commenter's airport meets the private airport definition. Finding 50 also addresses this issue.

- Noise: Members of the public expressed concern regarding noise produced from the wind turbines.

  OES EFP Response: On March 8, 2010, OES EFP requested additional noise data regarding cumulative noise impacts as referenced, but not provided, in the Applicant's second revised LWECS site permit application. In response to concerns by the public, the Comments and Recommendations of the OES EFP, dated April 15, 2010, stated its request that the Applicant e-file additional noise data. The Applicant submitted additional noise data on October 5, 2010, which demonstrates the cumulative noise impacts of the Siemens 2.3 MW turbine and the GE 1.5 MW turbine with WindBOOST. The WindBOOST software creates additional noise impacts that were not anticipated at the time of the application was submitted. The supplemental filing includes an analysis of the GE 1.5 MW turbine with WindBOOST. Because the comment period had closed by the date of the filing, the public did not have the opportunity to comment on the cumulative noise data. However, OES EFP staff reviewed maps provided in Exhibit 23, which show that all receptors are within acceptable limits imposed by the noise standard. Findings 37 through 40 address noise.

****

Based on the record of this proceeding, OES EFP staff concludes that the Pleasant Valley Wind Project meets the procedural requirements and the considerations and standards for issuance of a site permit identified in Minnesota statutes and rules. The site permit application and the record has been reviewed pursuant to the requirements of Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854.

In accordance with Minnesota Rule 7854.0500, subpart 2, the Commission may not issue a site permit for an LWECS that requires a certificate of need until an applicant obtains a certificate of need from the Commission.

OES EFP staff has prepared for Commission consideration proposed Findings of Fact, Conclusions of Law, and Order (Attachment 2), an Exhibit List (Attachment 3) for the Pleasant Valley Wind Project, and a proposed Site Permit (Attachment 4) for the 301 MW Pleasant Valley Wind Project.

Proposed Findings of Fact

The proposed Findings of Fact address the procedural aspects the process followed, describe the Project, and address the environmental and other considerations of the Project. See Attachment 2. The proposed Findings of Fact reflect some findings that were also made for other LWECS projects. The site considerations addressed in the proposed Findings of Fact (such as human settlement, public health and safety, noise, recreational resources, community benefits, effects on land based economies, archaeological and historical resources, wildlife, and surface water) track the factors described in the Commission's rules for other types of power plants that are pertinent to wind projects. The following outline identifies the categories of the Findings of Fact.

Exhibit List

OES EFP staff has prepared an exhibit list of documents that are part of the record in this permit proceeding. See Attachment 3.

Proposed Site Permit

The OES EFP Staff has prepared a site permit for the Commission's consideration. See Attachment 4. The conditions in this proposed site permit are consistent with conditions included in other LWECS site permits issued by the Commission.

The proposed site permit is different from the draft site permit issued by the Commission. The site permit headings and requirements have been reorganized and modified for clarity and conditions were added consistent with the findings for this Project.

Commission Decision Options

A. Pleasant Valley Wind Project Findings of Fact, Conclusions of Law, and Order

1. Adopt the attached Findings of Fact, Conclusions of Law, and Order prepared for the 301 MW Pleasant Valley Wind Project in Dodge and Mower counties.

2. Amend the Findings of Fact, Conclusions of Law, and Order as deemed appropriate.

3. Make some other decision deemed more appropriate.

B. LWECS Site Permit for the 301 MW Pleasant Valley Wind Project

1. Issue the proposed LWECS Site Permit for the 301 MW Pleasant Valley Wind Project to Pleasant Valley Wind, LLC.

2. Amend the proposed LWECS Site Permit as deemed appropriate.

3. Deny the LWECS Site Permit.

4. Make some other decision deemed more appropriate.

OES EFP Staff Recommendation: The staff recommends options A1 and B1.

October 11, 2010

ENERGY FACILITY PERMITTING
Exhibit List

In the Matter of the Application of Pleasant Valley Wind, LLC for a Site Permit for the Pleasant Valley Wind Project for up to a 301-Megawatt Large Wind Energy Conversion System in Dodge and Mower Counties.

PUC Docket No. IP-6828/WS-09-1197

OES Exhibit No.	Exhibit	eDocket Date	eDocket Document Number
1	Second Revised LWECS Site Permit Application for Pleasant Valley Wind, LLC.	2/5/10	20102-46824-04 20102-46824-02 20102-46824-01 20102-46824-03
2	OES EFP Comments and Recommendations to the PUC on acceptance of Pleasant Valley Wind's LWECS Site Permit Application.	1/5/10	20101-45691-01
3	PUC Order accepting the Pleasant Valley Wind Site Permit Application as complete and granting a variance to Minnesota Rule 7854.0800 to extend the period for the PUC to make a preliminary determination on whether a site permit may be issued.	1/19/10	20101-46134-01
4	Notice of Application Acceptance, Public Information, and Scoping Meeting (with Affidavit of Service). Notice of Revised Comment Period.	2/12/10 2/19/20	20102-47002-01 20102-47244-01
5	Applicant's affidavits of Service to landowners and government officials (mailed: February 9, 10).	4/7/10	20104-48904-01

OES Exhibit No.	Exhibit	eDocket Date	eDocket Document Number
6	Affidavits of Publication: Notice of Application Acceptance, Public Information, and Scoping Meeting appearing in the *Post-Bulletin* (2/6/10), *Austin Daily Herald* (2/12/10), *Meadow Area News* (2/10/10), *LeRoy Independent* (2/10/10), and the *Star Herald* (2/10/10).	6/30/10	220106-52118-03
7	Notice of Application Acceptance, Public Information, and Scoping Meeting published February 22, 2010 in *EQB Monitor*, Vol. 34, No. 4.	6/22/10	20106-51862-01
8	Public and government agency comments on issues to consider in developing the draft site permit and scoping of the environmental report (Parts 1 – 4). Comment period closed 3/15/10.	3/29/10	20103-48521-01 20103-48521-02 20103-48521-03 20103-48521-04
9	Record of oral comments from meetings held on February 22, 2010, on issues to consider in developing the draft site permit and scoping of the environmental report.	4/9/10	20104-49001-01 20104-49001-02
10	Applicant's comments in response to certain public and government agency comments and affidavit of service.	4/1/10	20104-48730-01 20104-48730-02 20104-48730-03
11	OES EFP Comments and Recommendations to the PUC on issuance of the Draft Site Permit.	4/9/10	20104-48996-01
12	PUC Order issuing Draft Site Permit for public review and comment and denying the contested case request, but expanding the scope of the public hearing for the certificate of need to include siting matters.	4/23/10	20104-49526-01
13	Cover letter, dated May 26, 2010, and updated project boundary maps excluding Olmstead County.	5/26/10 5/26/10 5/26/10	20105-50877-01 20105-50877-02 20105-50877-03

OES Exhibit No.	Exhibit	eDocket Date	eDocket Document Number
14	Notice of Public Hearing, Availability of Environmental Report, and Availability of Draft Site Permit (with Affidavit of Service). Affidavits of Service to government officials.	6/11/10 6/30/10	20106-51479-01 20106-52118-01
15	Notice of Public Hearing, Availability of Environmental Report, and Availability of Draft Site Permit published on June 14, 2010, in *EQB Monitor*, Vol. 34, No. 12.	6/23/10	20106-51892-01
16	Affidavits of Publication: Notice of Public Hearing, Availability of Environmental Report, and Availability of Draft Site Permit appearing in the *Rochester Post-Bulletin* (6/18/10), *Meadow Area News* (6/16/10), *Star Herald* (6/18/10), and the *Austin Daily Herald* (6/18/10).	7/2/10	20106-52118-02
17	Applicant cover letter, dated July 2, 2010, and maps showing updated turbine layouts.	7/2/10 7/2/10 7/2/10 7/12/10	20107-52254-02 20107-52254-06 20107-52254-04 20107-52480-01
18	Applicant letter, dated July 30, 2010, providing updates regarding turbine selection and increasing the size of the project to 301 MW.	7/30/10	20107-53107-02
19	Public comments on Draft Site Permit. Public comment period closed on July 16, 2010.	8/3/10	20108-53198-01
20	Comments, dated July 16, 2010, submitted by the DNR.	9/27/10	20109-54845-01
21	Record of Public Hearing held on July 1, 2010.	9/7/10	20109-54164-01
22	Summary of Public Hearing by the Office of Administrative Hearings.	8/3/10	20108-53195-01

OES Exhibit No.	Exhibit	eDocket Date	eDocket Document Number
23	Noise modeling update by Applicant.	10/5/10	201010-55186-01
24	Shadow flicker modeling summary by Applicant.	10/5/10	201010-55187-01
25	Local zoning ordinance review by Applicant.	10/5/10	201010-55185-01
26	Conservation easement maps submitted by Applicant.	5/10/10	201010-55184-01

STATE OF MINNESOTA
PUBLIC UTILITIES COMMISSION

David Boyd	Chair
J. Dennis O'Brien	Commissioner
Tom Pugh	Commissioner
Phyllis Reha	Commissioner
Betsy Wergin	Commissioner

In the Matter of the Application of Pleasant Valley Wind, LLC for a Site Permit for a 301 Megawatt Large Wind Energy Conversion System in Dodge and Mower Counties

ISSUE DATE: October 27, 2010

DOCKET NO. IP-6828/WS-09-1197

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER, ISSUING A SITE PERMIT TO PLEASANT VALLEY WIND, LLC FOR THE PLEASANT VALLEY WIND PROJECT

The above-entitled matter came before the Minnesota Public Utilities Commission (Commission) on November 23, 2009, pursuant to an application submitted by Pleasant Valley Wind, LLC (Pleasant Valley or Applicant) for a site permit to construct, operate, maintain, and manage the Pleasant Valley Wind Project (Project), a 301 Megawatt (MW) nameplate capacity Large Wind Energy Conversion System (LWECS), including associated facilities, in Dodge and Mower counties.

All of the proposed wind turbines and associated facilities will be located in Dodge and Mower counties. Associated facilities will include pad mounted step-up transformers for each wind turbine, access roads, an electrical collection system, feeder or collector lines, and two permanent meteorological towers. The energy from the proposed 301 MW Project will be delivered from three project substations via three transmission lines, which are anticipated to be permitted locally by Mower County, to the existing Pleasant Valley Substation in Pleasant Valley Township in Mower County.

STATEMENT OF ISSUE

Should the Applicant be granted a site permit under Minnesota Statutes section 216F.04 to construct a 301 MW Large Wind Energy Conversion System in Dodge and Mower counties?

Based upon the record created in this proceeding, the Public Utilities Commission makes the following findings:

FINDINGS OF FACT

Background and Procedure

1. Pleasant Valley submitted a site permit application to construct the proposed 301 MW Pleasant Valley Wind Project in Dodge and Mower counties. Pleasant Valley is a wholly owned subsidiary of Renewable Energy Systems Americas Inc. (RES Americas).[1]

2. On November 23, 2009, Pleasant Valley filed an application with the Public Utilities Commission for up to 300 megawatts of nameplate wind power generating capacity identified as the Pleasant Valley Wind Project in Dodge, Mower, and Olmstead counties.

3. Office of Energy Security (OES) Energy Facility Permitting (EFP) staff reviewed and determined that the application complied with the application requirements of Minnesota Rule 7854.0500 provided that the Applicant file a revised application containing supplemental information.[2]

4. On January 19, 2010, a Commission Order was issued accepting the application for the Pleasant Valley Wind Project provided that the Applicant submit a revised application containing the information requested by OES EFP.[3]

5. On February 3, 2010, OES EFP staff issued a notice of application acceptance and scoping meeting.[4] On February 5, 2010, the Applicant submitted a second revised LWECS site permit application.[5] This notice was posted on eDockets on February 12, 2010, and on the Commission's web site on February 9, 2010.

6. Published notice of site permit application acceptance and opportunity to comment on the permit application and issues to consider in the development of a draft site permit appeared in the *Rochester Post-Bulletin* on February 6, 2010, *Austin Daily Herald* on February 12, 2010, the *Meadow Area News* on February 10, 2010, the *LeRoy Independent* on February 10, 2010, and the *Hayfield-Dodge Center Star Herald* on February 10, 2010.[6] The published notice provided: a) description of the proposed project; b) deadline for public comments on the application; c) description of the site permit review process; and d) identification of the public advisor. The notice published meets the requirements of Minnesota Rule 7854.0600, subpart 2; however, the first publication was 18 days after application acceptance.

[1] Exhibit 1 at 4.
[2] Exhibit 2.
[3] Exhibit 3.
[4] Exhibit 4.
[5] Exhibit 1.
[6] Exhibit 6.

7. On February 9 and 10, 2010, the Applicant distributed copies of the site permit application and notice of application acceptance to certain government agencies and landowners within the Project boundary.[7] The application distribution met the requirements of Minnesota Rule 7854.0600, subpart 3. The notice was distributed only to those who received the application pursuant to subpart 3. Therefore, not every township board and city council within Dodge, Mower, and Olmstead counties received a notice as required in subpart 2. County boards, city councils, and townships boards in the vicinity of the Project area received notice just past 15 days. All township boards and city councils within Dodge and Mower counties were notified of the availability of the draft site permit as stated in Finding 12.

8. The public comment period was extended to March 15, 2010.[8] Public comments on the site permit application and issues to consider in the development of a draft site permit were accepted until March 15, 2010. EFP staff received 26 comments, including comments from the Department of Natural Resources, the Department of Transportation, Mower County, Dodge County, and the city of Austin. [9] Approximately 125 people attended two public meetings that were held on February 22, 2010, in Dexter, Minnesota, to receive comments on the scope of the environmental report and issues to be considered in developing the draft site permit. An oral record of the meetings was posted on eDockets.[10]

9. On April 8, 2010, EFP staff recommended that a draft site permit be issued and distributed for public comment.[11]

10. On April 23, 2010, a Commission Order made a preliminary determination that a draft site permit may be issued.[12] The Commission denied a request for a contested case, but expanded the scope of the public hearing that will be held on the certificate of need proceeding to include siting matters related to the draft site permit to the extent feasible.[13]

11. On May 26, 2010, the Applicant posted on eDockets an updated map excluding Olmstead County from the Project boundary.[14]

12. On June 9, 2010, EFP staff issued a notice of public hearing and availability of draft site permit and environmental report.[15] This notice was posted on eDockets on June 11, 2010. The notice met the requirements of Minnesota Rule 7854.0900, subpart 1. Notice was sent to interested persons and government agencies as required by Minnesota Rule 7854.0900, subpart 2.[16] The deadline for submitting comments on the draft site permit was July 16, 2010.

---

[7] Exhibit 5.
[8] Exhibit 4.
[9] Exhibit 8.
[10] Exhibit 9.
[11] Exhibit 11.
[12] Exhibit 12.
[13] *Id.*
[14] Exhibit 13.
[15] Exhibit 14.
[16] *Id.*

13. Published notice of the public hearing and availability of the draft site permit and environmental report appeared in the *Rochester Post-Bulletin* on June 18, 2010, *Austin Daily Herald* on June 18, 2010, the *Meadow Area News* on June 16, 2010, *Hayfield-Dodge Center Star Herald* on June 18, 2010, and the *EQB Monitor* on June 14, 2010, as required by Minnesota Rule 7854.0900, subpart 2.[17] Notice also appeared on the Commission web site on June 11, 2010.

14. A public hearing was held on the evening of July 1, 2010, in Austin, Minnesota, presided over by Administrative Law Judge Manual Cervantes from the Office of Administrative Hearings. Approximately 85 people attended the public hearing. Twenty-five people offered testimony. A court reporter prepared a record of the public hearing.[18]

15. On August 3, 2010, Administrative Law Judge Manual Cervantes filed his "Summary of Public Testimony.[19] Written comments were also posted on eDockets.[20] Written comments from the Minnesota Department of Natural Resources were filed separately.[21]

Certificate of Need

16. The Applicant is seeking a certificate of need because the Project is a large energy facility as defined by Minnesota Statutes section 216B.2421.[22]

Project Description

17. The Project will be comprised of up to 188 General Electric (GE) 1.5 MW wind turbine generators with the WindBOOST Control System, which is a software upgrade that will be applied to the physical GE 1.5 MW turbine effectively boosting the 1.5 MW turbine to a 1.6 MW turbine, or 130 Siemens 2.3 MW wind turbine generators.[23] The Project name plate capacity will be 299 MW if the Siemens turbines are selected or 300.8 MW if the GE turbines are selected.[24] Associated facilities will include wind turbine access roads, underground electrical collection system, SCADA wiring, feeder or collector lines, pad mounted turbine transformers, and up to two meteorological towers. The Project's turbine locations are shown on maps posted on eDockets on July 2 and 12, 2010.[25]

18. Three Project substations and up to three transmission lines will connect the Project to the transmission grid at the existing Pleasant Valley Substation.[26] A 6.4 mile 138 kV high voltage transmission line will extend from the north substation and a 7.0 mile 138 kV high voltage transmission line will extend from the south substation, which will both

[17] Exhibits 15 and 16.
[18] Exhibit 21.
[19] Exhibit 22.
[20] Exhibit 19.
[21] Exhibit 20.
[22] Exhibit 1 at 6.
[23] Exhibit 1 at 17; Exhibit 18.
[24] *Id*.
[25] Exhibit 17.
[26] Exhibit 1 at p. 2.

connect to the third proposed substation.[27] A 345 kV high voltage transmission line of less than 1,500 feet in length will be constructed from the third proposed substation to the Pleasant Valley Substation.[28]

19. The Project substations and transmission lines are being permitted locally by Mower County.[29] An operations and maintenance building will be constructed within the Project area, which is also being permitted locally by Mower County.[30]

20. The turbine towers will be 262.5 feet (80 meters) in height.[31] The total height of the tower and blade at the 12:00 position will be approximately 398 feet (121.25 meters) for the GE turbine and approximately 428 feet (130.5 meters) for the Siemens turbine. The rotor diameter for the GE turbine is 271 feet (82.5 meters) and the rotor swept area is 57,540 square feet (5,346 square meters).[32] The rotor diameter for the Siemens turbine is 331 feet (101 meters) and the rotor swept area is 86,111 square feet (8,000 square meters).[33] The GE turbine has a rotor speed that varies from 9 to 18 revolutions per minute, a cut-in wind speed of 7.8 miles per hour, and a cut-out wind speed of 55.92 miles per hour.[34] The Siemens turbine has a rotor speed that varies from 6 to 16 revolutions per minute, a cut-in wind speed of 8.9 miles per hour, and a cut-out wind speed of 55.9 miles per hour.[35]

21. The GE and Siemens turbines have a similar rotor and nacelle design.[36] The rotor consists of three blades mounted to the hub, which is attached to the nacelle that houses the main components of the wind turbine, including the gearbox, general, and the main control panel.[37] The yaw system automatically directs the orientation of the rotor into the wind based on the wind vane readings from the top of the nacelle.[38]

22. Two foundation designs (spread footing and pier type foundations) are under consideration, and the final design will depend on the results of the geotechnical study.[39] Each turbine foundation will account for the site specific soils and subsurface conditions.[40] A formal geotechnical investigation will be performed at each turbine site with a drill to analyze conditions and test for voids and homogeneous ground conditions.[41] Each turbine will have a step-up transformer to raise the voltage and transfer it to the 34.5 kV underground collection system.[42]

---

[27] *Id*. at 19.
[28] *Id*.
[29] *Id*.
[30] *Id*. at 20.
[31] *Id*. at 17.
[32] *Id*.
[33] *Id*.
[34] *Id*.
[35] *Id*.
[36] *Id*. at 15.
[37] *Id*.
[38] *Id*.
[39] *Id*.
[40] *Id*.
[41] *Id*.
[42] *Id*. at 17-18.

23. The Project currently has six temporary meteorological towers and two permanent meteorological towers will be installed as part of the associated facilities for this LWECS Project. The two permanent meteorological towers will be free standing 50 to 80 meter towers, made of galvanized steel, and lighted as required by the Federal Aviation Administration.[43]

24. All turbines and two permanent meteorological tower will be interconnected with fiber optic communication cable that will be installed underground. The communication cables will run back to a central host computer, which will be located either at the Project substation or at the operations and maintenance facility where a supervisory control and data acquisition (SCADA) system will be located. Signals from the current and potential transformers at each of the delivery points will also be fed to the central SCADA host computer. This computerized supervisory network will provide detailed operating and performance information for each wind turbine. The Permittee will maintain a computer program and database for tracking each wind turbine's maintenance history and energy production.

25. Pleasant Valley expects to begin commercial operation in December 2012.[44] The estimated Project costs are estimated between $2,100/kW to $2,400/kW, depending on final turbine selection engineering and layout.[45]

Site Location, Characteristics, and Topography

26. The proposed Project will be located in Mower and Dodge counties, in Hayfield (sections 31, 34) and Vernon (Section 31) townships in southern Dodge County and Waltham (sections 1, 3, 10-15, 25, 26, 36), Sargeant (sections 3, 6-12, 15-20, 24, 25, 27-29, 32-34, 36), Pleasant Valley (sections 9, 10, 16-18), Red Rock (sections 1, 2, 11-13, 15, 24-26), and Dexter (sections 2-6, 8-11, 17-23, 26-30) townships in northern Mower County. The Project area is located approximately six miles northeast of Austin, Minnesota, and fifteen miles west of Rochester, Minnesota. The Project site encompasses approximately 70,000 acres, which is primarily agricultural land.[46] Over 98 percent of the Project area is cropland.[47] Some farmers raise livestock, principally hogs, but there are also dairy, beef, and turkey farms.[48] Elevation varies from 1,275 to 1,385 feet above mean sea level.[49] The Project area is nearly level to gently sloping with a few areas having slopes more than 6 percent.[50] Wind turbine and access roads are sited to take into account the contours of the land to minimize impact.

27. Construction of the turbines sites and access roads will involve temporarily disturbing land within the Project area. Temporary access roads will be approximately 36 feet wide and permanent access roads will be approximately 20 feet wide using crushed rock with

[43] *Id*. at 20.
[44] *Id*. at 81.
[45] *Id*. at 80.
[46] *Id*. at 20.
[47] *Id.* at 64.
[48] *Id.* at 20.
[49] *Id*. at 58.
[50] *Id*. at 60.

eight-foot compacted shoulders.[51] Total miles of access roads will range from 32 to 42 miles, depending on final turbine layout.[52]

Wind Resource Considerations

28. Wind monitoring within the Project area indicates that the long-term predicted mean wind speed for the Project is 7.45 meters per second (16.67 miles per hour) at 58 meters (190 feet).[53] Pleasant Valley expects a range of long-term mean annual 80 meter (262 feet) wind speeds will be 8.38 to 8.31 meters per second (18.74 to 19.26 miles per hour).[54] Wind speeds are generally greater in the night and early morning hours and decline at midday. Regionally, the prevailing wind directions are generally south and northwest. In general, a higher percentage of the annual energy budget results from southerly winds, which are most frequent in the warmer weather months. The north and northwest winds typically occur in winter.

29. For this Project, turbines will be generally be sited in short strings or clusters within the site boundaries. Wind turbines are sited to have good exposure to winds from all directions with emphasis on exposure to the prevailing wind directions while considering site topography, natural resource features, setbacks, and wind resources. The turbines are typically oriented west-southwest to north-northeast, which is roughly perpendicular to the prevailing southerly and northwest winds. Turbine placement, aside from other resource features where setbacks or wind access buffers are required, will be designed to provide sufficient spacing between the turbines to minimize internal wake losses. Given the prevalence for southerly and northerly winds, the spacing is widest in the north-south direction. Greater or lesser spacing between the turbines or turbine strings may be used in areas where the terrain dictates the spacing. Sufficient spacing between the turbines is utilized to minimize wake losses when the winds are blowing parallel to the turbines. Wake loss occurs when a turbine is spaced too close downwind of another turbine, and therefore, produces less energy and is less cost-effective. Section 4.10 of the site permit addresses turbine spacing.

30. According to the application, projected average net annual output will be approximately 1,050,000 to 1,130,000 MWh (megawatt hours), using either the GE 1.5 MW turbine with WindBOOST and the Siemens 2.3 MW turbine.[55]

Wind Rights and Easement/Lease Agreements

31. In order to build a wind facility, a developer must secure leases or easement agreements to ensure access to the site for construction and operation of a proposed project. These lease or easement agreements also prohibit landowners from any activities that might interfere with the execution of the proposed Project. Land and wind rights will need to

[51] *Id*. at 19.
[52] *Id.*
[53] *Id*. at 12.
[54] *Id*. at 1.
[55] *Id*. at p. 2.

encompass the proposed LWECS, including all associated facilities such as access roads, meteorological towers, and electrical collection system.

32. The Applicant has executed easement agreements that grant Pleasant Valley the necessary wind rights for the construction and operation of the Project. Within the approximately 70,000 acres site, the Applicant has easement agreements for approximately 52,000 acres, which provide over 99 percent of the required land for turbines and associated facilities. Section 10.1 of the site permit requires the Applicant to demonstrate it has obtained the wind rights necessary to construct and operate the Project at least 10 working days before the pre-construction meeting.

Site Considerations

33. Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854 apply to the siting of LWECS. The rules require an applicant to provide a substantial amount of information to allow the Commission to determine the potential environmental and human impacts of the proposed project and whether the project is compatible with environmental preservation, sustainable development, and the efficient use of resources.[56] Pursuant to Minnesota Statutes section 216F.02, certain sections in Minnesota Statutes chapter 216E (Minnesota Power Plant Siting Act) apply to siting LWECS, including section 216E.03, subdivision 7 (considerations in designating sites and routes). The analysis of the environmental impacts required by Minnesota Rule 7854.0500, subpart 7, satisfies the environmental review requirements; no environmental assessment worksheet or environmental impact statement is required for a proposed LWECS project.[57] Therefore, environmental review is based on the application and the record. The following analysis addresses the relevant considerations that are to be applied to a LWECS project.

Human Settlement

34. The site is in an area of relatively low population density, which is characteristic of rural areas throughout southeastern Minnesota. The town of Sargeant, with a population of 74, is the only incorporated city within the Project boundary.[58] The towns of Hayfield with a population of 1,338, Waltham with a population of 191, Brownsdale with a population of 702, and Dexter with a population of 324 are all within one mile of the Project area boundary.[59]

35. The Applicant has committed to a setback of 1,000 feet to all residences, regardless of whether that landowner is a participant in the Project, and has a setback goal of 1,500 feet.[60] The Applicant stated it will consider setbacks of less than 1,500 feet if the landowner has consented to the setback.[61] Section 4.2 of the site permit incorporates this setback. Pleasant Valley will also be required to set back its turbines a minimum of five

[56] Minn. Stat. § 216F.03 and Minn. R. 7854.0500.
[57] Minn. R. 7854.0500, subp. 7.
[58] Exhibit 1 at 20.
[59] *Id*.
[60] *Id*. at 14.
[61] *Id*.

rotor diameters (between 1,335 feet and 1,655 feet, depending on turbine selection) on the prevailing wind axis from non-participating landowners' property lines and three rotor diameters (between 813 feet and 993 feet, depending on turbine selection) on the non-prevailing wind axis; this condition can be found in section 4.1 of the site permit. Pleasant Valley's proposed Project design must comply with the Minnesota Pollution Control Agency (PCA) noise standards pursuant to Minnesota Rules Chapter 7030. As a result, the impact of the proposed Project on human settlement and public health and safety will be minimal. Section 4.4 of the site permit contains conditions for setbacks from residences and roads. The proposed wind turbine layout will meet or exceed those requirements.

36. There will be no displacement of existing residences or structures in siting the wind turbines and associated facilities.

Noise

37. Background noise levels in the Project area are typical of those in a rural setting, where existing nighttime noise levels are commonly in the low to mid-30 dBA. The dBA scale represents A-weighted decibels based on the range of human hearing. Higher levels exist near roads and other areas of human activity.[62] Wind turbines, when in motion, generate sound or noise. The level of sound (noise) varies with the speed of the turbine and the distance of the listener or receptor from the turbine and surface characteristics of the site. Operation and maintenance of wind turbines and associated facilities will increase noise levels. However, increases in noise levels are expected to be minimal due to the noise levels produced by the wind itself.

38. Noise impacts to nearby residents and other potentially affected parties will be factored into the turbine micro-siting process. The Applicant must demonstrate the Project can meet the noise standard pursuant to Minnesota Statutes chapter 7030 (site permit, sections 5.1 and 6.6). Noise levels predicted by a noise modeling program will be compared to the PCA Daytime and Nighttime L_{10} and L_{50} Limits as stated in Minnesota Rule 7030.0040. These standards describe the limiting levels of sound established on the basis of present knowledge for the preservation of public health and welfare. These standards are consistent with speech, sleep, annoyance, and hearing conversation requirements for receivers within areas grouped according to land activities by the Noise Area Classification (NAC) system established in Minnesota Rule 7030.0050. The NAC-1 was chosen for receivers in the Project area since this classification includes farm houses as household units. The nighttime L_{50} limit of 50 dBA is the most applicable stringent state limit.

39. The Applicant analyzed noise for the GE 1.5 MW turbine with WindBOOST and the Siemens 2.3 MW turbine using CadnaA software, which implements the methods of the ISO 9613 and allows the creation of three-dimensional acoustical models.[63] According to the manufacturers' noise data, sound power levels measured at a 10 meter height for an

[62] *Id*. at 28.
[63] Exhibit 23.

80 meter hub height is 106 dBA for the GE turbine and 108 dBA for the Siemens turbine.[64] The Applicant applied a 2 dB margin of error to the GE turbine analysis. The modeling analysis used for both turbines assumed that the temperature was 10 degrees Celsius, the relative humidity was 70 percent, the ground absorption coefficient was 0.7, and the search radius was 5,000 meters.[65] Cumulative noise impacts resulting from multiple turbine strings were analyzed and maps are provided in Exhibit 23. The modeling conducted by the Applicant concluded that sound levels for both turbine layouts are expected to be below 50 dBA at all receptors.[66]

40. Section 6.6 of the site permit requires Pleasant Valley to conduct a post-construction noise study. The noise study will determine the noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds. The purpose of the post-construction noise study is to confirm the PCA noise standards have been met.

Shadow Flicker

41. The issue of shadow flicker was raised during both public comment periods.[67] Shadow flicker is described as a moving shadow on the ground resulting in alternating changes in light intensity. Shadow flicker computer models simulate the path of the sun over the year and assess at regular time intervals the possible shallow flicker across a project area. The outputs of the model are useful in the design phase of a wind farm. Generally, shadow flicker occurs in the morning and evening hours when the sun is low in the horizon and the shadows are elongated. Shadow flicker does not occur when the turbine rotor is oriented parallel to the receptor or when the turbine is not operating. In addition, no shadow flicker will be present when the sun seen from a receptor is obscured by clouds, fog, or other obstacles already casting a shadow such as buildings and trees.

42. Shadow intensity, or how "light" or "dark" a shadow appears at a specific receptor, will vary with the distance from the turbine. Closer to a turbine, the blades will block out a larger portion of the sun's rays and shadows will be wider and darker. Receptors located farther away from a turbine will experience much thinner and less distinct shadows since the blades will not block out as much sunlight. Shadow flicker will be greatly reduced or eliminated within a residence when buildings, trees, blinds, or curtains are located between the turbine and receptor. Shadow flicker consultants generally agree that flicker is not noticeable beyond about 10 rotor diameters from a wind turbine.[68] Evidence of health effects from shadow flicker is scant, suggesting that it is more of a nuisance issue. Minnesota has no published standards for shadow flicker and no examples of turbines causing photosensitivity related problems. Wisconsin is considering a shadow flicker standard of a maximum of 30 hours that would apply to non-participating residences and occupied community buildings, but those rules have not yet been formally adopted.

[64] *Id.*
[65] *Id.*
[66] *Id.*
[67] Exhibits 8, 9, and 22.
[68] Environmental Health Division, Minnesota Department of Health, *Public Health Impacts of Wind Turbines*, May 22, 2009, at 14, *available at* http://energyfacilities.puc.state.mn.us/documents/Public%20Health%20Impacts%20of%20Wind%20Turbines,%205.22.09%20Revised.pdf.

Several jurisdictions in other countries have established guidelines for acceptable levels of shadow flicker based on certain assumptions.

43. The Applicant filed its shadow flicker modeling summary, which is Exhibit 24. EAPC Architects and Engineers conducted shadow flicker modeling for the Project. Pleasant Valley is using a guideline of 1,500 feet setback from residences, and no residence will be closer than 1,000 feet from a wind turbine (see section 4.2 of the site permit). Non-participating residences will be setback 1,500 from turbines unless a waiver is signed by the landowner. Based on the consultant's experience conducting shadow flicker studies, the Applicant anticipates that shadow flicker is minimized by utilizing the 1,500 foot setback guideline from residences and the relatively dispersed nature of the turbines.[69] The shadow flicker modeling includes several conservative assumptions: all receptors are omni-directional (i.e., a greenhouse), all houses will have a direct view (i.e., without trees or buildings), and shadow flicker from wind turbines up to 6,562 feet was included even though shadow flicker will be a very low intensity beyond 3,281 feet.[70]

44. Less than 10 percent of the receptors using the Siemens layout and less than 12 percent of the receptors using the GE layout are expected to receive more than 10 hours per year of shadow flicker based on a realistic modeling scenario.[71] Most of these receptors will experience shadow flicker in increments up to 30 minutes per day.[72] Nearly half of the 1,508 receptors in the Project area will not be affected by shadow flicker or will receive less than one hour per year of shadow flicker under both turbine layouts.[73]

Visual Values

45. The placement of up to 188 GE 1.5 MW turbine with WindBOOST or 130 Siemens 2.3 MW turbines for the Pleasant Valley Wind Project will affect the appearance of the area. The wind turbines will be mounted on tubular towers that are approximately 262 feet tall. The rotor blades will have a diameter between 271 and 331 feet. The turbine towers and rotor blades will be prominent features on the landscape. There will be intermittent, expansive views of the turbines to passing motorists on Interstate 90, Trunk Highways 56 and 30, County Highway 7, and nearby roads.[74]

46. The visual impact of the wind turbines will be reduced by the use of a neutral paint color. The only lights will be those required by the Federal Aviation Administration (site permit, section 7.18). All site permits issued by the Commission require the use of tubular towers; therefore, the turbine towers will be uniform in appearance. Blades used in the proposed Project will be white or grey. The turbines and associated facilities necessary to harvest the wind for energy are not inconsistent with existing agricultural practices.

[69] Exhibit 24.
[70] *Id*.
[71] *Id*.
[72] *Id*.
[73] *Id*.
[74] Exhibit 1 at 33-34.

47. Wind facilities can be perceived as a visual intrusion on the natural aesthetic value on the landscape or having their own aesthetic quality. Existing wind facilities have altered the landscape elsewhere in Minnesota from agricultural to wind plant/agricultural. This Project will modify the visual character of the area. Numerous wind facilities already exist in Mower and Dodge counties. Further, wind generation development is likely to continue in Mower and Dodge counties.

48. Visually, the Pleasant Valley Wind Project will be similar to other LWECS projects located in the area.

Public Health and Safety

49. The Rochester International Airport, the Austin Municipal Airport, and the Dodge Center Municipal Airport are located in the vicinity of the Project.[75] A Federal Aviation Administration (FAA) "No-Hazard Determination" for this Project has yet to be issued. The Rochester International Airport is located 7.6 miles east of the Project, which is outside of defined safety zones, conical surface, and approach zones.[76] The Dodge Center Municipal Airport is located 3.7 miles northeast of the Project, which is outside the defined safety zones, conical surface, and approach zones.[77] The Austin Municipal Airport is located 4.5 miles southwest of the Project and the Applicant does not expect to interfere with the approaches or conical surfaces.[78] The city of Austin requested that the Applicant address any impacts that might occur to the Austin Municipal Airport as a result of the Project.[79] The Applicant will conduct aeronautical studies, in consultation with the FAA, prior to Project construction to determine if the proposed turbine locations will cause interference to the Dodge Center and Austin airports.[80] Section 4.12 of the site permit requires the Applicant to avoid placing wind turbines or associated facilities in a location that could create an obstruction to navigable airspace of public airports. The Applicant must comply with the requirements of the Minnesota Department of Transportation, Department of Aviation, and FAA (site permit, sections 10.5.1 and 4.12).

50. A review of the AirNav, LLC (AirNav 2009) database identified six airports within 20 miles of the town of Sargeant, which is roughly in the center of the Project area. There are no airports within the Project area. There are two airports just outside the Project boundary. The Scrabeck Airport is located approximately two miles from the boundary and Petes Airport is located approximately 1,500 feet from the boundary. The wind access buffer in section 4.1 of the site permit will be applied; therefore, a wind turbine will not be located closer than 813 feet from the Project boundary. Section 4.12 of the site permit requires the Applicant to avoid placing wind turbines or associated facilities in a location that could create an obstruction to navigable airspace of private airports as defined in rule as a restricted airport that could be privately or publicly owned, but the persons who may use the airport are determined by the owner of the airport.[81] An

[75] *Id*. at 36.
[76] *Id.* at 37.
[77] *Id.*
[78] *Id.*
[79] Exhibit 22.
[80] Exhibit 1 at 41.
[81] Minn. R. 8800.0100, subp. 24a.

obstruction would be any obstruction that would compromise the license of the private airport.[82] It is not known at this time if the Scrabeck Airport or the Petes Airport are private airports.

51. The addition of 130 to 188 wind turbines in active croplands and two permanent free standing meteorological towers increase the potential for collisions with crop-dusting aircraft. The turbines would be visible from a distance and lighted according to FAA requirements (see section 7.18 of the site permit). The two permanent meteorological towers will be free standing and have lighting consistent with the turbines. The Minnesota Aeronautical Chart produced by the Minnesota Department of Transportation is available and shows wind turbine locations throughout the state.

52. Possible health effects associated with wind turbines and transmission of electricity generally include those from electric and magnetic fields (EMF). The term EMF refers to electric and magnetic fields that are present around electrical devices. Electric fields arise from the voltage or electrical charges and magnetic fields arise from the flow of electricity or current that travels along transmission lines, power collection (feeder) lines, substation transformers, house wiring and electrical appliances. The intensity of the electric field is related to the voltage of the line and the intensity of the magnetic field is related to the current flow through the conductors (transmission line wire). Once energized, the proposed Project will generate electromagnetic fields.[83]

53. The proposed turbine layouts and high-voltage transmission lines will produce some level of EMFs, but will be similar to EMFs already present in the site from existing facilities.[84] As referenced in Finding 20, the transmission lines will be permitted locally, but the Applicant stated it will work with the appropriate agencies to ensure the transmission lines are installed along field edges or within road rights-of-way wherever possible.[85]

54. While there is no conclusive evidence that EMFs from power lines and wind turbines pose a significant health impact, the turbines will be installed no closer than 1,000 feet from residences, where EMFs are expected to be at background levels. Based on the most current research on EMFs, and the distance between any turbines or collector lines and homes, the proposed Project is not anticipated to have significant impact to public health and safety due to EMFs.

55. In winter months ice may accumulate on the wind turbine blades when the turbines are stopped or operating very slowly. Furthermore, the anemometer may ice up at the same time, causing the turbine to shut down during any icing event. As weather conditions change, any ice will normally drop off the blades in relatively small pieces before the turbines resume operation. This is due to flexing of the blades and the blades' smooth surface. Although turbine icing is an infrequent event, it remains important that the turbines are not sited in areas where regular human activity is expected below the

[82] *See* Minn. R. 8800.1900, subp. 5.
[83] Exhibit 1 at 49.
[84] *Id*.
[85] *Id*.

turbines during the winter months. The turbine setbacks from residences and roads will minimize impacts from ice throw (see sections 4.2 and 4.4 of the site permit).

56. The Applicant will prepare an emergency response plan (fire protection and medical emergency plan) in consultation with the emergency responders having jurisdiction over the Project area (site permit, section 7.16). As with any large construction project, some risk of worker or public injury exists during construction. Pleasant Valley and its construction representatives and workers will prepare and implement work plans and specifications in accordance with applicable worker safety requirements during construction of the Project. Pleasant Valley will also control public access to the Project during construction and operation. Pleasant Valley will provide security during construction and operation of the Project, including fencing, warning signs, and locks on equipment and facilities. The Applicant will also provide landowners, interested persons and public officials and emergency responders with safety information about the Project and its facilities (see site permit, sections 7.15 and 7.16).

57. Each turbine will be clearly labeled to identify each unit and a map of the site with the labeling system will be provided to local authorities as part of the emergency response plan (site permit, sections 7.17 and 7.16).

Public Services and Infrastructure

58. The proposed Project is expected to have minimal effects on existing public infrastructure. The proposed Project would not generate an increase in traffic volumes or daily human activity, except for a short period of time during construction and occasionally during operation and maintenance activities. The construction contractor will repair any road damage that may occur during the construction of the Project (see site permit, section 7.8).

59. Other than short-term impacts, no significant permanent changes in road traffic patterns or volume are expected. The busiest traffic would occur when the majority of the foundation and tower assembly is taking place. Township and county officials will receive advance notice of the construction schedule at the pre-construction meeting, including the timing of the delivery of towers and turbines and arrival of the crane to erect project equipment (site permit, section 5.6). Pleasant Valley will work with all parties involved to address concerns related to roadway use, and adhere to state, county, and township requirements for transportation infrastructure.

60. Construction of the proposed Project requires the addition of access roads that will be located on private property. Access roads would be built adjacent to the turbine towers, allowing access both during and after construction. The access roads will be sited in consultation with local landowners and completed in accordance with specified design requirements, and will be located to facilitate both construction (e.g., cranes) and continued operation and maintenance. Siting roads in areas with unstable soil will be avoided wherever possible. Roads may include appropriate drainage and culverts while still allowing for the crossing of farm equipment. The permanent access roads would

comprise between 32 and 42 miles, depending on turbine selection.[86] All access roads will be designed to accommodate heavy loads and large cranes that are needed to construct and maintain the turbines.[87] Local requirements would be followed wherever access roads join state or local roadways. During construction only, temporary access roads will be approximately 36 feet wide to accommodate delivery of turbines, towers, and other related equipment.[88] Once construction is completed, the roads will be re-graded, filled, and dressed as needed.

61. If access roads are installed across streams or drainage ways, the Applicant in consultation with Minnesota Department of Natural Resources, will design, shape, and locate the road so as not to alter the original water flow or drainage patterns. Any work required below the ordinary high water line, such as road crossings or culvert installation, will require a permit from Minnesota Department of Natural Resources. See section 10.5 of the site permit for a list of other permits that may be required.

62. There is a major natural gas pipeline operated by Northern Natural Gas Company in the northern portion of the Project area.[89] The Project is not expected to impact the pipeline. To avoid impacts to the pipeline, all construction work within the right-of-way or heavy equipment crossing will be completed after an Encroachment Agreement or Encroachment Permit is obtained.[90]

63. There are two existing high-voltage transmission lines (161 kV and 345 kV) that cross the Project area.[91] The Applicant will not impact electrical services.[92]

64. The proposed Project will have approximately 149 miles of underground 34.5 kV electrical collector lines within the Project.[93] The underground lines will be installed in a trench or bored beneath roadways, pipelines, protected water, and sensitive natural areas at a minimum of five feet deep.[94] The buried lines that are laid in trenches will be bedded in sand or fine gravel before backfilled by native soils.[95] In cropland areas with agricultural drain tile, the depth of the underground lines will be below the depth of the existing drain tiles.[96] Drain tiles will be identified prior to construction to minimize damage.[97] Any damage that does occur will be repaired to the satisfaction of the landowner during construction.[98] Placement of collector and feeder lines is addressed in the site permit at section 4.15. The proposed Project is expected to have a minimal effect on the existing infrastructure.

---

[86] *Id*. at 19.
[87] *Id*.
[88] *Id*.
[89] *Id*. at Map 9.
[90] *Id*. at 40.
[91] *Id*. at 35.
[92] *Id*. at 40.
[93] *Id*. at 18.
[94] *Id*.
[95] *Id.*
[96] *Id*.
[97] *Id.*
[98] *Id*.

65. Prior to construction, Gopher State One Call will be contacted to locate underground facilities so they can be avoided. Further, section 7.15 of the site permit requires the Applicant to submit the location of all its underground cables and collector and feeder lines to Gopher State One Call. To the extent Project facilities cross or otherwise affect existing telephone lines or equipment, Pleasant Valley will make arrangements with applicable service providers to avoid interference with such facilities. There are two telephone and telecommunications operators within the Project area.[99]

66. No radio, television, or cellular communication towers are located in the Project area.[100] The presence or operation of the wind plant could potentially impact the quality of television reception in the area. Previous analysis on television reception issues indicates that in some cases new antennas or relocation of existing antennas can restore television signal strength reception. An analysis of television broadcast facilities found eight digital television and 19 FM broadcast facilities in addition to one authorized AM station within the Project area.[101] The Applicant will not operate the wind farm so as to cause microwave, radio, telephone, television, or navigation interference in violation of Federal Communications Commission regulations or other applicable law. If operation of the Project causes such interference, Pleasant Valley will take the steps necessary to correct the problem. Section 6.4 of the site permit requires the Applicant to submit a plan to conduct an assessment of television signal reception and microwave signal patterns in the Project area.

67. There are five active microwave beam paths in the Project area.[102] There is also one proposed microwave beam path by Mower County.[103] Updated turbine maps at Exhibit 17 show the proposed microwave beam path in addition to the active microwave beam paths. The Applicant's consultant recommends that turbine should not be sited within a distance to the centerline of any microwave path equal to the sum of the Fresnel Zone distance and the blade radius. The blade radius for the GE turbine is 40 meters and the blade radius for the Siemens turbine is 50.5 meters.[104] The Applicant will locate turbines to avoid interference with active and proposed microwave beam paths.[105]

68. Construction, operation, and maintenance of the proposed wind plant will comply with all of the required federal, state, and local permit requirements. See section 10.5 of the site permit.

Recreational Resources

69. There are no Wildlife Management Areas (WMAs) or Wildlife Production Areas (WPAs) within one-mile of the Project area.[106]

[99] *Id*. at 36.
[100] *Id*. at 35.
[101] *Id*. at 36.
[102] *Id.* at 36.
[103] Exhibit 8.
[104] Exhibit 1 at 36.
[105] *See* exhibit 1 at 36 and exhibit 17.
[106] Exhibit 1 at 46.

70. There is one Scientific and Natural Area (SNA) within the Project area and one SNA that adjoins the Project.[107] The 35-acre Iron Horse Prairie SNA is adjacent to the Project and is located within two miles south of Hayfield on Minnesota Highway 56 and one half mile east on County Road M in Dodge County. The Iron Horse Prairie SNA is a triangular shaped site with high species diversity and is the largest example of contiguous mesic tall grass prairie in southeast Minnesota.[108]

71. The 145-acrea Wild Indigo Prairie SNA is a linear SNA that extends from Ramsey to Dexter though the Project area and located along a 12-mile strip of abandoned railroad right-of-way in Mower County.[109] Similar to the Iron Horse Prairie SNA, this SNA is one of the few mesic tall grass prairie remnants located in southeast Minnesota.[110] Due to the prevailing wind direction, wind turbines will not be located closer than five rotor diameters from the Wild Indigo Prairie SNA. Initial turbine layout maps included in the application did not reflect this setback. Exhibit 17 shows updated turbine layout maps that include the setback to the Wild Indigo Prairie SNA. Setbacks from SNAs are found at sections 4.1 and 4.5 of the site permit.

72. The Applicant intends to cross the Wild Indigo Prairie SNA with its underground collector or feeder lines within a public road right-of-way. The Applicant will secure any necessary permits to cross over, under, or across state lands.[111] Section 10.5 of the site permit addresses other permits that may be required as part of constructing a wind facility.

73. There are four grant-in-aid snowmobile trails that cross the Project area.[112] As requested by the Minnesota Department of Natural Resources, Pleasant Valley will coordinate with the trail contacts regarding trail locations and expects to be a sufficient distance from trails, as they vary from year to year, to protect trail users from hazards such as falling ice.[113]

74. While there are public waters within the Project area, none are believed to have significant recreational resources for fishing, swimming, or boating, and they are utilized principally as drainage conveyance for agricultural cropland.[114]

75. There are no local, county, state, or federal parks or recreational areas within the Project area. [115]

Community Benefits

76. Pleasant Valley will pay a Wind Energy Production Tax to the county and townships each year, which is expected to be approximately $1.3 million per year.[116] Landowners

[107] *Id.*
[108] *Id.*
[109] *Id.*
[110] *Id.*
[111] *Id.*
[112] *Id.* at 58.
[113] *See* exhibit 20.
[114] Exhibit 1 at 47.
[115] *Id.*

with wind turbines on their property will also receive payments from the Applicant. The Project is expected to create new job opportunities within the local community, both during construction and operation.

Effects on Land-Based Economies

77. The proposed Project will permanently impact up to 160 acres of cropland and pastureland for the construction of wind turbine structures, access roads, and associated infrastructure.[117] Up to 187 acres will be temporarily impacted due to construction activities associated with the Project (e.g. grading, soil compaction, access roads, turn around areas, and temporary construction staging areas).[118] Overall, impact to agricultural lands as a result of the Project is anticipated to be short term, and is not expected to alter crop production. Once in operation, it may be occasionally necessary for Pleasant Valley to complete repairs or clear vegetation around a turbine or facility, which could result in additional temporary impacts to agricultural operations. These interruptions are expected to be infrequent and short term.

78. The wind turbines and access roads will be located so that the most productive farmland will be left as intact as possible. However, on average each turbine and all associated access roads will permanently displace approximately 0.5 to 1.0 acre of agricultural land. The Applicant has stated it will compensate the affected landowner for any temporary impact or loss of growing crops, reclaim any cropland areas temporarily disturbed, repair drain tile damage in accordance with specific landowner agreements, and negotiate permanent loss of cropland for service roads and other associated facilities with the affected landowners.[119] Section 7 of the site permit addresses mitigation measures for agricultural lands.

79. The proposed Project does not adversely affect any sand or gravel operations.

80. Pleasant Valley will avoid impacts to Reinvest in Minnesota (RIM) land and will minimize impacts to Conservation Reserve Program (CRP) land to the extent possible. Exhibit 26 shows a map of RIM and CRP land.

Archaeological and Historical Resources

81. A review of the Minnesota State Historic Preservation Office (SHPO) computer database did not identify any archeological sites within the Project area.[120] However, three Native American sites are present within one mile of the Project area.[121] Thirteen historic structures have been identified within the Project area and four historic structures within

[116] *Id*. at p. 27 (note that the application inadvertently stated annual energy production tax revenues for 150 MW instead of 301 MW, so the figure was doubled).
[117] *Id*. at 56.
[118] *Id*.
[119] *Id*. at 57-58.
[120] *Id*. at 41.
[121] *Id*. at 41 – 43.

one mile of the Project area.[122] These sites include churches, schools, town halls, general stores, homesteads, barns, and warehouses.[123]

82. An archaeology survey is recommended for all the proposed turbine locations, access roads, junction boxes, and other areas of Project construction impact to document any previously unrecorded archaeological sites within the Project site. Section 6.3 of the site permit requires the Applicant to conduct an archaeological reconnaissance survey (Phase I). A Phase I archaeology survey consists of the following tasks: consultation, documentation, and identification. A Phase I survey provides enough information to allow consideration of avoidance if a site is to be impacted by an undertaking and to gather enough information to allow for reasonable recommendations for more detailed work should it be necessary. At the time the Applicant submitted its application, the Phase I survey was in progress.[124]

83. If any archaeological sites are found during the Phase I survey, their integrity and significance should be addressed in terms of the site's potential eligibility for placement on the National Register of Historic Places (NRHP). If such sites are found to be eligible for the NRHP, appropriate mitigative measures will need to be developed in consultation with the SHPO, the State Archaeologist, and consulting American Indian communities. Section 6.3 of the site permit also requires the Applicant to stop work and notify the SHPO and the Commission if any unrecorded cultural resources are found during construction.

Air and Water Emissions

84. No harmful air or water emissions are expected from the construction and operation of the Project.

Wildlife

85. More than 98 percent of the Project area is used for agricultural purposes with cropland comprising a significant portion of the vegetative cover.[125] Wildlife habitat impacts are expected to be minimal because turbines and access roads will be placed exclusively on agricultural land. With proper planning, neither construction nor operation of the Project is expected to have a significant impact on wildlife. 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.

86. According to the Applicant, the Project is not within a migratory flyway and use of the area by migratory birds is limited.[126] The Applicant is currently conducting an avian survey for the Project and impacts to bats will be determined upon completion of a desktop and field analysis.[127] Section 13.2 of the site permit requires the Applicant to

[122] *Id.* at 43.
[123] *Id.*
[124] *Id.* at 44.
[125] *Id.* at 65.
[126] *Id.*
[127] *Id.*

submit the results of its avian and bat surveys at least 30 days prior to the pre-construction meeting and document how those results will be used to inform the micro-siting process. Data from the Natural Heritage Information System (NHIS) and the North American Breeding Bird Survey (BBS) indicate that the threatened loggerhead shrike may be present in the Project area.[128] Avian impacts will be determined after the avian surveys have been completed for the Project area.[129]

87. Section 6.7 of the site permit requires the Applicant to prepare an avian and bat protection plan, submit quarterly avian and bat reports, and report five or more dead or injured non-protected avian or bat species or a single dead or injured migratory, state threatened, endangered, species of special concern, or federally listed species discovered in the vicinity of the rotor swept area within 24 hours of discovery. Section 6.1 requires the Applicant to conduct pre-construction desktop and field inventories of potentially impacted, if any, native prairies, wetlands, and any other biologically sensitive areas within the site and assess the presence of state threatened, endangered, or species of special concern or federally listed species. Section 6.1 also requires the Applicant to submit any biological survey or studies conducted. Section 4.5 requires that turbines and associated facilities will not be constructed in wildlife management areas, state scientific and natural areas, or parks and a setback of five rotor diameter in the prevailing wind and three rotor diameter in the non-prevailing wind is applied to such public lands.

Rare and Unique Natural Resources

88. Some rare species have been recorded near the Project area.[130] The NHIS identified several rare vascular plants, which are listed as either endangered or threatened species, most likely to occur within the Project area's native prairie remnants.[131] Prairie remnants are likely in publicly owned areas, such as road rights-of-way, or protected areas, such as the SNAs.[132] Section 4.7 of the site permit requires the Applicant to prepare a prairie protection and management plan if native prairie could be impacted.

89. Based on NHIS review, the threatened loggerhead shrike has been observed in the vicinity of the Project area.[133] The Applicant will be required to submit studies or surveys (site permit, sections 6.1 and 13.2) and, as discussed in Finding 87, is currently conducting such avian and bat studies. Also identified in the Project area is the threatened Blanding's turtle and species of special concern, Ozark minnows and the creek heelsplitter.[134] Section 13.1 of the site permit contains a special condition that requires Pleasant Valley to follow the recommendations in the fact sheet prepared by the Department of Natural Resources for avoiding and minimizing impacts to the Blanding's turtle and distribute a summary of the recommendations to contractors and its employees.

[128] *Id.* at 66.
[129] *Id*. at 67.
[130] *Id*. at 69.
[131] *Id.*
[132] *Id.*
[133] *Id.*
[134] *Id.*

Vegetation

90. No public waters, wetlands, or forested land are expected to be adversely affected by the Project. No groves of trees or shelterbelts will need to be removed to construct and operate the system. Native prairie will also be avoided. As discussed in Finding 88, section 4.7 of the site permit will require a prairie protection and management plan if native prairie could be impacted.

Soils

91. The site permit has requirements to implement sound water and soil conservation practices during construction and operation of the Project in order to protect topsoil and adjacent resources and to minimize soil erosion. The Project will be subject to the requirements of the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) stormwater permit for construction activity. An erosion and sediment control plan and Storm Water Pollution Prevention Plan (SWPPP) will also be prepared for the Project and the disturbed areas will be seeded after construction to stabilize the area (site permit, section 7.11).

Geologic and Ground Water Resources

92. The Project area is relatively flat, partially tiled farmland. Turbines will be located on topographically elevated uplands, and are not expected to affect streams, surface water bodies or floodplains. The Project area is served by an extensive network of state, county, and township roads, which will provide site access and egress. Local groundwater resources are provided by wells into bedrock aquifers that range from 150 to 350 feet deep with a few high volume wells extending up to 900 feet deep.[135] Based on the proposed site layouts, no impacts to streams, wetlands, floodplains, or shorelands are anticipated. Impacts to geologic and groundwater resources are not anticipated.

Surface Water and Wetlands

93. Wind turbines and associated facilities will not be located in public water wetlands, except that collector and feeder lines may cross if authorized by the appropriate permitting agency (site permit, section 4.6). A permit may be required if surface waters are impacted (see section 10.5.1 of the site permit). A wetland delineation report will be completed to determine all wetland boundaries adjacent to areas of proposed turbine locations.[136]

Future Development and Expansion

94. Current information suggests windy areas in this part of the state are large enough to accommodate more wind facilities. In addition to existing wind projects, the future will likely bring Mower and Dodge and surrounding counties additional types and sizes of wind projects supplied by different vendors and installed at different times. The

[135] *Id.* at 61.
[136] *Id.* at 63.

Applicant has indicated that it is considering Dodge County for future development, but if such a project is proposed, a separate site permit would have to be obtained in order to construct the project.[137]

95. While large-scale projects have occurred elsewhere (Texas, Iowa, and California), little systematic study of the cumulative impact has occurred. Research on the total impact of many different projects in one area has not occurred. OES EFP staff will continue to monitor for impacts and issues related to wind energy development.

96. The Commission is responsible for siting of LWECS "in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources."[138] Section 4.1 of the site permit provides for buffers between adjacent wind generation projects to protect wind production potential.

Maintenance

97. Maintenance of the turbines will be on a scheduled, rotating basis with one or more units normally off for maintenance each day, if necessary. Maintenance on the interconnection points will be scheduled for low wind periods. Pleasant Valley will have on-site service and maintenance activities, including routine inspections, regular preventive maintenance, unscheduled maintenance and repair, and routine minor maintenance on the wind turbines and associated facilities. The operations and maintenance facility will be permitted by Mower County.

Decommissioning and Restoration

98. The existing easement agreements between the Applicant and landowners require that all above ground wind Project facilities be removed from the Project site within one year of the expiration of the easement term.[139] This agreement also requires all physical improvements be removed if they are within three feet of final grade at the termination of the agreement.[140] Section 9.2 of the site permit requires removal of wind facilities to a depth of four feet and restoration and reclamation of the site to the extent feasible. The Project site would be restored within 18 months after Project expiration.

99. Decommissioning activities will include: (1) removal of all wind turbine components and towers; (2) removal of all pad mounted transformers; (3) removal of overhead and underground cables and lines; (4) removal of foundations; and (5) removal of surface road material and restoration of the roads and turbine sites to previous conditions to the extent feasible.

100. As provided in section 9.1 of the site permit, the Applicant will ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the Project at the appropriate time. Section 9.1 requires the applicant to submit a Decommissioning Plan to the Commission prior to the pre-operation compliance

[137] Exhibit 10 (Applicant letter in response to Dodge County comments).
[138] Minn. Stat. § 216F.03.
[139] Exhibit 1 at 82.
[140] *Id*.

meeting. In addition to any requirements under the site permit, each individual land lease requires proper decommissioning of turbines. The owner will be responsible for costs to decommission the Project and associated facilities.

Site Permit Conditions

101. All of the above findings pertain to the Applicant's requested permit for a 301 MW LWECS project.

102. Most of the conditions contained in the site permit were established as part of the site permit proceedings of other wind turbine projects permitted by the Environmental Quality Board and the Public Utilities Commission. Comments received by the Commission have been considered in development of the site permit. Minor changes and special condition additions that provide for clarification or additional requirements have been made.

103. The site permit contains conditions that apply to site preparation, construction, cleanup, restoration, operation, maintenance, abandonment, decommissioning, and all other aspects of the Project.

Based on the foregoing findings, the Minnesota Public Utilities Commission makes the following:

CONCLUSIONS OF LAW

1. Any of the foregoing findings, which more properly should be designated as conclusions, are hereby adopted as such.

2. The Minnesota Public Utilities Commission has jurisdiction over this matter pursuant to Minnesota Statutes section 216F.04.

3. The Applicant has substantially complied with the procedural requirements of Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854.

4. The Minnesota Public Utilities Commission has complied with all procedural requirements required of Minnesota Statutes chapter 216F and Minnesota Rules chapter 7854.

5. The Minnesota Public Utilities Commission has considered all the pertinent factors relative to its determination of whether a site permit should be approved.

6. The Pleasant Valley Wind Project is compatible with the policy of the state to site LWECS in an orderly manner compatible with environmental preservation, sustainable development, and the efficient use of resources under Minnesota Statutes section 216F.03.

7. The Minnesota Public Utilities Commission has the authority under section 216F.04 to place conditions in a permit and may deny, modify, suspend, or revoke a permit. The conditions in the site permit are reasonable and appropriate.

Based on the foregoing Findings of Fact and Conclusions of Law, the Minnesota Public Utilities Commission issues the following:

ORDER

A LWECS Site Permit is hereby issued to Pleasant Valley Wind, LLC to construct and operate the up to 301 MW Pleasant Valley Wind Project in Dodge and Mower counties in accordance with the conditions contained in the site permit and in compliance with the requirements of Minnesota Statutes section 216F.04 and Minnesota Rules chapter 7854 for PUC Docket No. IP-6828/WS-09-1197.

The site permit is attached hereto, with maps showing the approved site and preliminary turbine layouts.

BY THR ORDER OF THE COMMISSION

_____

Burl W. Haar
Executive Secretary

This document can be made available in alternative formats (i.e., large print or audio) by calling 651-296-0406 (voice). Persons with hearing or speech disabilities may call us through Minnesota Relay at 1-800-627-3529 or by dialing 711.

STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

LARGE WIND ENERGY CONVERSION SYSTEM SITE PERMIT FOR THE PLEASANT VALLEY WIND PROJECT

IN DODGE AND MOWER COUNTIES

ISSUED TO PLEASANT VALLEY WIND, LLC

PUC DOCKET NO. IP-6828/WS-09-1197

In accordance with Minnesota Statutes section 216F.04 this site permit is hereby issued to:

Pleasant Valley Wind, LLC

Pleasant Valley Wind, LLC is authorized to construct and operate up to a 301 Megawatt Large Wind Energy Conversion System on the site identified in this site permit and in compliance with the conditions contained in this permit.

This permit shall expire thirty (30) years from the date of this approval.

Approved and adopted this 27th day of October 2010

BY ORDER OF THE COMMISSION

BURL W. HAAR
Executive Secretary

This document can be made available in alternative formats (i.e., large print or audio) by calling 651-296-0406 (voice). Persons with hearing or speech disabilities may call us through Minnesota Relay at 1-800-627-3529 or by dialing 711.

Table of Contents

SITE PERMIT

This **SITE PERMIT** for a Large Wind Energy Conversion System (LWECS) authorizes Pleasant Valley Wind, LLC ("Permittee") to construct and operate the Pleasant Valley Wind Project ("Project"), up to a 301 Megawatt (MW) nameplate capacity LWECS and associated facilities in Dodge and Mower counties, on a site of approximately 70,000 acres in accordance with the conditions contained in this permit.

SECTION 1
PROJECT DESCRIPTION

The up to 301 MW nameplate capacity LWECS authorized to be constructed in this permit will be developed and constructed by the Permittee. The Project will consist of up to 188 General Electric 1.5 MW wind turbine generators with WindBOOST Control System on 262.5 foot (80 meter) towers with a rotor diameter of 270 feet (82.5 meters) or 130 Siemens 2.3 MW wind turbine generators on 262.5 foot (80 meter) towers with a rotor diameter of 331 feet (101 meters) having a combined nominal nameplate capacity of approximately 301 MW. Associated facilities will include wind turbine access roads, underground electrical collection system, SCADA wiring, feeder or collector lines, pad mounted turbine transformers, and up to two meteorological towers. Power will ultimately be delivered to the existing Pleasant Valley Substation.

SECTION 2
DESIGNATED SITE

2.1 PROJECT BOUNDARY

The Project boundary is shown on the map at Attachment 1**.** The Project is located in Mower and Dodge counties, in the townships of Hayfield (sections 31, 34) and Vernon (Section 31) in southern Dodge County and in the townships of Waltham (sections 1, 3, 10-15, 25, 26, 36), Sargeant (sections 3, 6-12, 15-20, 24, 25, 27-29, 32-34, 36), Pleasant Valley (sections 9, 10, 16-18), Red Rock (sections 1, 2, 11-13, 15, 24-26), and Dexter (sections 2-6, 8-11, 17-23, 26-30) in northern Mower County.

2.2 TURBINE LAYOUT

Two preliminary wind turbine and associated facility layouts are shown on maps at Attachments 1A and 1B. Each preliminary layout represents the approximate location of wind turbines and associated facilities within the Project boundary and identifies a layout that minimizes the overall potential human and environmental impacts, which were evaluated in the permitting process. The final layout depicting the location of each wind turbine and associated facility shall be located within the Project boundary. The Project boundary serves to provide the Permittee with the flexibility to do minor adjustments to the preliminary layout to accommodate landowner requests, unforeseen conditions encountered during the detailed engineering and design process, and federal and state agency requirements. Any modification of the location of a wind turbine and associated facility to a preliminary layout shall be done in such a manner to have comparable overall human and environmental impacts and shall be specifically identified in the site plan

pursuant to Section 5.1. The Permittee shall submit the final site layout in the site plan pursuant to Section 5.1.

SECTION 3
APPLICATION COMPLIANCE

The Permittee shall comply with those practices set forth in its second revised site permit application, dated February 5, 2010, and the record of this proceeding unless this permit establishes a different requirement in which case this permit shall prevail.

SECTION 4
SETBACKS AND SITE LAYOUT RESTRICTIONS

4.1 WIND ACCESS BUFFER

Wind turbine towers shall not be placed less than five (5) rotor diameters (RD) on the prevailing wind directions and three (3) RD on the non-prevailing wind directions from the perimeter of the property where the Permittee does not hold the wind rights, without the approval of the Commission. This section does not apply to public roads and trails.

4.2 RESIDENCES

In no case shall a wind turbine be located closer than 1,000 feet to a residence. Wind turbine towers shall not be located closer than 1,000 feet from residences of participating landowners or the distance required to comply with the noise standards pursuant to Minnesota Rule 7030.0040 established by the Minnesota Pollution Control Agency (PCA), whichever is greater.

Wind turbine towers shall not be located closer than 1,500 feet from residences of non-participating landowners unless a waiver has been signed by the property owner(s) or the distance required to comply with the noise standards pursuant to Minnesota Rule 7030.0040 established by the PCA, whichever is greater.

4.3 NOISE

The wind turbine towers shall be placed such that the Permittee shall comply with noise standards established as of the date of this permit by the PCA at all times at all appropriate locations. The noise standards are found in Minnesota Rules chapter 7030. Turbine operation shall be modified or turbines shall be removed from service if necessary to comply with these noise standards. The Permittee or its contractor may install and operate turbines, as close as the minimum setback required in this permit, but in all cases shall comply with PCA noise standards. The Permittee shall be required to comply with this condition with respect to all homes or other receptors in place as of the time of construction, but not with respect to such receptors built after construction of the towers.

4.4 ROADS

Wind turbine and meteorological towers shall not be located closer than 250 feet from the edge of the nearest public road right-of-way.

4.5 PUBLIC LANDS

Wind turbines and associated facilities including foundations, access roads, underground cable, and transformers, shall not be located in public lands, including Waterfowl Production Areas, Wildlife Management Areas, Scientific and Natural Areas, or in county parks, and wind turbine towers shall also comply with the setbacks of Section 4.1.

4.6 WETLANDS

Wind turbines and associated facilities including foundations, access roads, underground cable, and transformers, shall not be placed in public waters wetlands, as defined in Minnesota Statutes section 103G.005, subdivision 15a, except that electric collector or feeder lines may cross or be placed in public waters or public waters wetlands subject to permits and approvals by the Minnesota Department of Natural Resources (DNR) and the United States Army Corps of Engineers (USACE).

4.7 NATIVE PRAIRIE

Wind turbines and associated facilities, including foundations, access roads, collector and feeder lines, underground cable, and transformers, shall not be placed in native prairie, as defined in Minnesota Statutes section 84.02, subdivision 5, unless addressed in a prairie protection and management plan. The Permittee shall, with the guidance of the Commission and DNR, prepare a prairie protection and management plan and submit it to the Commission and DNR Commissioner at least ten (10) working days prior to the pre-construction meeting if native prairie could be impacted. The plan shall address steps to avoid impacts to native prairie and mitigation to unavoidable impacts to native prairie by restoration or management of other native prairie areas that are in degraded condition, by conveyance of conservation easements, or by other means agreed to by the Permittee and Commission. Wind turbines and associated facilities including foundations, access roads, collector and feeder lines, underground cable, and transformers shall not be located in areas enrolled in the Native Prairie Bank Program.

4.8 SAND AND GRAVEL OPERATIONS

Wind turbines and all associated facilities, including foundations, access roads, underground cable, and transformers shall not be located within active sand and gravel operations, unless otherwise negotiated with the landowner with notice given to the owner of the sand and gravel operation.

4.9 WIND TURBINE TOWERS

Structures for wind turbines shall be self-supporting tubular towers. The towers may be up to 80 meters (262.5 feet).

4.10 TURBINE SPACING

The turbine towers shall be constructed within the site boundary as shown in Attachment 1. The turbine towers shall be spaced no closer than three (3) RD in the non-prevailing wind directions

and five (5) RD on the prevailing wind directions. If required during final micro-siting of the turbine towers to account for topographic conditions, up to 20 percent of the towers may be sited closer than the above spacing but the Permittee shall minimize the need to site the turbine towers closer.

4.11 METEOROLOGICAL TOWERS

Permanent towers for meteorological equipment shall be free standing. Permanent meteorological towers shall not be placed less than 250 feet from the edge of the nearest public road right-of-way and from the boundary of the Permittee's site control, or in compliance with the county ordinance regulating meteorological towers in the county the tower is built, whichever is more restrictive. Meteorological towers shall be placed on property the Permittee holds the wind or other development rights.

Meteorological towers shall be marked as required by the Federal Aviation Administration (FAA). There shall be no lights on the meteorological towers other than what is required by the FAA. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

4.12 AVIATION

The Permittee shall not place wind turbines or associated facilities in a location that could create an obstruction to navigable airspace of public and private airports (as defined in Minnesota Rule 8800.0100, subparts 24a and 24b) in Minnesota, adjacent states, or provinces. The Permittee shall apply the minimum obstruction clearance for private airports pursuant to Minnesota Rule 8800.1900, subpart 5. Setbacks or other limitations shall be followed in accordance with the Minnesota Department of Transportation (DOT), Department of Aviation, and the FAA. The Permitee shall notify owners of all known airports within six (6) miles of the Project prior to construction.

4.13 FOOTPRINT MINIMIZATION

The Permittee shall design and construct the LWECS so as to minimize the amount of land that is impacted by the LWECS. Associated facilities in the vicinity of turbines such as electrical/electronic boxes, step-up transformers, and monitoring systems shall, to the greatest extent feasible, be mounted on the foundations used for turbine towers or inside the towers unless otherwise negotiated with the affected landowner(s).

4.14 COMMUNICATION CABLES

The Permittee shall place all supervisory control and data acquisition (SCADA) communication cables underground and within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner(s).

4.15 ELECTRICAL COLLECTOR AND FEEDER LINES

Collector lines that carry electrical power from each individual transformer associated with a wind turbine to an internal project interconnection point shall be buried underground. Collector lines shall be placed within or adjacent to the land necessary for turbine access roads unless otherwise negotiated with the affected landowner(s).

Feeder lines that carry power from an internal project interconnection point to the Project substation or interconnection point on the electrical grid may be overhead or underground. Feeder line locations shall be negotiated with the affected landowner(s).

Any overhead feeder lines that parallel public roads shall be placed within the public rights-of-way or on private land immediately adjacent to public roads. Overhead feeder lines located within public rights-of-way shall obtain approval from the governmental unit responsible for the affected right-of-way.

Collector and feeder line locations shall be located in such a manner to minimize interference with agricultural operations, including but not limited to existing drainage patterns, drain tile, future tiling plans, and ditches. Safety shields shall be placed on all guy wires associated with overhead feeder lines. The Permittee shall submit the engineering drawings of all collector and feeder lines in the site plan pursuant to Section 5.1.

The Permittee must fulfill, comply with, and satisfy all Institute of Electrical and Electronics Engineers, Inc. (IEEE) standards applicable to this Project, including but not limited to IEEE 776 [Recommended Practice for Inductive Coordination of Electric Supply and Communication Lines], IEEE 519 [Harmonic Specifications], IEEE 367 [Recommended Practice for Determining the Electric Power Station Ground Potential Rise and Induced Voltage from a Power Fault], and IEEE 820 [Standard Telephone Loop Performance Characteristics] provided the telephone service provider(s) have complied with any obligations imposed on it pursuant to these standards. Upon request by the Commission, the Permittee shall report to the Commission on compliance with these standards.

SECTION 5
ADMINISTRATIVE COMPLIANCE PROCEDURES

The following administrative compliance procedures shall be executed in accordance with the Permit Compliance Filings at Attachments 3 and 4.

5.1 SITE PLAN

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall submit to the Commission a site plan for all turbines, roads, electrical equipment, collector and feeder lines, and other associated facilities to be constructed and engineering drawings for site preparation, construction of the facilities, and a plan for restoration of the site due to construction. The Permittee may submit a site plan and engineering drawings for only a portion of the Project if the Permittee intends to commence construction on certain parts of the Project before completing the site plan and engineering drawings for other parts of the Project. The

Permittee shall document, through GIS mapping, compliance with the setbacks and site layout restrictions required by this permit, including compliance with the noise standards pursuant to Minnesota Rules chapter 7030. In the event that previously unidentified environmental conditions are discovered during construction, which by law or pursuant to conditions outlined in this permit would preclude the use of that site as a turbine site, the Permittee shall have the right to move or relocate turbine site. The Permittee shall notify the Commission of any turbines that are to be relocated before the turbine is constructed on the new site and demonstrate compliance with the setbacks and site layout restrictions required by this permit.

5.2 NOTICE TO LOCAL RESIDENTS

Within ten (10) working days of approval of this permit, the Permittee shall send a copy of the permit to the office of the auditor of each county in which the site is located and to the clerk of each city and township within the site boundaries. If applicable, the Permittee shall, within ten (10) working days of permit approval, send a copy of this permit to each regional development commission, local fire district, soil and water conservation district, watershed district, and watershed management district office with jurisdiction in the county where the site is located. Within thirty (30) days of approval of this permit, the Permittee shall send a copy of the permit to each landowner within the Project boundary. In no case shall the landowner receive this site permit and complaint procedure less than five (5) days prior to the start of construction on their property.

5.3 NOTICE OF PERMIT CONDITIONS

Prior to the start of construction, the Permittee shall inform all employees, contractors, and other persons involved in the construction and ongoing operation of the Project of the terms and conditions of this permit.

5.4 FIELD REPRESENTATIVE

At least ten (10) working days prior to the pre-construction meeting and continuously throughout construction, including site restoration, the Permittee shall designate a field representative responsible for overseeing compliance with the conditions of this permit during the construction phase of this Project. This person (or a designee) shall be accessible by telephone during normal working hours. This person's address, phone number, and emergency phone number shall be provided to the Commission, which may make the number available to local residents and officials and other interested persons. The Permittee may change the field representative by notification to the Commission.

5.5 SITE MANAGER

The Permittee shall designate a site manager responsible for overseeing compliance with the conditions of this permit during the commercial operation and decommissioning phases of this Project. The Permittee shall provide the Commission with the name, address, and phone number, and emergency phone number of the site manager prior to placing any turbine into commercial operation. This information shall be maintained current by informing the Commission of any changes, as they become effective.

5.6 PRE-CONSTRUCTION MEETING

Prior to the start of any construction, the Permittee shall conduct a pre-construction meeting with the Field Representative and the State Permit Manager designated by the Commission to coordinate field monitoring of construction activities.

5.7 PRE-OPERATION COMPLIANCE MEETING

At least ten (10) working days prior to commercial operation, the Permittee shall conduct a pre-operation compliance meeting with the Site Manager and the State Permit Manager designated by the Commission to coordinate field monitoring of operation activities.

5.8 COMPLAINTS

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall submit to the Commission the company's procedures to be used to receive and respond to complaints. The Permittee shall report to the Commission all complaints received concerning any part of the Project in accordance with the procedures provided in Attachments 2 and 3 of this permit.

SECTION 6
SURVEYS AND REPORTING

6.1 BIOLOGICAL AND NATURAL RESOURCE INVENTORIES

The Permittee, in consultation with DNR and other interested parties, shall conduct pre-construction desktop and field inventories of potentially impacted, if any, native prairies, wetlands, and any other biologically sensitive areas within the site and assess the presence of state threatened, endangered, or species of special concern or federally listed species. The results of any surveys shall be submitted to the Commission and DNR at least ten (10) working days prior to the pre-construction meeting to confirm compliance of conditions in this permit.

The Permittee shall provide to the Commission any biological surveys or studies conducted on this Project, including those not required under this permit.

6.2 SHADOW FLICKER

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall provide data on shadow flicker impacts on each residence of non-participating landowners and participating landowners. Information shall include the results of modeling used, assumptions made, and the anticipated levels of impact from turbine shadow flicker on each residence. The Permittee shall provide documentation on its efforts to minimize shadow flicker impacts.

6.3 ARCHAEOLOGICAL RESOURCES

The Permittee shall work with the State Historic Preservation Office (“SHPO”) and the State Archaeologist. The Permittee shall carry out a Phase 1 or 1A Archaeology survey for all proposed turbine locations, access roads, junction boxes, and other areas of Project construction

impact to determine whether additional archaeological work is necessary for any part of the proposed Project. The Permittee shall contract with a qualified archaeologist to complete such surveys, and shall submit the results to the Commission, the SHPO, and the State Archaeologist at least ten (10) working days prior to the pre-construction meeting.

The SHPO and the State Archaeologist will make recommendations for the treatment of any significant archaeological sites which are identified. Any issues in the implementation of these recommendations will be resolved by the Commission in consultation with SHPO and the State Archaeologist. In addition, the Permittee shall mark and preserve any previously unrecorded archaeological sites that are found during construction and shall promptly notify the SHPO, the State Archaeologist, and the Commission of such discovery. The Permittee shall not excavate at such locations until so authorized by the Commission in consultation with the SHPO and the State Archaeologist.

If human remains are encountered during construction, the Permittee shall immediately halt construction at that location and promptly notify local law enforcement authorities and the State Archaeologist. Construction at the human remains location shall not proceed until authorized by local law enforcement authorities or the State Archaeologist.

If any federal funding, permit, or license is involved or required, the Permittee shall notify the SHPO as soon as possible in the planning process to coordinate section 106 (36 C.F.R. part 800) review.

Prior to construction, construction workers shall be trained about the need to avoid cultural properties, how to identify cultural properties, and procedures to follow if undocumented cultural properties, including gravesites, are found during construction. If any archaeological sites are found during construction, the Permittee shall immediately stop work at the site and shall mark and preserve the site and notify the Commission and the SHPO about the discovery. The Commission and the SHPO shall have three (3) working days from the time the agency is notified to conduct an inspection of the site if either agency chooses to do so. On the fourth day after notification, the Permittee may begin work on the site unless the SHPO has directed that work shall cease. In such event, work shall not continue until the SHPO determines that construction can proceed.

6.4 INTERFERENCE

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall submit a plan to the Commission for conducting an assessment of television signal reception and microwave signal patterns in the Project area. The assessment shall be designed to provide data that can be used in the future to determine whether the turbines and associated facilities are the cause of disruption or interference of television reception or microwave patterns in the event residents should complain about such disruption or interference after the turbines are placed in operation. The assessment shall be completed prior to installation of the turbines. The Permittee shall be responsible for alleviating any disruption or interference of these services caused by the turbines or any associated facilities.

The Permittee shall not operate the Project so as to cause microwave, television, radio, telecommunications, or navigation interference in violation of Federal Communications Commission regulations or other law. In the event the Project or its operations cause such interference, the Permittee shall take timely measures necessary to correct the problem.

6.5 WAKE LOSS STUDIES

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall provide to the Commission the pre-construction micro-siting analysis leading to the final tower locations and an estimate of total Project wake losses. The Permittee shall provide to the Commission any operational wake loss studies conducted on this Project.

6.6 NOISE

The Permittee shall submit a proposal to the Commission at least ten (10) working days prior to the pre-operation compliance meeting for the conduct of a post-construction noise study. Upon the approval of the Commission, the Permittee shall carryout the study. The study shall be designed to determine the operating LWECS noise levels at different frequencies and at various distances from the turbines at various wind directions and speeds. The Permittee shall submit the study within eighteen (18) months after commercial operation.

6.7 AVIAN AND BAT PROTECTION PLAN

The Permittee shall prepare an Avian and Bat Protection Plan and submit it to the Commission at least ten (10) working days prior to the pre-construction meeting. The plan shall address steps to be taken to identify and mitigate impacts to avian and bat species during the construction phase and the operation phase of the Project. The plan shall also include formal and informal monitoring, training, wildlife handling, documentation (e.g., photographs), and reporting protocols for each phase of the Project.

The Permittee shall submit quarterly avian and bat reports to the Commission. Quarterly reports are due by the 15th of each January, April, July, and October commencing the day following commercial operation and terminating upon the expiration of this permit. Each report shall identify any dead or injured avian and bat species, location of find by turbine number, and date of find for the reporting period in accordance with the reporting protocols.

In the event that five or more dead or injured non-protected avian or bat species or a single dead or injured migratory, state threatened, endangered, species of special concern, or federally listed species are discovered in the vicinity of the rotor swept area, the Commission, United States Fish and Wildlife Services (USFWS), and DNR shall be notified within twenty-four (24) hours.

6.8 PROJECT ENERGY PRODUCTION

The Permittee shall submit a report no later than February 1st following each complete year of Project operation. The report shall include:

(a) The rated nameplate capacity of the permitted Project;

(b) The total monthly energy generated by the Project in MW hours;

(c) The monthly capacity factor of the Project;

(d) Yearly energy production and capacity factor for the Project;

(e) The operational status of the Project and any major outages, major repairs, or turbine performance improvements occurring in the previous year; and

(f) Any other information reasonably requested by the Commission.

This information shall be considered public and must be submitted electronically.

6.9 WIND RESOURCE USE

The Permittee shall, upon the request of the Commission, report to the Commission on the monthly energy production of the Project and the average monthly wind speed collected at one permanent meteorological tower selected by the Commission during the preceding year or partial year of operation.

The provisions of Section 11.7 shall apply to the Commission's review of data provided pursuant to this section.

6.10 EXTRAORDINARY EVENTS

Within twenty-four (24) hours of an occurrence, the Permittee shall notify the Commission of any extraordinary event. Extraordinary events include but shall not be limited to: fires, tower collapse, thrown blade, collector or feeder line failure, and injured LWECS worker or private person. The Permittee shall, within thirty (30) days of the occurrence, submit a report to the Commission describing the cause of the occurrence and the steps taken to avoid future occurrences.

SECTION 7
CONSTRUCTION AND OPERATION PRACTICES

7.1 SITE CLEARANCE

The Permittee shall disturb or clear the site only to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the LWECS.

7.2 TOPSOIL PROTECTION

The Permittee shall implement measures to protect and segregate topsoil from subsoil in cultivated lands unless otherwise negotiated with the affected landowner(s).

7.3 SOIL COMPACTION

The Permittee shall implement measures to minimize soil compaction of all lands during all phases of the Project's life and shall confine compaction to as small an area as practicable.

7.4 LIVESTOCK PROTECTION

The Permittee shall take precautions to protect livestock during all phases of the Project's life.

7.5 FENCES

The Permittee shall promptly replace or repair all fences and gates removed or damaged during all phases of the Project's life unless otherwise negotiated with the affected landowner(s). When the Permittee installs a gate where electric fences are present, the Permittee shall provide for continuity in the electric fence circuit.

7.6 DRAINAGE TILES

The Permittee shall take into account the location of drainage tiles during Project layout and construction. The Permittee shall promptly repair or replace all drainage tiles broken or damaged during all phases of the Project's life unless otherwise negotiated with the affected landowner(s).

7.7 EQUIPMENT STORAGE

The Permittee shall not locate temporary equipment staging areas on lands under its control unless negotiated with affected landowner(s). Temporary staging areas shall not be located in wetlands or native prairie as defined in Sections 4.6 and 4.7.

7.8 ROADS

7.8.1 PUBLIC ROADS

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall identify all state, county, or township roads that will be used for the Project and shall notify the Commission and the state, county, or township governing body having jurisdiction over the roads to determine if the governmental body needs to inspect the roads prior to use of these roads. Where practical, existing roadways shall be used for all activities associated with the Project. Where practical, all-weather roads shall be used to deliver cement, turbines, towers, assembled nacelles, and all other heavy components to and from the turbine sites.

The Permittee shall, prior to the use of such roads, make satisfactory arrangements with the appropriate state, county, or township governmental body having jurisdiction over roads to be used for construction of the Project for maintenance and repair of roads that will be subject to extra wear and tear due to transportation of equipment and Project components. The Permittee shall notify the Commission of such arrangements upon request of the Commission.

7.8.2 TURBINE ACCESS ROADS

The Permittee shall construct the least number of turbine access roads it can. Access roads shall be low profile roads so that farming equipment can cross them and shall be covered with Class five gravel or similar material. Access roads shall not be constructed across streams and drainage ways without required permits and approvals from the DNR, USFWS, and/or USACE. When access roads are constructed across streams and drainage ways, the access roads shall be designed in a manner so runoff from the upper portions of the watershed can readily flow to the lower portion of the watershed. Access roads shall also be constructed in accordance with all necessary township, county, or state road requirements and permits.

7.8.3 PRIVATE ROADS

The Permittee shall promptly repair private roads or lanes damaged when moving equipment or when obtaining access to the site, unless otherwise negotiated with the affected landowner(s).

7.9 CLEANUP

The Permittee shall remove all waste and scrap that is the product of construction, operation, restoration, and maintenance from the site and properly dispose of it upon completion of each task. Personal litter, bottles, and paper deposited by site personnel shall be removed on a daily basis.

7.10 TREE REMOVAL

The Permittee shall minimize the removal of trees and the Permittee shall not remove groves of trees or shelter belts without notification to the Commission and the approval of the affected landowner(s).

7.11 SOIL EROSION AND SEDIMENT CONTROL

The Permittee shall develop a Soil Erosion and Sediment Control Plan prior to construction and submit the Plan to the Commission at least ten (10) working days prior to the pre-construction meeting. This Plan may be the same as the Storm Water Pollution Prevention Plan (SWPPP) submitted to the PCA as part of the National Pollutant Discharge Elimination System (NPDES) permit application.

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 shall 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 shall identify methods for disposal or storage of excavated material. Erosion and

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

The Permittee shall develop an invasive species prevention plan to prevent the introduction of invasive species on lands disturbed by project construction activities. This requirement may be included as an element of the Soil Erosion and Sediment Control Plan.

7.12 RESTORATION

The Permittee shall, as soon as practical following construction of each turbine, considering the weather and preferences of the landowner, restore the area affected by any Project activities to the condition that existed immediately before construction began, to the extent possible. The time period may be no longer than twelve (12) months after completion of construction of the turbine, unless otherwise negotiated with the affected landowner(s). Restoration shall be compatible with the safe operation, maintenance, and inspection of the Project.

7.13 HAZARDOUS WASTE

The Permittee shall be responsible for compliance with all laws applicable to the generation, storage, transportation, clean-up, and disposal of hazardous wastes generated during any phase of the Project's life.

7.14 APPLICATION OF HERBICIDES

The Permittee shall restrict herbicide use to those herbicides and methods of application approved by the Minnesota Department of Agriculture and the U.S. Environmental Protection Agency. Selective foliage or basal application shall be used when practicable. The Permittee shall contact the landowner or his designee to obtain approval for the use of herbicide prior to any application on their property. The landowner may request that there be no application of herbicides on any part of the site within the landowner's property. All herbicides shall be applied in a safe and cautious manner so as to not damage property, including crops, orchards, tree farms, or gardens. The Permittee shall also, at least ten (10) working days prior to the application, notify beekeepers with an active apiary within one mile of the proposed application site of the day the company intends to apply herbicide so that precautionary measures may be taken by the beekeeper.

7.15 PUBLIC SAFETY

The Permittee shall provide educational materials to landowners within the site boundary and, upon request, to interested persons, about the Project and any restrictions or dangers associated with the Project. The Permittee shall also provide any necessary safety measures, such as warning signs and gates for traffic control or to restrict public access. The Permittee shall submit the location of all underground facilities, as defined in Minnesota Statutes section 216D.01, subdivision 11, to Gopher State One Call.

7.16 EMERGENCY RESPONSE

The Permittee shall prepare an emergency response plan (fire protection and medical emergency plan) in consultation with the emergency responders having jurisdiction over the area prior to LWECS construction. The Permittee shall submit a copy of the plan to the Commission at least ten (10) working days prior to the pre-construction meeting and a revised plan, if any, at least ten (10) working days prior to the pre-operation compliance meeting. The Permittee shall also register the LWECS with the local governments' emergency 911 services.

7.17 TOWER IDENTIFICATION

All turbine towers shall be marked with a visible identification number.

7.18 FEDERAL AVIATION ADMINISTRATION LIGHTING

Towers shall be marked as required by the FAA. There shall be no lights on the towers other than what is required by the FAA. This restriction shall not apply to infrared heating devices used to protect the wind monitoring equipment.

SECTION 8
FINAL CONSTRUCTION

8.1 AS-BUILT PLANS AND SPECIFICATIONS

Within sixty (60) days after completion of construction, the Permittee shall submit to the Commission a copy of the as-built plans and specifications. The Permittee must also submit this data in a GIS compatible format so that the Commission can place it into the Minnesota Geospatial Information Office's geographic data clearinghouse located in the Department of Administration.

8.2 FINAL BOUNDARIES

After completion of construction, the Commission shall determine the need to adjust the final boundaries of the site required for this Project. If done, this permit may be modified, after notice and opportunity for public hearing, to represent the actual site required by the Permittee to operate the Project authorized by this permit.

8.3 EXPANSION OF SITE BOUNDARIES

No expansion of the site boundaries described in this permit shall be authorized without the approval of the Commission. The Permittee may submit to the Commission a request for a change in the boundaries of the site for the Project. The Commission will respond to the requested change in accordance with applicable statutes and rules.

SECTION 9
DECOMMISSIONING, RESTORATION, AND ABANDONMENT

9.1 DECOMMISSIONING PLAN

At least ten (10) working days prior to the pre-operation compliance meeting, the Permittee shall submit to the Commission a Decommissioning Plan documenting the manner in which the Permittee anticipates decommissioning the Project in accordance with the requirements of Minnesota Rules 7854.0500, subpart 13. The Permittee shall ensure that it carries out its obligations to provide for the resources necessary to fulfill its requirements to properly decommission the Project at the appropriate time. The Commission may at any time request the Permittee to file a report with the Commission describing how the Permittee is fulfilling this obligation.

9.2 SITE RESTORATION

Upon expiration of this permit, or upon earlier termination of operation of the Project, or any turbine within the Project, the Permittee shall have the obligation to dismantle and remove from the site all towers, turbine generators, transformers, overhead and underground cables and lines, foundations, buildings, and ancillary equipment to a depth of four feet. To the extent feasible, the Permittee shall restore and reclaim the site to its pre-project topography and topsoil quality. All access roads shall be removed unless written approval is given by the affected landowner(s) requesting that one or more roads, or portions thereof, be retained. Any agreement for removal to a lesser depth or no removal shall be recorded with the county and shall show the locations of all such foundations. All such agreements between the Permittee and the affected landowner(s) shall be submitted to the Commission prior to completion of restoration activities. The site shall be restored in accordance with the requirements of this condition within 18 months after expiration.

9.3 ABANDONED TURBINES

The Permittee shall advise the Commission of any turbines that are abandoned prior to termination of operation of the Project. A Project, or any turbine within the Project, shall be considered abandoned after one (1) year without energy production and the land restored pursuant to Section 9.2 unless a plan is developed and submitted to the Commission outlining the steps and schedule for returning the Project, or any turbine within the Project, to service.

SECTION 10
AUTHORITY TO CONSTRUCT LWECS

10.1 WIND RIGHTS

At least ten (10) working days prior to the pre-construction meeting, the Permittee shall demonstrate that it has obtained the wind rights and any other rights necessary to construct and operate the Project within the boundaries of the LWECS authorized by this permit.

Nothing in this permit shall be construed to preclude any other person from seeking a site permit to construct a LWECS in any area within the boundaries of the Project covered by this permit if the Permittee does not hold exclusive wind rights for such areas.

10.2 POWER PURCHASE AGREEMENT

In the event the Permittee does not have a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the Project at the time this permit is issued, the Permittee shall provide notice to the Commission when it obtains a commitment for purchase of the power. This permit does not authorize construction of the Project until the Permittee has obtained a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the Project. In the event the Permittee does not obtain a power purchase agreement or some other enforceable mechanism for sale of the electricity to be generated by the Project within two years of the issuance of this permit, the Permittee must advise the Commission of the reason for not having such commitment. In such event, the Commission may determine whether this permit should be amended or revoked. No amendment or revocation of this permit may be undertaken except in accordance with applicable statutes and rules, including Minnesota Rule 7854.1300.

10.3 FAILURE TO COMMENCE CONSTRUCTION

If the Permittee has not completed the pre-construction surveys required under this permit and commenced construction of the LWECS within two years of the issuance of this permit, the Permittee must advise the Commission of the reason construction has not commenced. In such event, the Commission shall make a determination as to whether this permit should be amended or revoked. No revocation of this permit may be undertaken except in accordance with applicable statutes and rules, including Minnesota Rule 7854.1300.

10.4 PREEMPTION OF OTHER LAWS

Pursuant to Minnesota Statutes section 216F.07, this site permit shall be the only site approval required for the location of this Project, and this permit shall supersede and preempt all zoning, building, and land use rules, regulations, and ordinances adopted by regional, county, local, and special purpose governments. Nothing in this permit shall release the Permittee from any obligation imposed by law that is not superseded or preempted by law.

10.5 OTHER PERMITS

The Permittee shall be responsible for acquiring any other federal, state, or local permits or authorizations that may be required to construct and operate a LWECS within the authorized site. The Permittee shall submit a copy of such permits and authorizations to the Commission upon request.

10.5.1 COMPLIANCE WITH FEDERAL AND STATE AGENCY PERMITS

The Permittee shall comply with all terms and conditions of permits or licenses issued by Federal, State, or Tribal authorities including but not limited to the requirements of the PCA

(Section 401 Water Quality Certification, National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) stormwater permit for construction activity, and other site specific discharge approvals), DNR (License to Cross Public Lands and Water, Public Water Works Permit, and state protected species consultation), SHPO (Section 106 Historic Consultation Act), FAA determinations, and DOT (Utility Access Permit, Highway Access Permit, Oversize and Overweight Permit, and Aeronautics Airspace Obstruction Permit).

10.5.2 COMPLIANCE WITH COUNTY, CITY, OR MUNICIPAL PERMITS

The Permittee shall comply with all terms and conditions of permits or licenses issued by the counties, cities, and municipalities affected by the Project that do not conflict or are not pre-empted by federal or state permits and regulations.

SECTION 11
COMMISSION POST-ISSUANCE AUTHORITIES

11.1 PERIODIC REVIEW

The Commission shall initiate a review of this permit and the applicable conditions at least once every five (5) years. The purpose of the periodic review is to allow the Commission, the Permittee, and other interested persons an opportunity to consider modifications in the conditions of this permit. No modification may be made except in accordance with applicable statutes and rules.

11.2 MODIFICATION OF CONDITIONS

After notice and opportunity for hearing, this permit may be modified or amended for cause, including but not limited to the following:

(a) Violation of any condition in this permit;

(b) Endangerment of human health or the environment by operation of the facility; or

(c) Existence of other grounds established by rule.

11.3 REVOCATION OR SUSPENSION OF PERMIT

The Commission may take action to suspend or revoke this permit upon the grounds that:

(a) A false statement was knowingly made in the application or in accompanying statements or studies required of the Permittee, and a true statement would have warranted a change in the Commission's findings;

(b) There has been a failure to comply with material conditions of this permit, or there has been a failure to maintain health and safety standards; or

(c) There has been a material violation of a provision of an applicable statute, rule, or an order of the Commission.

In the event the Commission determines that it is appropriate to consider revocation or suspension of this permit, the Commission shall proceed in accordance with the requirements of Minnesota Rule 7854.1300 to determine the appropriate action. Upon a finding of any of the above, the Commission may require the Permittee to undertake corrective measures in lieu of having this permit suspended or revoked.

11.4 MORE STRINGENT RULES

The Commission's issuance of this site permit does not prevent the future adoption by the Commission of rules or orders more stringent than those now in existence and does not prevent the enforcement of these more stringent rules and orders against the Permittee.

11.5 TRANSFER OF PERMIT

The Permittee may not transfer this permit without the approval of the Commission. If the Permittee desires to transfer this permit, the holder shall advise the Commission in writing of such desire. The Permittee shall provide the Commission with such information about the transfer as the Commission requires to reach a decision. The Commission may impose additional conditions on any new Permittee as part of the approval of the transfer.

11.6 RIGHT OF ENTRY

Upon reasonable notice, presentation of credentials, and at all times in compliance with the Permittee's site safety standards, the Permittee shall allow representatives of the Commission to perform the following:

(a) To enter upon the facilities easement of the site property for the purpose of obtaining information, examining records, and conducting surveys or investigations;

(b) To bring such equipment upon the facilities easement of the property as is necessary to conduct such surveys and investigations;

(c) To sample and monitor upon the facilities easement of the property; and

(d) To examine and copy any documents pertaining to compliance with the conditions of this permit.

11.7 PROPRIETARY INFORMATION

Certain information required to be submitted to the Commission under this permit, including energy production and wake loss data, may constitute trade secret information or other type of proprietary information under the Data Practices Act or other law and is not to be made available by the Commission. The Permittee must satisfy requirements of applicable law to obtain the protection afforded by the law.

SECTION 12
EXPIRATION DATE

This permit shall expire thirty (30) years after the date this permit was approved and adopted.

SECTION 13
SPECIAL CONDITIONS

Special conditions shall take precedence over any of the other conditions of this Permit if there should be a conflict between the two.

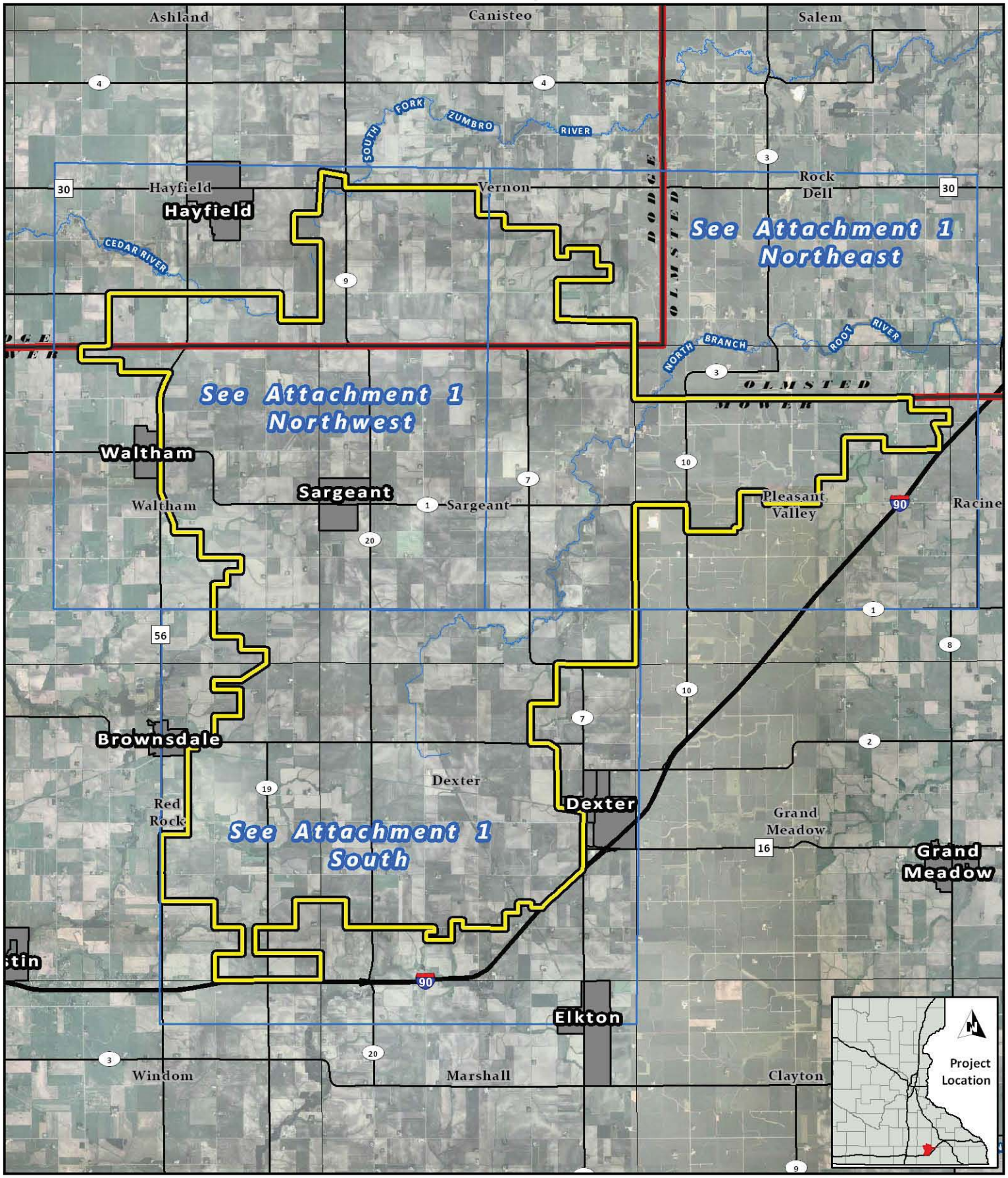
13.1 BLANDING'S TURTLE

The Permittee shall follow the fact sheet of recommendations for avoiding and minimizing impacts for the Blanding's turtles. The summary of recommendations for avoiding and minimizing impacts to Blanding's turtle populations, including the attached colored photocopies of the Blanding's turtles, shall be made available to all contractors and its employees. Attachment 5 contains the fact sheet recommendations and summary.

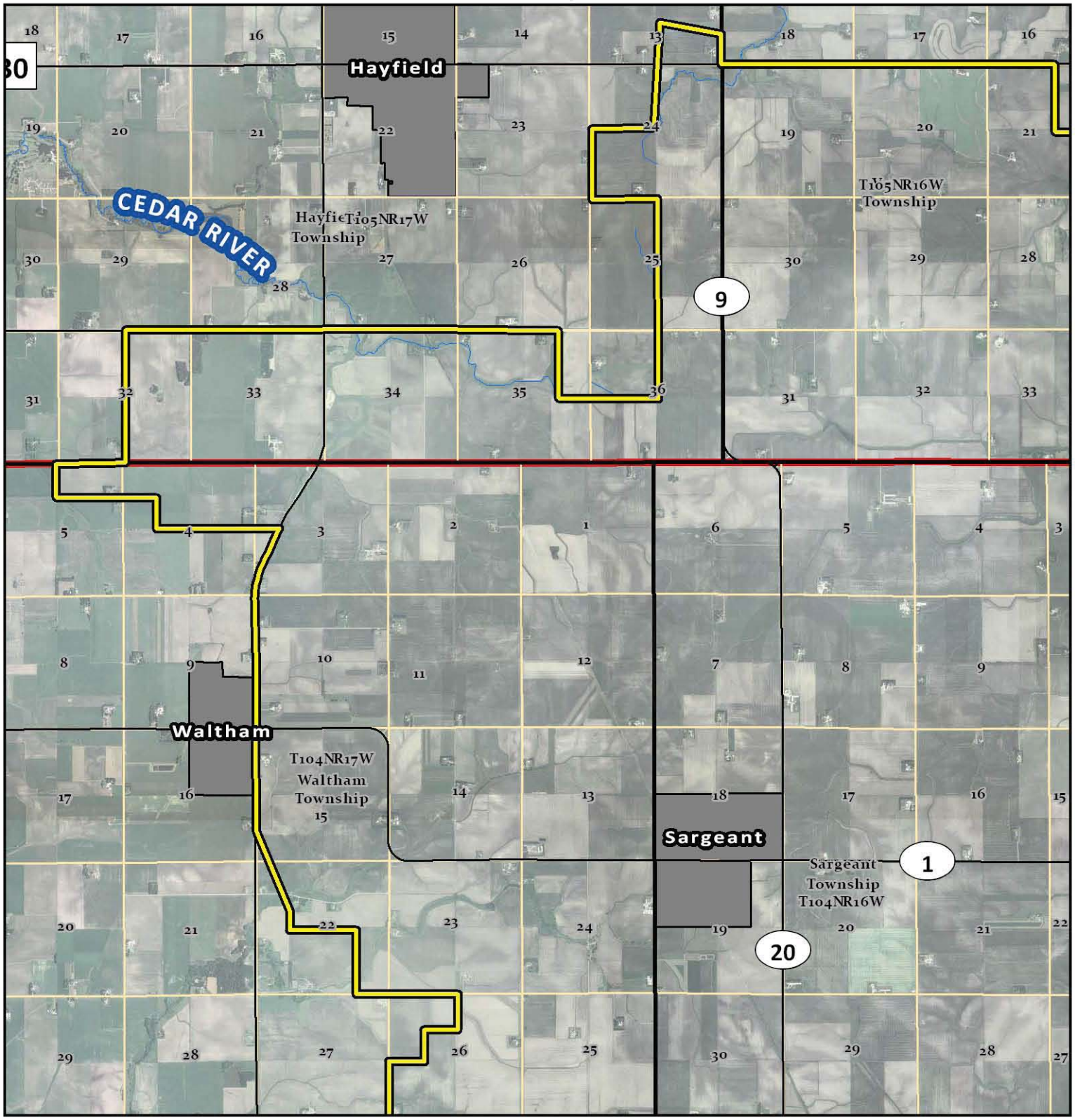
13.2 AVIAN AND BAT SURVEYS

The Permittee shall submit avian and bat surveys, as referenced in its application, thirty (30) days after completion or thirty (30) days prior to the pre-construction meeting, whichever occurs first, and document how results will be used to inform micro-siting and the Avian and Bat Protection Plan required pursuant to Section 6.7

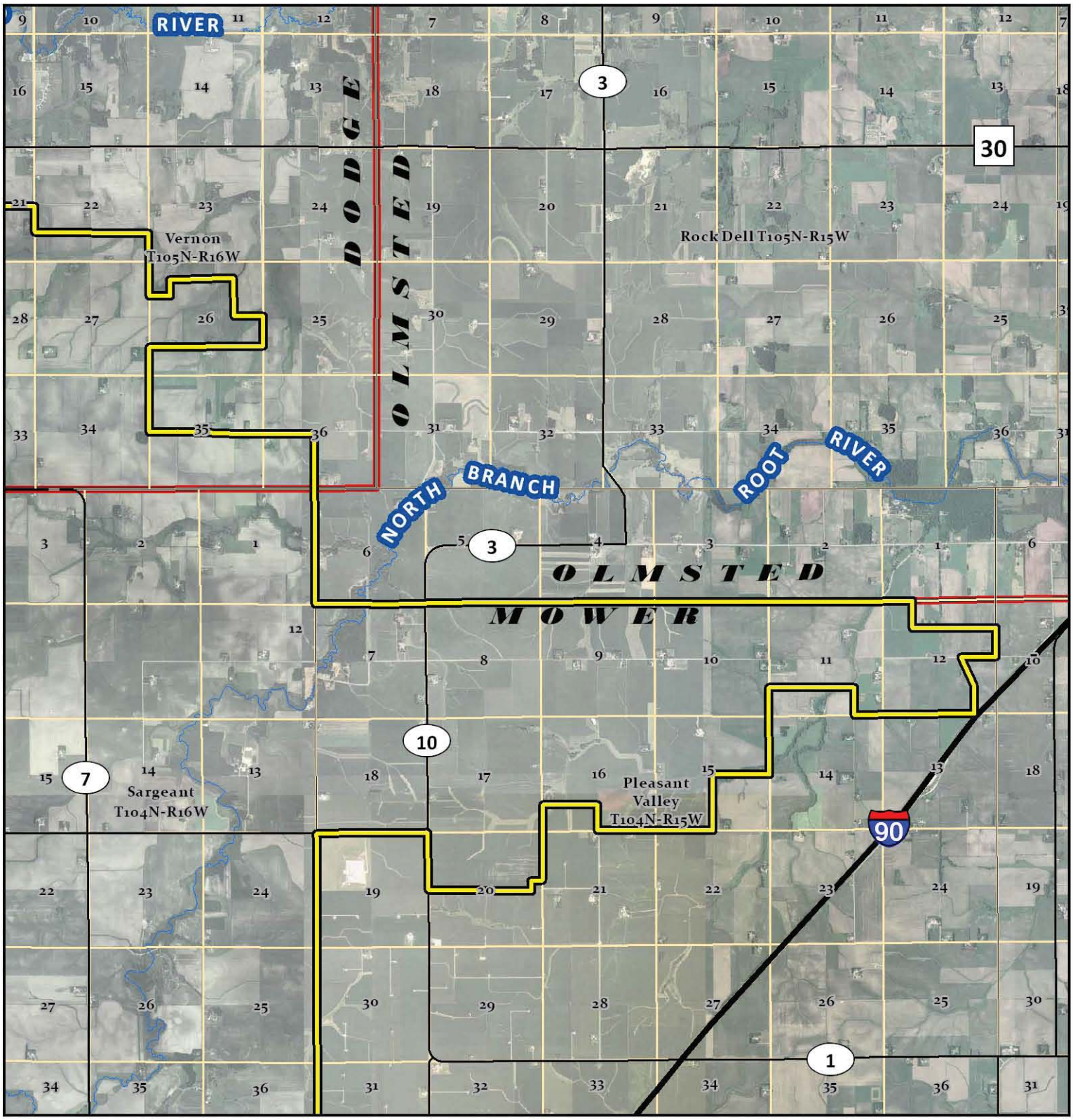
ATTACHMENT 1 - SITE PERMIT MAP
PLEASANT VALLEY WIND, LLC PROJECT AREA



ATTACHMENT 1 - NORTHWEST
PLEASANT VALLEY WIND, LLC PROJECT AREA



ATTACHMENT 1 - NORTHEAST
PLEASANT VALLEY WIND, LLC PROJECT AREA

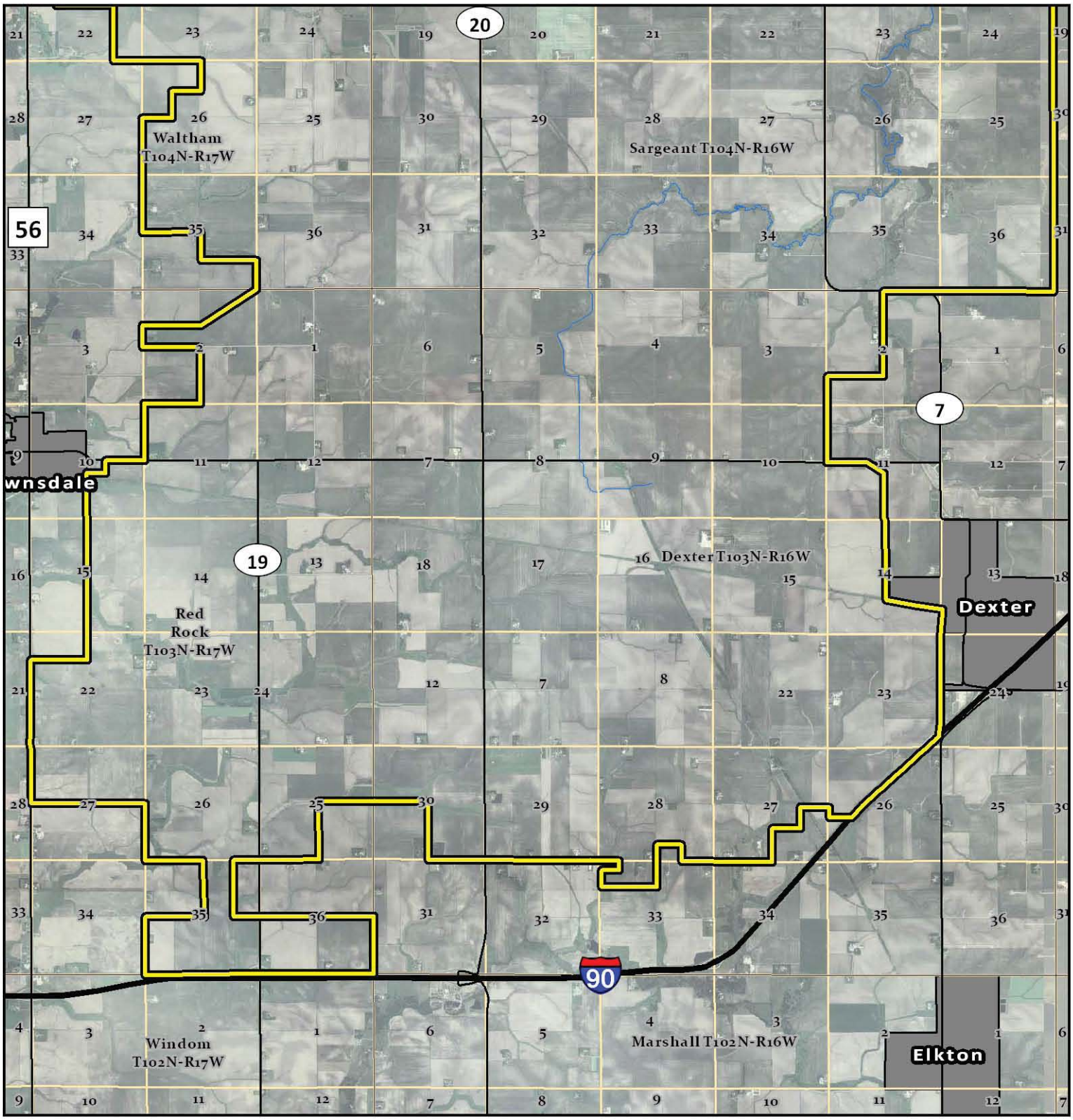


0 2 4

Miles

Project Boundary | County Boundary | Township Boundary | Municipal Boundary | Sections

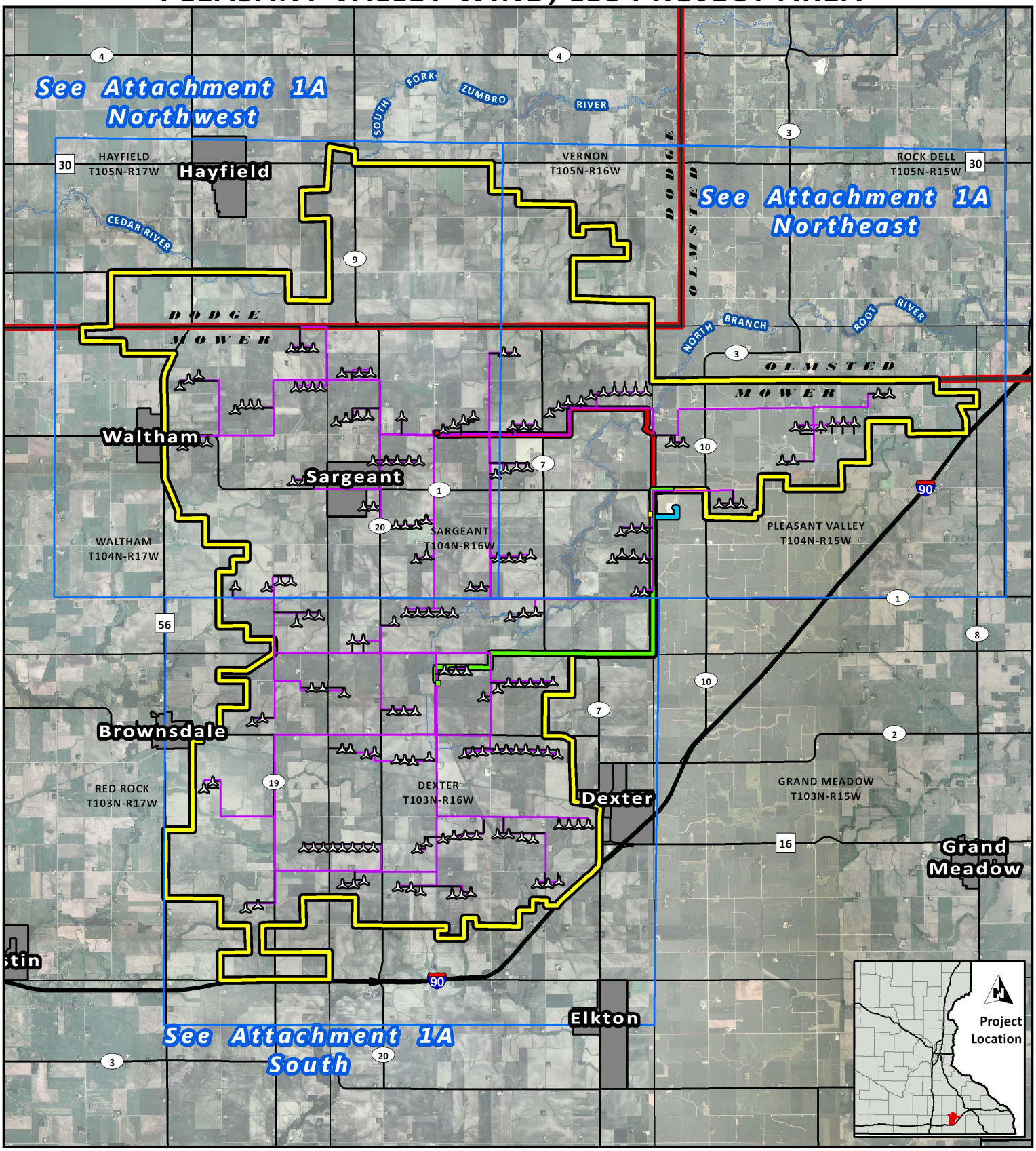
ATTACHMENT 1 - SOUTH
PLEASANT VALLEY WIND, LLC PROJECT AREA



0 2 4
Miles

Project Boundary | County Boundary | Township Boundary | Municipal Boundary | Sections

ATTACHMENT 1A - GE TURBINE LAYOUT
PLEASANT VALLEY WIND, LLC PROJECT AREA

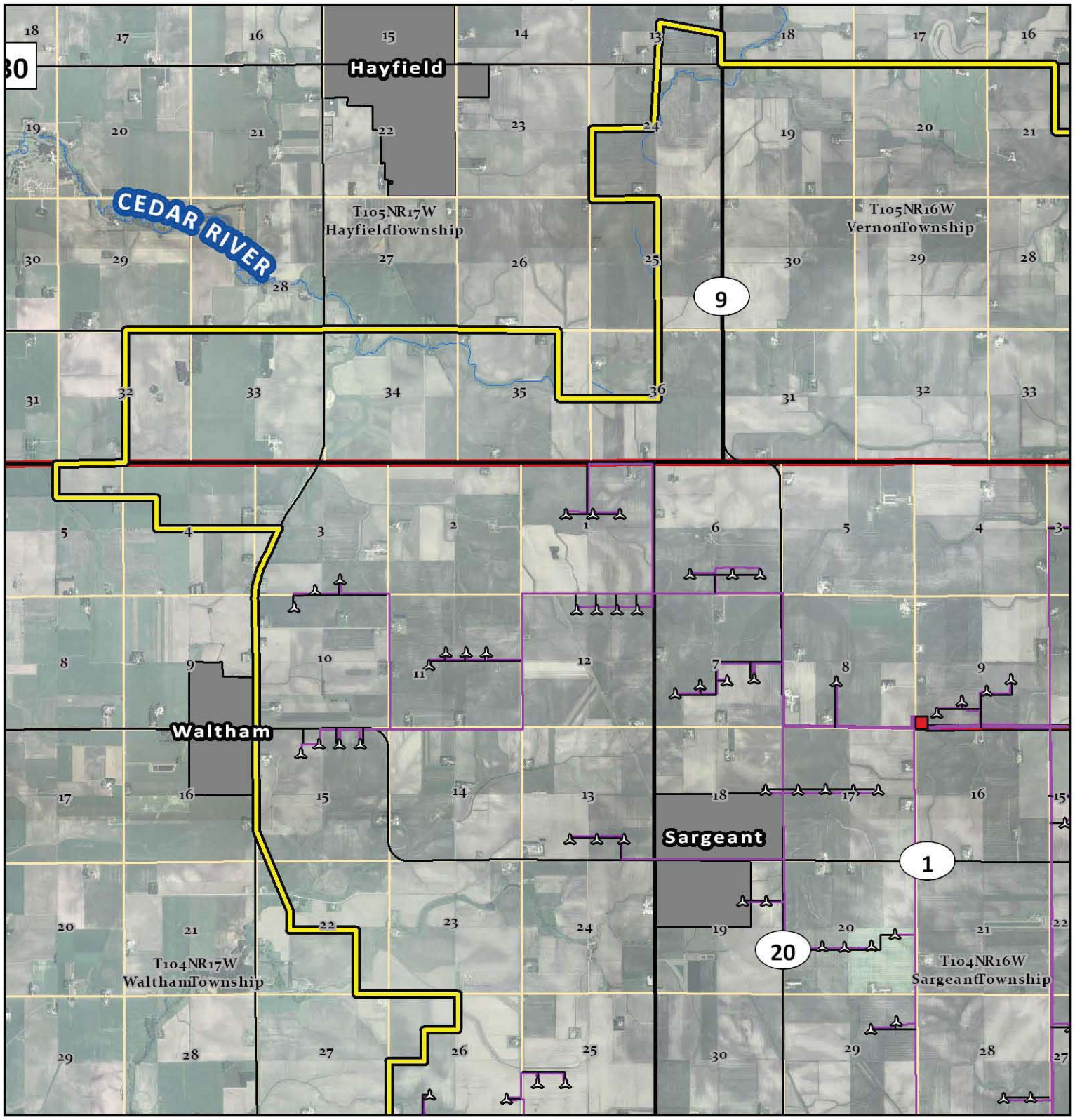


GE 1.6MW Turbines - 188 (Preliminary) — Proposed Roads — GE Collection System

Project Boundary — County Boundary — Township Boundary — Municipal Boundary

Proposed TL Routes & Substation Sites (Permitted Locally) — North Route — South Route — East Route — N. Sub — S. Sub — E. Sub

ATTACHMENT 1A NORTHWEST - GE TURBINE LAYOUT
PLEASANT VALLEY WIND, LLC PROJECT AREA



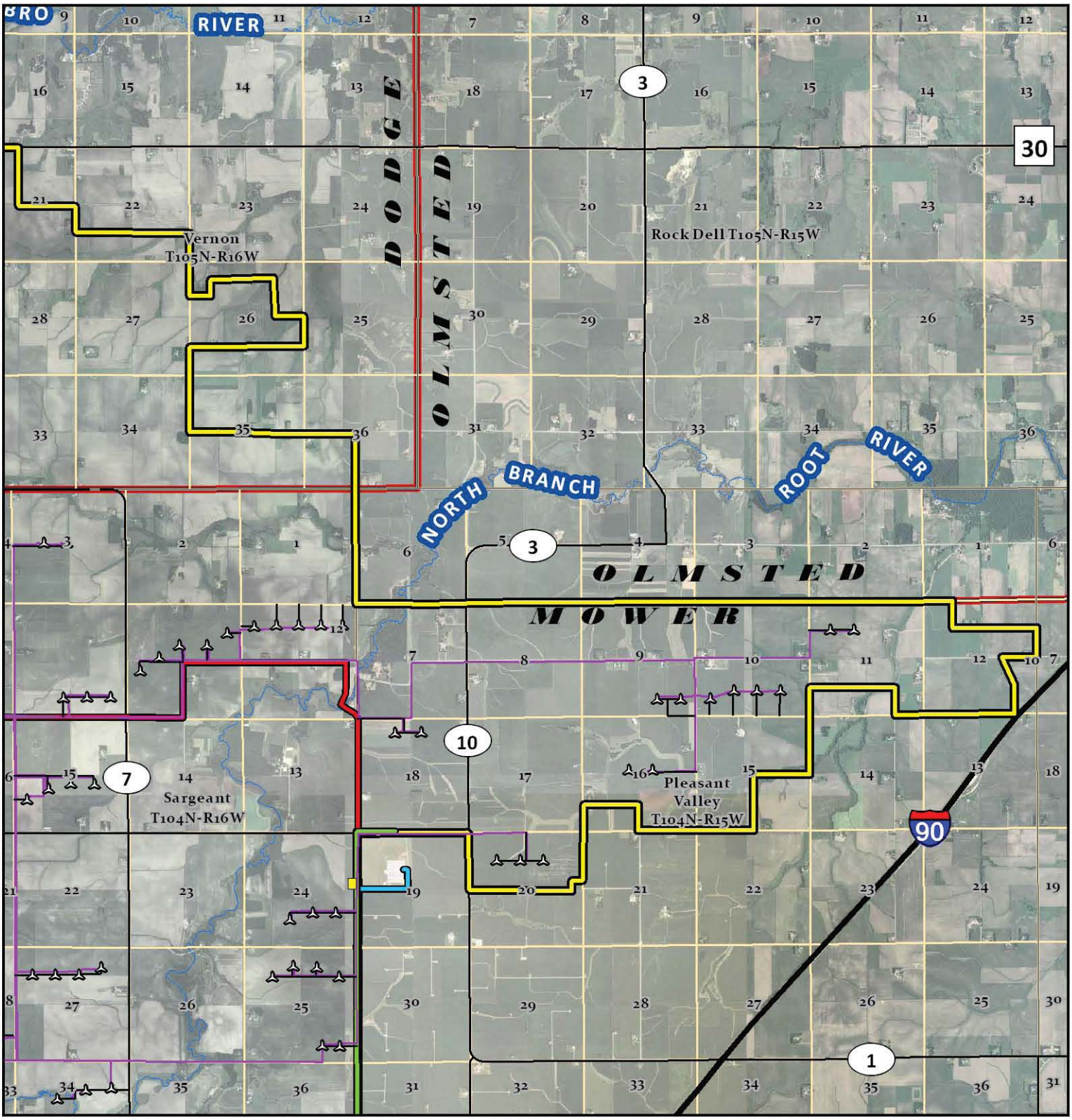
0 2 4
Miles

GE 1.6MW Turbines - 188 (Preliminary) | Proposed Roads | GE Collection System

Project Boundary | County Boundary | Township Boundary | Municipal Boundary | Sections

PROPOSED TL ROUTES& SUBSTATION SITES (Permitted Locally) North Route | South Route | East Route | North Substation | South Substation | East Substation

ATTACHMENT 1A NORTHEAST - GE TURBINE LAYOUT
PLEASANT VALLEY WIND, LLC PROJECT AREA



0 2 4

Miles

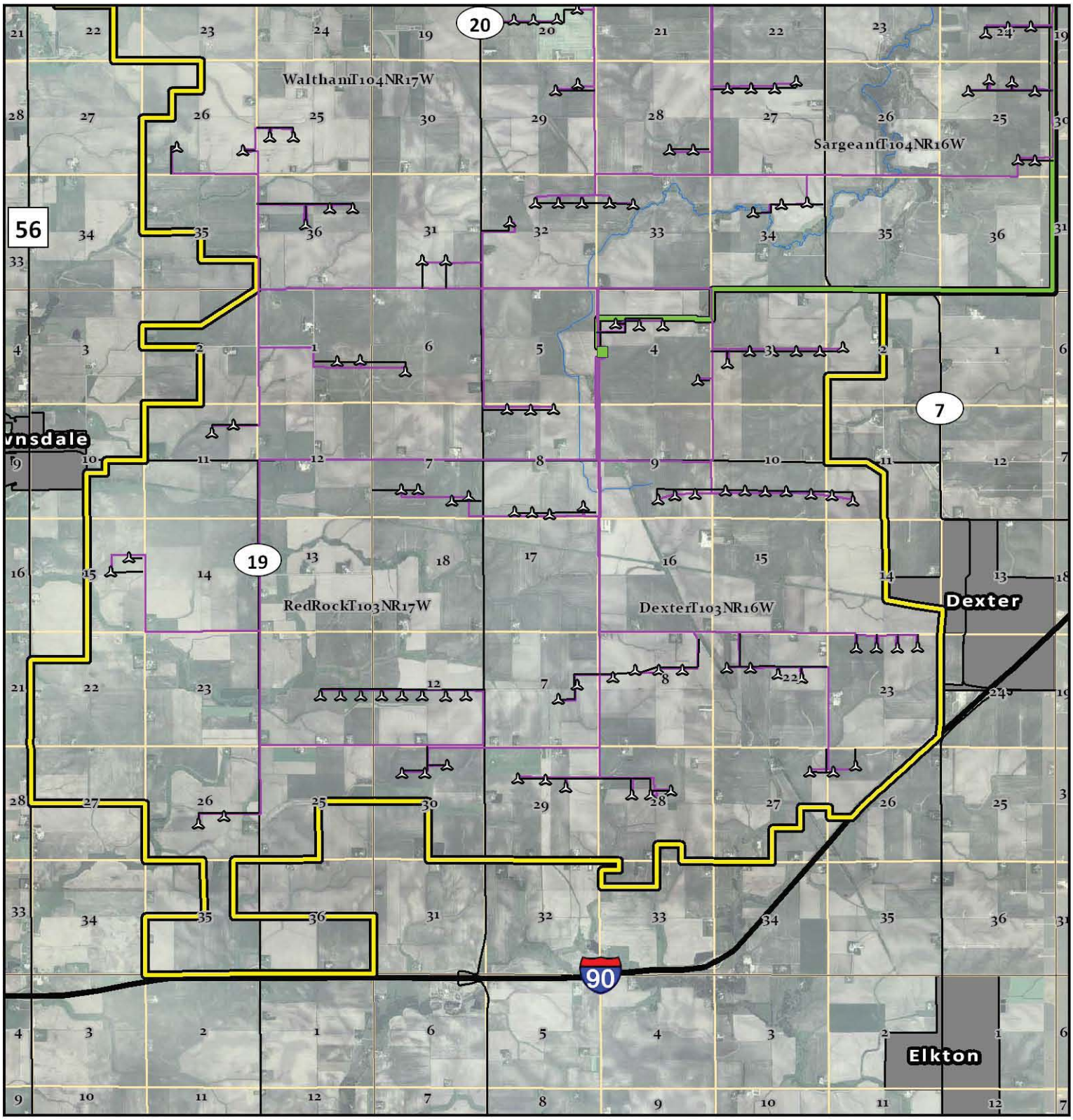
GE 1.6MW Turbines - 188 (Preliminary) — Proposed Roads — GE Collection System

Project Boundary — County Boundary — Township Boundary — Municipal Boundary — Sections

PROPOSED TL ROUTES & SUBSTATION SITES (Permitted Locally) — North Route — South Route — East Route — North Substation — South Substation — East Substation

res AMERICAS powering change®

ATTACHMENT 1A SOUTH - GE TURBINE LAYOUT
PLEASANT VALLEY WIND, LLC PROJECT AREA



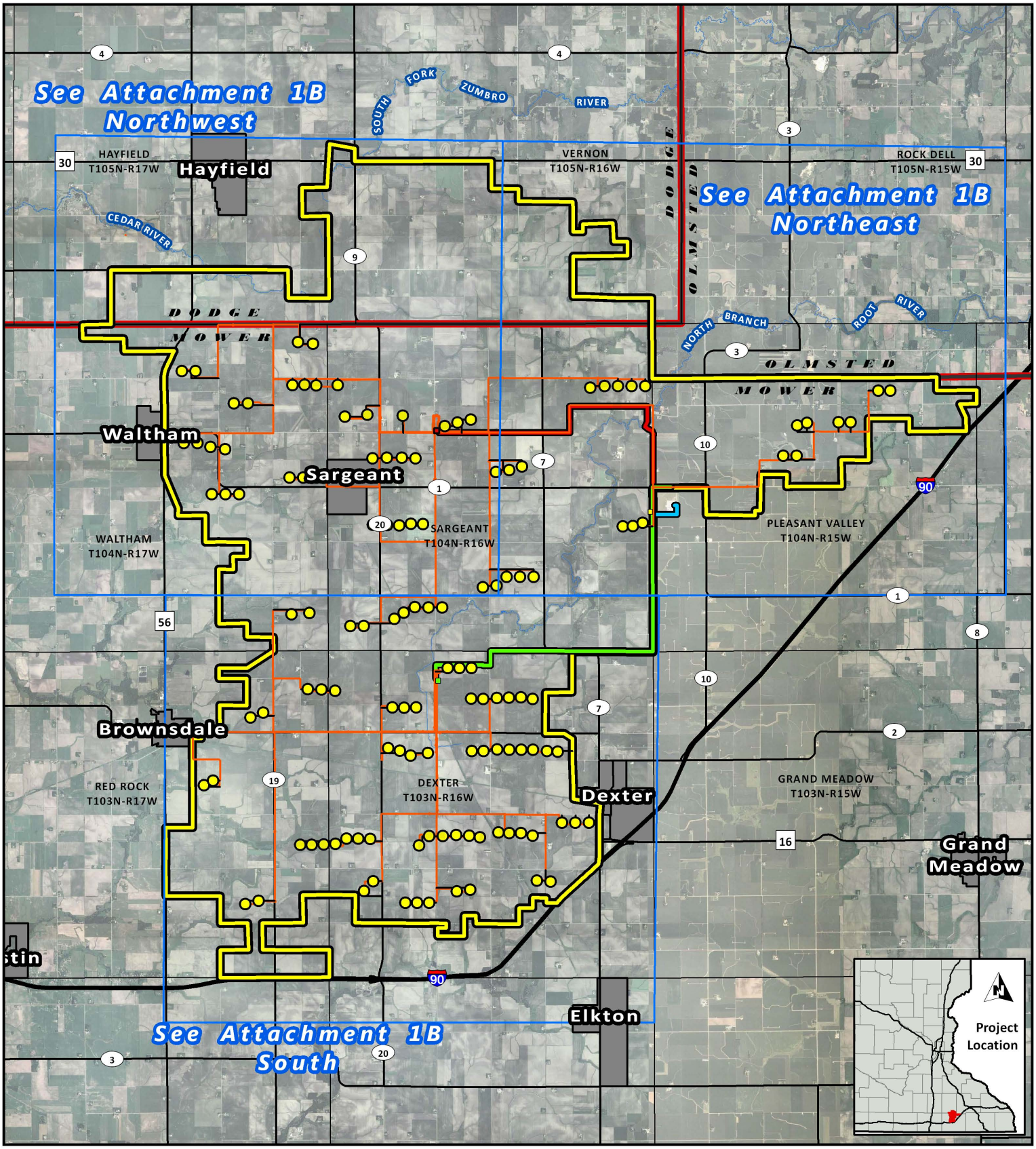
0 2 4
Miles

PROPOSED TL ROUTES & SUBSTATION SITES (Permitted Locally) North Route South Route East Route North Substation South Substation East Substation

Project Boundary County Boundary Township Boundary Municipal Boundary Sections

GE 1.6MW Turbines - 188 (Preliminary) Proposed Roads GE Collection System

ATTACHMENT 1B - SIEMENS TURBINE LAYOUT
PLEASANT VALLEY WIND, LLC PROJECT AREA

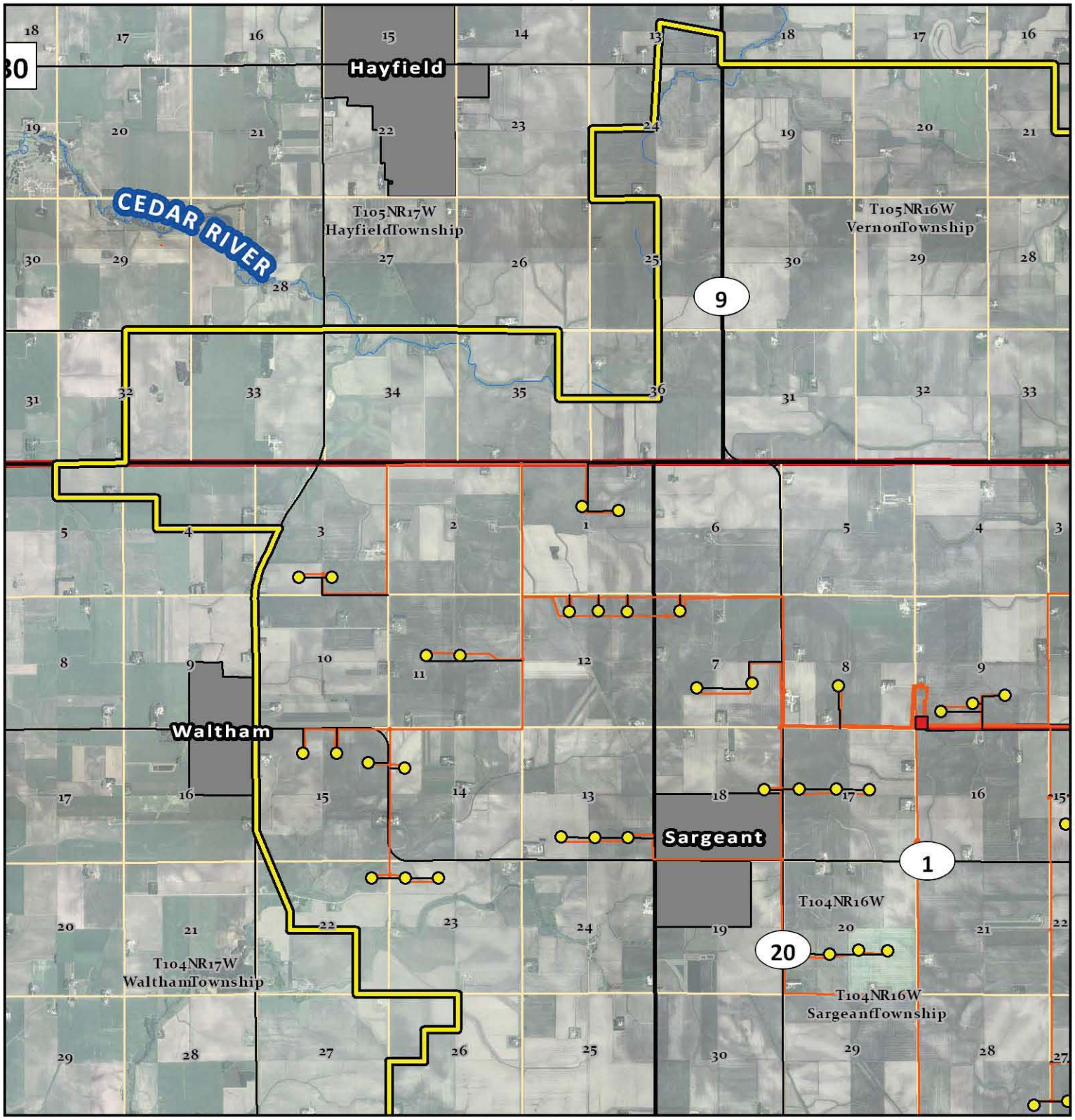


SIEMENS 2.3MW/101 Wind Turbine — Proposed Roads — Siemens Collection System

Project Boundary — County Boundary — Township Boundary — Municipal Boundary

Proposed TL Routes & Substation Sites (Permitted Locally) — North Route — South Route — East Route — N. Sub — S. Sub — E. Sub

ATTACHMENT 1B NORTHWEST - SIEMENS TURBINE LAYOUT
PLEASANT VALLEY WIND, LLC PROJECT AREA



0 2 4

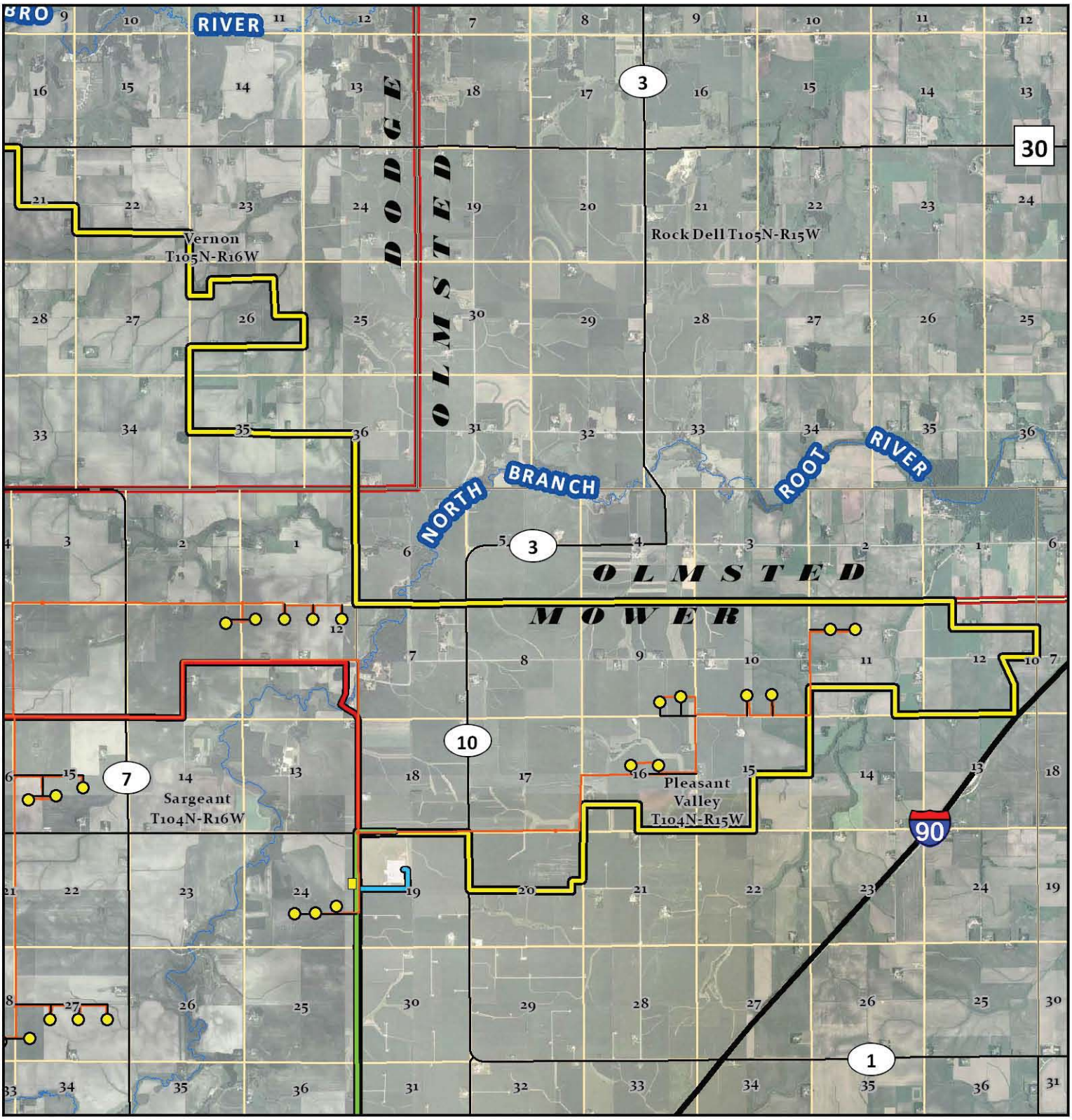
Miles

SIEMENS 2.3MW/101 Wind Turbine | Proposed Roads | Siemens Collection System

Project Boundary | County Boundary | Township Boundary | Municipal Boundary | Sections

PROPOSED TL ROUTES& SUBSTATION SITES (Permitted Locally) | North Route | South Route | East Route | North Substation | South Substation | East Substation

ATTACHMENT 1B NORTHEAST - SIEMENS TURBINE LAYOUT
PLEASANT VALLEY WIND, LLC PROJECT AREA



0 2 4

Miles

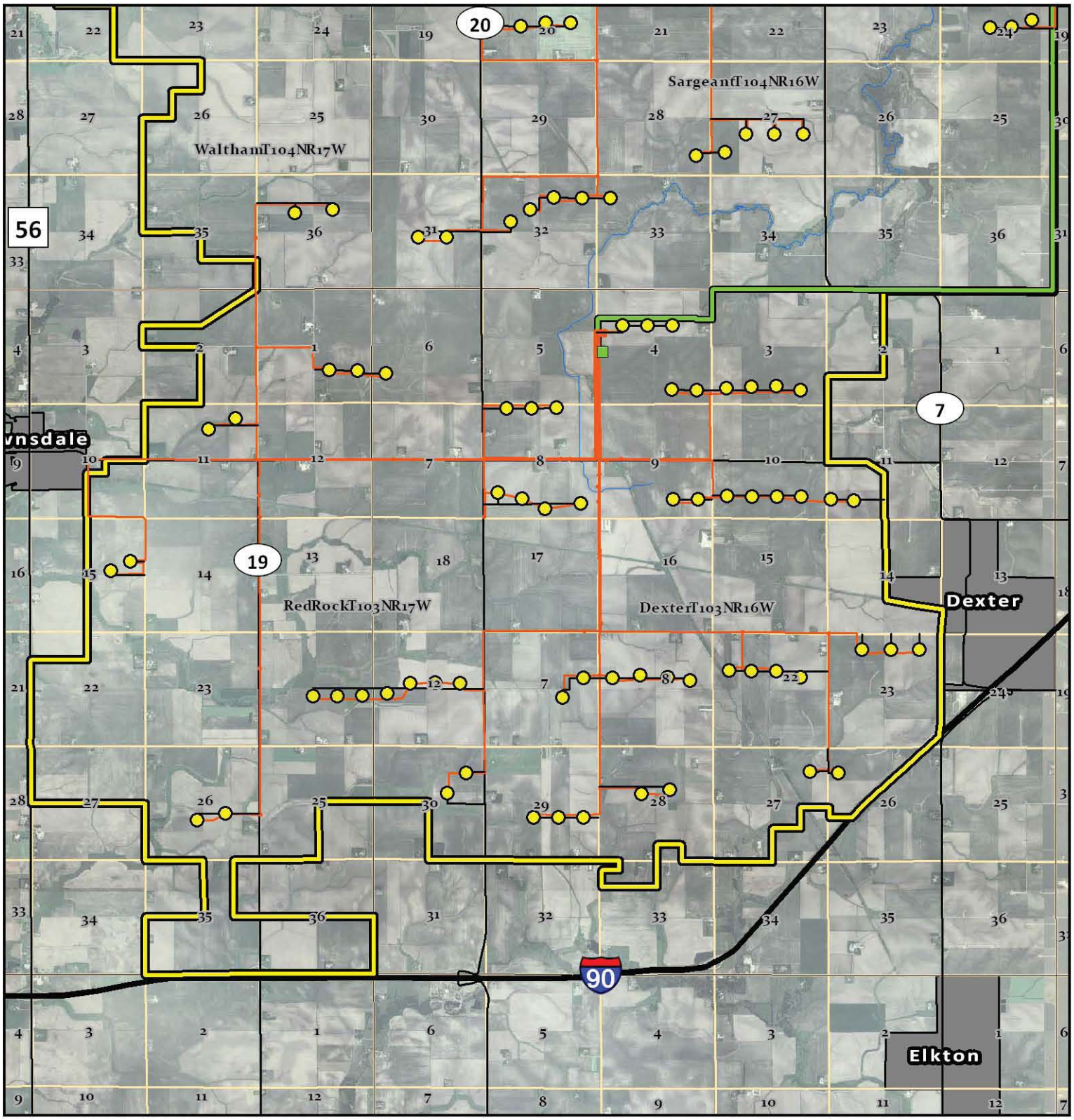
SIEMENS 2.3MW/101 Wind Turbine — Proposed Roads — Siemens Collection System

Project Boundary — County Boundary — Township Boundary — Municipal Boundary — Sections

PROPOSED TL ROUTES & SUBSTATION SITES (Permitted Locally) — North Route — South Route — East Route — North Substation — South Substation — East Substation

res AMERICAS powering change®

ATTACHMENT 1B SOUTH - SIEMENS TURBINE LAYOUT
PLEASANT VALLEY WIND, LLC PROJECT AREA



0 2 4
Miles

PROPOSED TL ROUTES & SUBSTATION SITES (Permitted Locally) North Route South Route East Route North Substation South Substation East Substation

Project Boundary County Boundary Township Boundary Municipal Boundary Sections

SIEMENS 2.3MW/101 Wind Turbine Proposed Roads Siemens Collection System

MINNESOTA PUBLIC UTILITIES COMMISSION
COMPLAINT HANDLING PROCEDURES
FOR
LARGE WIND ENERGY CONVERSION SYSTEMS

A. Purpose:

To establish a uniform and timely method of reporting complaints received by the Permittee concerning Permit conditions for site preparation, construction, cleanup and restoration, operation, and resolution of such complaints.

B. Scope:

This document describes Complaint reporting procedures and frequency.

C. Applicability:

The procedures shall be used for all complaints received by the Permittee and all complaints received by the Commission under Minn. Rule 7829.1500 or 7829.1700 relevant to this Permit.

D. Definitions:

Complaint: A verbal or written statement presented to the Permittee by a person expressing dissatisfaction or concern regarding site preparation, cleanup or restoration or other LWECS and associated facilities site permit conditions. Complaints do not include requests, inquiries, questions, or general comments.

Substantial Complaint: A written Complaint alleging a violation of a specific Site Permit condition that, if substantiated, could result in Permit modification or suspension pursuant to the applicable regulations.

Unresolved Complaint: A Complaint which, despite the good faith efforts of the permittee and a person(s), remains to both or one of the parties unresolved or unsatisfactorily resolved.

Person: An individual, partnership, joint venture, private or public corporation, association, firm, public service company, cooperative, political subdivision, municipal corporation, government agency, public utility district, or any other entity, public or private, however organized.

E. Complaint Documentation and Processing:

1. The Permittee shall document all Complaints by maintaining a record of all applicable information concerning the Complaint, including the following:

a. Name of complainant, address, phone number, and e-mail address.
b. Precise property description or parcel number.
c. Name of Permittee representative receiving Complaint and date of receipt.
d. Nature of Complaint and the applicable Site Permit conditions(s).
e. Activities undertaken to resolve the Complaint.
f. Final disposition of the Complaint.

2. The Permittee shall designate an individual to summarize Complaints to the Commission. This person's name, phone number and e-mail address shall accompany all complaint submittals.

3. A Person presenting the Complaint should to the extent possible, include the following information in their communications:

a. Name, address, phone number, and e-mail address.
b. Date
c. Tract or parcel
d. Whether the complaint relates to (1) a Site Permit matter, (2) a LWECS and associated facility issue, or (3) a compliance issue.

F. Reporting Requirements:

The Permittee shall report all complaints to the Commission according to the following schedule:

Immediate Reports: All substantial complaints shall be reported to the Commission the same day received, or on the following working day for complaints received after working hours. Such reports are to be directed to Wind Permit Compliance, 1-800-657-3794, or by e-mail to: DOC.energypermitcompliance@state.mn.us, or. Voice messages are acceptable.

Monthly Reports: By the 15th of each month, a summary of all complaints, including substantial complaints received or resolved during the preceding month, shall be Filed to Dr. Burl W. Haar, Executive Secretary, Public Utilities Commission, using the Minnesota Department of Commerce eDocket system (see eFiling instructions attached to this permit).

If no Complaints were received during the preceding month, the permittee shall submit (eFile) a summary indicating that no complaints were received.

G. Complaints Received by the Commission or OES:

Complaints received directly by the Commission from aggrieved persons regarding site preparation, construction, cleanup, restoration, operation and maintenance shall be promptly sent to the Permittee.

H. Commission Process for Unresolved Complaints:

Initial Screening: Commission staff shall perform an initial evaluation of unresolved Complaints submitted to the Commission. Complaints raising substantial LWECS Site Permit issues shall be processed and resolved by the Commission. Staff shall notify Permittee and appropriate person(s) if it determines that the Complaint is a Substantial Complaint. With respect to such Complaints, each party shall submit a written summary of its position to the Commission no later than ten (10) days after receipt of the Staff notification. Staff shall present Briefing Papers to the Commission, which shall resolve the Complaint within twenty days of submission of the Briefing Papers.

I. Permittee Contacts for Complaints:

Mailing Address: Complaints filed by mail shall be sent to the address below:

Pleasant Valley Wind, LLC c/o
Renewable Energy Systems Americas Inc.
11101 W. 120th Ave., Suite 400
Broomfield, CO 80021

Tel: 303-439-4281

Email: joe.grennan@res-americas.com

ATTACHMENT 3

MINNESOTA PUBLIC UTILITIES COMMISSION
COMPLIANCE FILING PROCEDURE
FOR PERMITTED ENERGY FACILITIES

1. Purpose

To establish a uniform and timely method of submitting information required by the Commission energy facility permits.

2. Scope and Applicability

This procedure encompasses all compliance filings required by permit.

3. Definitions

Compliance Filing – A sending (filing) of information to the Commission, where the information is required by a Commission site or route permit.

4. Responsibilities

A) The permittee shall eFile all compliance filings with Dr. Burl Haar, Executive Secretary, Public Utilities Commission, through the Department of Commerce (DOC) eDocket system. The system is located on the DOC website: https://www.edockets.state.mn.us/EFiling/home.jsp

General instructions are provided on the website. Permittees must register on the website to eFile documents.

B) All filings must have a cover sheet that includes:
1) Date
2) Name of submitter / permittee
3) Type of Permit (Site or Route)
4) Project Location
5) Project Docket Number
6) Permit Section Under Which the Filing is Made
7) Short Description of the Filing

C) Filings that are graphic intensive (e.g., maps, plan and profile) must, in addition to being eFiled, be submitted as paper copies and on CD. Copies and CDs should be sent to: 1) Dr. Burl W. Haar, Executive Secretary, Minnesota Public Utilities Commission, 121 7th Place East, Suite 350, St. Paul, MN, 55101-2147, and 2) Department of Commerce, Energy Facility Permitting, 85 7th Place East, Suite 500, St. Paul, MN, 55101-2198. Additionally, the Commission may request a paper copy of any eFiled document.

PERMIT COMPLIANCE FILINGS[1]

PERMITTEE: Pleasant Valley Wind, LLC
PERMIT TYPE: LWECS Site Permit
PROJECT LOCATION: Dodge County and Mower County
COMMISSION DOCKET NUMBER: IP-6828/WS-09-1197

PRE-CONSTRUCTION MEETING

Filing Number	Permit Section	Description	Due Date	Notes
1	4.7	Native Prairie Protection Plan	Ten working days prior to pre-construction meeting, if required	
2	5.1	Site Plan	Ten working days prior to pre-construction meeting	
3	5.4	Field Representative	Ten working days prior to pre-construction meeting	
4	5.8	Complaint Reporting Procedures	Ten working days prior to pre-construction meeting and complaint submittals on the 15th of each month or within 24 hours	
5	6.1	Biological & Natural Resource Inventories	Ten working days prior to pre-construction meeting	
6	6.2	Shadow Flicker Analysis	Ten working days prior to pre-construction meeting	
7	6.3	Archaeological Resources	Ten working days prior to pre-construction meeting and as recommended by the State Historic Preservation Office	

[1] This compilation of permit compliance filings is provided for the convenience of the permittee and the Commission. However, it is not a substitute for the permit; the language of the permit controls.

PERMIT COMPLIANCE FILINGS

PRE-CONSTRUCTION MEETING

Filing Number	Condition	Description	Due Date	Notes
8	6.4	Interference	Ten working days prior to pre-construction meeting	
9	6.5	Wake Loss	Ten working days prior to pre-construction meeting and may be included with site plan or operation studies if performed	
10	6.7	Avian and Bat Protection Plan	Ten days prior to pre-construction meeting	
11	7.8	Roads	Ten working days prior to pre-construction meeting	
12	7.11	Soil Erosion and Sediment Control Plan	Ten working days prior to pre-construction	
13	7.16	Emergency Response	Ten working days prior to pre-construction meeting. Must register in 911 Program	
14	10.1	Wind Rights	Ten working days prior to pre-construction meeting	

PRE-OPERATION COMPLIANCE MEETING

Filing Number	Permit Section	Description	Due Date	Notes
15	5.7	Pre-operation compliance meeting	Ten working days prior to commercial operation	
16	6.6	Noise Study Protocol	Ten working days prior to pre-operation meeting	
17	9.1 & 9.3	Decommissioning Plan	Ten working days prior to commercial operation	

OTHER REQUIREMENTS

Filing Number	Permit Section	Description	Due Date	Notes
18	5.2	Notice to Landowners and Governmental Units	Within 10 working days of permit approval	
19	5.5	Site Manager	Ten working days prior to prior to commercial operation	
20	6.6	Noise Study Results	Within 18 months of Commercial Operation, if required	
21	6.7	Avian and Bat Reporting Requirements	Quarterly Requirements	
22	6.8	Project Energy Production	Due 2/1 each year or quarterly	
23	6.9	Wind Resource Use	Upon request of the Commission	
24	6.10	Extraordinary Events	Within 24 hours and report on occurrence of event within 30 days	
25	8.1	As Builts	Within 60 days of completion of construction	
26	10.3	Failure to Start Construction	Within 2 years of permit issuance	

ATTACHMENT 5

FOLLOWS THIS PAGE

Environmental Review Fact Sheet Series

Endangered, Threatened, and Special Concern Species of Minnesota

Blanding's Turtle

(*Emydoidea blandingii*)

Minnesota Status:	Threatened	State Rank[1]:	S2
Federal Status:	none	Global Rank[1]:	G4

HABITAT USE

Blanding's turtles need both wetland and upland habitats to complete their life cycle. The types of wetlands used include ponds, marshes, shrub swamps, bogs, and ditches and streams with slow-moving water. In Minnesota, Blanding's turtles are primarily marsh and pond inhabitants. Calm, shallow water bodies (Type 1-3 wetlands) with mud bottoms and abundant aquatic vegetation (e.g., cattails, water lilies) are preferred, and extensive marshes bordering rivers provide excellent habitat. Small temporary wetlands (those that dry up in the late summer or fall) are frequently used in spring and summer -- these fishless pools are amphibian and invertebrate breeding habitat, which provides an important food source for Blanding's turtles. Also, the warmer water of these shallower areas probably aids in the development of eggs within the female turtle. Nesting occurs in open (grassy or brushy) sandy uplands, often some distance from water bodies. Frequently, nesting occurs in traditional nesting grounds on undeveloped land. Blanding's turtles have also been known to nest successfully on residential property (especially in low density housing situations), and to utilize disturbed areas such as farm fields, gardens, under power lines, and road shoulders (especially of dirt roads). Although Blanding's turtles may travel through woodlots during their seasonal movements, shady areas (including forests and lawns with shade trees) are not used for nesting. Wetlands with deeper water are needed in times of drought, and during the winter. Blanding's turtles overwinter in the muddy bottoms of deeper marshes and ponds, or other water bodies where they are protected from freezing.

LIFE HISTORY

Individuals emerge from overwintering and begin basking in late March or early April on warm, sunny days. The increase in body temperature which occurs during basking is necessary for egg development within the female turtle. Nesting in Minnesota typically occurs during June, and females are most active in late afternoon and at dusk. Nesting can occur as much as a mile from wetlands. The nest is dug by the female in an open sandy area and 6-15 eggs are laid. The female turtle returns to the marsh within 24 hours of laying eggs. After a development period of approximately two months, hatchlings leave the nest from mid-August through early-October. Nesting females and hatchlings are often at risk of being killed while crossing roads between wetlands and nesting areas. In addition to movements associated with nesting, all ages and both sexes move between wetlands from April through November. These movements peak in June and July and again in September and October as turtles move to and from overwintering sites. In late autumn (typically November), Blanding's turtles bury themselves in the substrate (the mud at the bottom) of deeper wetlands to overwinter.

IMPACTS / THREATS / CAUSES OF DECLINE

- loss of wetland habitat through drainage or flooding (converting wetlands into ponds or lakes)
- loss of upland habitat through development or conversion to agriculture
- human disturbance, including collection for the pet trade* and road kills during seasonal movements
- increase in predator populations (skunks, raccoons, etc.) which prey on nests and young

*It is illegal to possess this threatened species.

RECOMMENDATIONS FOR AVOIDING AND MINIMIZING IMPACTS

These recommendations apply to typical construction projects and general land use within Blanding's turtle habitat, and are provided to help local governments, developers, contractors, and homeowners minimize or avoid detrimental impacts to Blanding's turtle populations. **List 1** describes minimum measures which we recommend to prevent harm to Blanding's turtles during construction or other work within Blanding's turtle habitat. **List 2** contains recommendations which offer even greater protection for Blanding's turtles populations; this list should be used *in addition to the first list* in areas which are known to be of state-wide importance to Blanding's turtles (contact the DNR's Natural Heritage and Nongame Research Program if you wish to determine if your project or home is in one of these areas), or in any other area where greater protection for Blanding's turtles is desired.

List 1. Recommendations for all areas inhabited by Blanding's turtles.	**List 2. *Additional* recommendations for areas known to be of state-wide importance to Blanding's turtles.**
GENERAL	
A flyer with an illustration of a Blanding's turtle should be given to all contractors working in the area. Homeowners should also be informed of the presence of Blanding's turtles in the area.	Turtle crossing signs can be installed adjacent to road-crossing areas used by Blanding's turtles to increase public awareness and reduce road kills.
Turtles which are in imminent danger should be moved, by hand, out of harms way. Turtles which are not in imminent danger should be left undisturbed.	Workers in the area should be aware that Blanding's turtles nest in June, generally after 4pm, and should be advised to minimize disturbance if turtles are seen.
If a Blanding's turtle nests in your yard, do not disturb the nest.	If you would like to provide more protection for a Blanding's turtle nest on your property, see "Protecting Blanding's Turtle Nests" on page 3 of this fact sheet.
Silt fencing should be set up to keep turtles out of construction areas. It is critical that silt fencing be removed after the area has been revegetated.	Construction in potential nesting areas should be limited to the period between September 15 and June 1 (this is the time when activity of adults and hatchlings in upland areas is at a minimum).
WETLANDS	
Small, vegetated temporary wetlands (Types 2 & 3) should not be dredged, deepened, filled, or converted to storm water retention basins (these wetlands provide important habitat during spring and summer).	Shallow portions of wetlands should not be disturbed during prime basking time (mid morning to mid- afternoon in May and June). A wide buffer should be left along the shore to minimize human activity near wetlands (basking Blanding's turtles are more easily disturbed than other turtle species).
Wetlands should be protected from pollution; use of fertilizers and pesticides should be avoided, and run-off from lawns and streets should be controlled. Erosion should be prevented to keep sediment from reaching wetlands and lakes.	Wetlands should be protected from road, lawn, and other chemical run-off by a vegetated buffer strip at least 50' wide. This area should be left unmowed and in a natural condition.
ROADS	
Roads should be kept to minimum standards on widths and lanes (this reduces road kills by slowing traffic and reducing the distance turtles need to cross).	Tunnels should be considered in areas with concentrations of turtle crossings (more than 10 turtles per year per 100 meters of road), and in areas of lower density if the level of road use would make a safe crossing impossible for turtles. Contact your DNR Regional Nongame Specialist for further information on wildlife tunnels.
Roads should be ditched, not curbed or below grade. If curbs must be used, 4 inch high curbs at a 3:1 slope are preferred (Blanding's turtles have great difficulty climbing traditional curbs; curbs and below grade roads trap turtles on the road and can cause road kills).	Roads should be ditched, not curbed or below grade.

ROADS cont.	
Culverts between wetland areas, or between wetland areas and nesting areas, should be 36 inches or greater in diameter, and elliptical or flat-bottomed.	Road placement should avoid separating wetlands from adjacent upland nesting sites, or these roads should be fenced to prevent turtles from attempting to cross them (contact your DNR Nongame Specialist for details).
Wetland crossings should be bridged, or include raised roadways with culverts which are 36 in or greater in diameter and flat-bottomed or elliptical (raised roadways discourage turtles from leaving the wetland to bask on roads).	Road placement should avoid bisecting wetlands, or these roads should be fenced to prevent turtles from attempting to cross them (contact your DNR Nongame Specialist for details). This is especially important for roads with more than 2 lanes.
Culverts under roads crossing streams should be oversized (at least twice as wide as the normal width of open water) and flat-bottomed or elliptical.	Roads crossing streams should be bridged.
UTILITIES	
Utility access and maintenance roads should be kept to a minimum (this reduces road-kill potential).	
Because trenches can trap turtles, trenches should be checked for turtles prior to being backfilled and the sites should be returned to original grade.	
LANDSCAPING AND VEGETATION MANAGEMENT	
Terrain should be left with as much natural contour as possible.	As much natural landscape as possible should be preserved (installation of sod or wood chips, paving, and planting of trees within nesting habitat can make that habitat unusable to nesting Blanding's turtles).
Graded areas should be revegetated with native grasses and forbs (some non-natives form dense patches through which it is difficult for turtles to travel).	Open space should include some areas at higher elevations for nesting. These areas should be retained in native vegetation, and should be connected to wetlands by a wide corridor of native vegetation.
Vegetation management in infrequently mowed areas -- such as in ditches, along utility access roads, and under power lines -- should be done mechanically (chemicals should not be used). Work should occur fall through spring (after October 1st and before June 1st).	Ditches and utility access roads should not be mowed or managed through use of chemicals. If vegetation management is required, it should be done mechanically, as infrequently as possible, and fall through spring (mowing can kill turtles present during mowing, and makes it easier for predators to locate turtles crossing roads).

Protecting Blanding's Turtle Nests: Most predation on turtle nests occurs within 48 hours after the eggs are laid. After this time, the scent is gone from the nest and it is more difficult for predators to locate the nest. Nests more than a week old probably do not need additional protection, unless they are in a particularly vulnerable spot, such as a yard where pets may disturb the nest. Turtle nests can be protected from predators and other disturbance by covering them with a piece of wire fencing (such as chicken wire), secured to the ground with stakes or rocks. The piece of fencing should measure at least 2 ft. x 2 ft., and should be of medium sized mesh (openings should be about 2 in. x 2 in.). It is ***very important*** that the fencing be **removed before August 1st** so the young turtles can escape from the nest when they hatch!

REFERENCES

[1]Association for Biodiversity Information. "Heritage Status: Global, National, and Subnational Conservation Status Ranks." NatureServe. Version 1.3 (9 April 2001). http://www.natureserve.org/ranking.htm (15 April 2001).

Coffin, B., and L. Pfannmuller. 1988. Minnesota's Endangered Flora and Fauna. University of Minnesota Press, Minneapolis, 473 pp.

REFERENCES (cont.)

Moriarty, J. J., and M. Linck. 1994. Suggested guidelines for projects occurring in Blanding's turtle habitat. Unpublished report to the Minnesota DNR. 8 pp.

Oldfield, B., and J. J. Moriarty. 1994. Amphibians and Reptiles Native to Minnesota. University of Minnesota Press, Minneapolis, 237 pp.

Sajwaj, T. D., and J. W. Lang. 2000. Thermal ecology of Blanding's turtle in central Minnesota. Chelonian Conservation and Biology 3(4):626-636.

CAUTION

BLANDING'S TURTLES

MAY BE ENCOUNTERED IN THIS AREA

The unique and rare Blanding's turtle has been found in this area. Blanding's turtles are state-listed as Threatened and are protected under Minnesota Statute 84.095, Protection of Threatened and Endangered Species. Please be careful of turtles on roads and in construction sites. For additional information on turtles, or to report a Blanding's turtle sighting, contact the DNR Nongame Specialist nearest you: Bemidji (218-308-2641); Grand Rapids (218-327-4518); New Ulm (507-359-6033); Rochester (507-280-5070); or St. Paul (651-259-5764).

DESCRIPTION: The Blanding's turtle is a medium to large turtle (5 to 10 inches) with a black or dark blue, dome-shaped shell with muted yellow spots and bars. The bottom of the shell is hinged across the front third, enabling the turtle to pull the front edge of the lower shell firmly against the top shell to provide additional protection when threatened. The head, legs, and tail are dark brown or blue-gray with small dots of light brown or yellow. A distinctive field mark is the bright yellow chin and neck.

BLANDING'S TURTLES DO NOT MAKE GOOD PETS
IT IS ILLEGAL TO KEEP THIS THREATENED SPECIES IN CAPTIVITY

SUMMARY OF RECOMMENDATIONS FOR AVOIDING AND MINIMIZING IMPACTS TO BLANDING'S TURTLE POPULATIONS

(see Blanding's Turtle Fact Sheet for full recommendations)

- This flyer should be given to all contractors working in the area. Homeowners should also be informed of the presence of Blanding's turtles in the area.
- Turtles that are in imminent danger should be moved, by hand, out of harms way. Turtles that are not in imminent danger should be left undisturbed to continue their travel among wetlands and/or nest sites.
- If a Blanding's turtle nests in your yard, do not disturb the nest and do not allow pets near the nest.
- Silt fencing should be set up to keep turtles out of construction areas. It is critical that silt fencing be removed after the area has been revegetated.
- Small, vegetated temporary wetlands should not be dredged, deepened, or filled.
- All wetlands should be protected from pollution; use of fertilizers and pesticides should be avoided, and run-off from lawns and streets should be controlled. Erosion should be prevented to keep sediment from reaching wetlands and lakes.
- Roads should be kept to minimum standards on widths and lanes.
- Roads should be ditched, not curbed or below grade. If curbs must be used, 4" high curbs at a 3:1 slope are preferred.
- Culverts under roads crossing wetland areas, between wetland areas, or between wetland and nesting areas should be at least 36 in. diameter and flat-bottomed or elliptical.
- Culverts under roads crossing streams should be oversized (at least twice as wide as the normal width of open water) and flat-bottomed or elliptical.
- Utility access and maintenance roads should be kept to a minimum.
- Because trenches can trap turtles, trenches should be checked for turtles prior to being backfilled and the sites should be returned to original grade.
- Terrain should be left with as much natural contour as possible.
- Graded areas should be revegetated with native grasses and forbs.
- Vegetation management in infrequently mowed areas -- such as in ditches, along utility access roads, and under power lines -- should be done mechanically (chemicals should not be used). Work should occur fall through spring (after October 1st and before June 1st).

Compiled by the Minnesota Department of Natural Resources Division of Ecological Resources, Updated March 2008
Endangered Species Environmental Review Coordinator, 500 Lafayette Rd., Box 25, St. Paul, MN 55155 / 651-259-5109