

Langdon Wind, LLC

700 Universe Blvd.
Juno Beach, Florida, 33408-2683

February 5, 2008

Ilona A. Jeffcoat-Sacco
Executive Secretary
North Dakota Public Service Commission
600 E. Boulevard, Dept.408
Bismarck, ND 58505-0480

**RE: Langdon Wind, LLC Application for a Certificate of Site Compatibility for the
Langdon Wind Energy Center (Langdon Wind), Docket Number PU-07-722**

Dear Ms. Jeffcoat-Sacco:

Pursuant to North Dakota Century Code 49-22-08 and 49-22-08.1, under the Energy Conversion and Transmission Facility Siting Act, and promulgated rules, Langdon Wind, LLC (Langdon Wind) has enclosed the following:

1. An original and ten copies of an Application for a Certificate of Site Compatibility for the Langdon Wind Energy Center (Langdon Wind), Docket Number PU-07-26.
2. A check for the application fee in the amount of \$36,500.00

Please contact me at (561) 691-7240 or Scott_Scovill@fpl.com should you have any questions with respect to this filing.

Sincerely,



Scott Scovill
Project Director

cc: Brian Bjella (Applicants Counsel)

**STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION**

Case No. PU-07-722

**In the Matter of the Application of
Langdon Wind, LLC for an Amendment
To Certificate of Site Compatibility to
Add an Additional 40.5 Megawatts of
Renewable Energy to its Langdon Wind
Energy Center in Cavalier County,
North Dakota.**

**APPLICATION OF LANGDON WIND, LLC FOR AN AMENDMENT TO
CERTIFICATE OF SITE COMPATIBILITY, CERTIFICATE NO. 6 TO ADD AN
ADDITIONAL 40.5 MEGAWATTS OF RENEWABLE WIND ENERGY TO ITS
EXISTING LANGDON WIND ENERGY CENTER, AND FOR A WAIVER OR
REDUCTION OF CERTAIN PROCEDURES AND TIME SCHEDULES.**

Langdon Wind, LLC (“Langdon Wind”) whose address for purposes of this Application is 700 Universe Boulevard, Juno Beach, Florida 33408-2683, pursuant to the Energy Conversion and Transmission Facility Siting Act Codified at North Dakota Century Code Chapter 49-22 (“Act”), hereby submits this Application for an Amended to Certificate of Site Compatibility and Waiver or Reduction of Certain Procedures and Time Schedules (“Application”).

On May 31, 2007, in Case No. PU-07-26 the Public Service Commission (“Commission”) issued Certificate of Site Compatibility, Certificate No. 6, to Langdon Wind, LLC for construction of the Langdon Wind Energy Center in Cavalier County, North Dakota.

By this Application, Langdon Wind is requesting that Certificate No. 6 be amended so as to add an additional 40.5 MW of renewal wind energy to the Langdon Wind Energy Center.

Langdon Wind requests the Commission waive and/or reduce procedures and time schedules required in the Act or in the Commission’s regulations set forth in Title 69-06 of the North Dakota Administrative Code to accomplish the purposes as requested herein. These include, but are not limited to: (1) waive, pursuant to North Dakota Century Code §§ 49-22-07.2, 49-22-13, and North Dakota Administrative Code § 69-06-01-02(3) and Chapter 69-06-06; provisions of North Dakota Century Code §§ 49-22-08(5), 49-22-08(1), 49-22-13 and North Dakota Administrative Code § 69-06-01-02 which requires hearings on such applications and certain time schedules and procedures as set forth in such statutes and rules; (2) not hold a public hearing in this Application, but pursuant to North Dakota Century Code § 49-22-13(2) and North Dakota Administrative Code § 69-06-01-02(3) publish a notice of opportunity for hearing as provided for therein; (3) find that the proposed facilities are of such design, location and purpose that they will produce minimal adverse effects; and (4) designate and approve the requested

facilities as identified in this Application and issue the appropriate amended certificate of site compatibility.

The Commission's application guidelines for waivers of procedures and time schedules require the description of the facility, the need for the facility, the cost of the facility and separate justification for each provision of the Act which the Applicant is requesting a waiver, together with evidence that the project will produce minimal adverse effects. As demonstrated in this Application and summarized below, Langdon Wind's request for waivers or reduction of procedures and time schedules and the issuance of an amended Certificate of Site Compatibility are justified as the proposed facilities are of such design, location, and purpose that they will produce minimal adverse effects.

DESCRIPTION

Langdon Wind proposes to construction 27 additional wind turbines to its existing Langdon Wind Energy Center, one or more permanent meteorological towers, access roads and underground collection lines so as to contribute up to 40.5 MW of renewable wind power to the energy grid.

NEED

North Dakota offers tremendous renewable energy potential to the state and regional power system. Renewable energy has numerous benefits to the citizens of the region, including minimizing emissions from conventional power plants. Wind energy also benefits local economies during construction and operation of the wind energy center. Energy generated at the wind energy facility and transmitted to the regional electric system will be supplied to regional power customers.

COST

The estimated cost of constructing the addition to the Langdon Wind Energy Center is approximately \$73,000,000.00.

JUSTIFICATION

As previous noted, in Case No. PU-07-26 the Commission granted Certificate of Site Compatibility No. 6 to Langdon Wind for construction of the Langdon Wind Energy Center. The proposed project would be an addition to said wind energy center and contribute an additional 40.5 MW of renewal wind energy. In that case, extensive cultural resource survey material was completed. Langdon Wind has updated said survey material for purposes of this Application. The cultural resource material demonstrates that there will be minimal adverse effects by such construction.

For the foregoing reasons, Langdon Wind submits there is substantial justification for waivers and/or reduction of procedures and time schedules, as this proposed addition to the Langdon Wind Energy Center will produce minimal adverse effects.



**Langdon Wind Energy Center – Phase II
Langdon Wind, LLC
Cavalier County, North Dakota**

**Supplemental Application to the North Dakota Public Service Commission
for an Amended Certificate of Site Compatibility**

Prepared for:
Langdon Wind, LLC
10812 Hwy 66 NE
Osnabrock, ND 58269

Prepared by:
Tetra Tech EC, Inc.
133 Federal Street
Boston, MA 02110



TETRA TECH EC, INC.

LANGDON WIND ENERGY CENTER – PHASE II

Case No.: PU-07-722

Supplemental Application to the North Dakota Public Service Commission for an Amended Certificate of Site Compatibility

February 2008

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*Langdon Wind, LLC
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Osnabrock, ND 58269*

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TETRA TECH EC, INC.

*Tetra Tech EC, Inc.
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1.0 INTRODUCTION

Langdon Wind, LLC (Langdon Wind) is submitting this supplemental application for a Certificate of Site Compatibility (Certificate) to construct the second phase of the Langdon Wind Energy Center. In March 2007, Langdon Wind submitted an application for a Certificate (Case No. PU-07-26) to the North Dakota Public Service Commission (PSC) for construction of Langdon I, a 159 megawatt (MW) wind generation facility in Cavalier County, North Dakota. Langdon I consists of approximately 30,059 acres (47 square miles) located one-half mile southeast of the City of Langdon, North Dakota. On May 31, 2007, the North Dakota PSC issued an Order for the 159 MW facility (Appendix A). The second phase of the Langdon Wind Energy Center (the project) will be referred to in this supplemental application as Langdon II. Langdon II is also located in Cavalier County, North Dakota, (Figures 1 and 2) and would add 27 wind turbine generators to the Langdon Wind Energy Center, resulting in an additional 40.5 megawatts (MW) and an overall project wind generation capacity of 199.5 MW. Additional facilities included in this supplemental application consist of up to two additional meteorological towers and below-ground electrical collection cable system(s).

Langdon Wind is a wholly-owned subsidiary of FPL Energy, LLC (“FPL Energy”) headquartered in Juno Beach, Florida. FPL Energy companies develop environmentally responsible electric generation projects throughout the United States. FPL Energy entities collectively own and operate nearly 5,100 MW of renewable energy generation capacity, including 13 projects in Iowa, Wisconsin, Minnesota, North Dakota, and South Dakota with a combined energy generation of over 750 M

1.1 Compliance with the Energy Conversion and Transmission Facility Siting Act Chapter 49-22

The North Dakota Energy Conversion and Transmission Facility Siting Act requires an application for a Certificate to meet the criteria set forth in North Dakota Century Code (NDCC) 49-22. The siting of an energy conversion facility is to be made in an orderly manner compatible with environmental preservation and the efficient use of resources (NDCC 49-22-02).

To the extent available, Langdon Wind has presented information required by the North Dakota Energy Conversion and Transmission Facility Siting Act to the North Dakota PSC. Langdon Wind has considered exclusion and avoidance areas in the selection criteria, and the policy criteria in the design of the project. In addition, sufficient project design, wind resource, and technical information have been provided for a thorough evaluation of the Langdon II site. Table 1 outlines the information required to fulfill the requirements for a Certificate with the Commission and where these requirements are addressed in this document.

Langdon Wind has submitted an application for a Conditional Use Permit from Cavalier County for the Langdon II site. This permit was granted on November 6, 2007 (Appendix D.7). Langdon II will connect its underground collection lines to the permitted part of the first phase of the Langdon project. A Certificate of Corridor Compatibility will not be required for Langdon II.

Table 1
Certificate Completion Checklist

State Authority	Description	Section of Application
Chapter 49-22	PSC Guidelines: Energy Conversion and Transmission Facility Siting	1.1
Section A	Description	1.4, 5.0
1.	Type: Describe the type of energy conversion facility proposed and provide a diagram of the major process system or a flow diagram.	1.4
2.	Product: Describe in general terms and technical terms the products to be produced by the proposed facility.	1.4, 6.1, 6.3
3.	Size and Design: Provide the following description of the production capacity and design	1.4, 4.1, 4.2, 6.0
a.	Gross design capacity;	1.4
b.	Net design capacity;	1.4
c.	Estimated thermal efficiency of the energy conversion process and the assumptions upon which the estimate is based;	N/A
d.	The number of acres that the proposed facility will occupy; and	3.0
e.	One (1) copy of all design data reports separate from the application.	Appendix C
4.	Time Schedule: Provide the anticipated time schedule for the accomplishment of the following:	1.4
a.	Certificate of Site Compatibility;	1.4
b.	Land acquisition complete;	1.4
c.	Construction start date;	1.4
d.	Construction complete;	1.4
e.	Test operations;	1.4
f.	Commercial production date;	1.4
g.	100 percent capacity factor; and	1.4
h.	Any expansion or additions.	1.4

State Authority	Description	Section of Application
Section B	Studies	
	Provide a copy of any evaluative studies or assessments of the environmental impact of the proposed facility submitted to any federal, regional, state or local agency.	Appendix D
Section C	Need for Facility	2.0
1.	An analysis of the need for the proposed facility based on present and projected demand for the product or products to be produced by the proposed facility, including the most recent system studies supporting the analysis of the need.	2.1
2.	A description of any feasible alternative methods of serving the need.	2.2
3.	A statement justifying any deviations from the most recent Ten-Year Plan which the proposed facility may present.	2.3
Section D	Location	1.0, 1.4, 3.0, 5.0
1.	Select a study area, which includes the proposed facility site, of sufficient size to enable the Commission to evaluate the factors addressed in Section 49-22-09, NDCC.	3.0
2.	Discuss the utility's policies and commitments to limit the environmental impact of its facilities, including copies of board resolutions and management directives.	Appendix B
3.	Identify and map the criteria that led to the proposed facility location within the study area.	3.0, Figure 3
4.	Discuss in detail the relative value of each criteria and how the proposed facility location was selected giving consideration to all criteria.	3.0
5.	The criteria to be evaluated shall include at a minimum all of the following which are within the study area:	3.0
a.	Exclusion areas;	3.1, Figure 3
b.	Avoidance areas;	3.2, Figure 3
c.	Selection criteria;	3.3
d.	Policy criteria;	3.4
e.	Design and construction limitations; and	3.5
f.	Economic considerations.	3.6
6.	Discuss the mitigative measures that will be taken to minimize adverse impacts which result from the location, construction, and operation of the proposed facility.	7.2.3, 7.3.3, 7.4.3, 7.5.3, 7.6.3, 7.7.3, 7.8.3, 7.9.3,

State Authority	Description	Section of Application
		7.10.3, 7.11.3, 7.12.3, 7.13.3, 7.14.3, 7.15.3, 7.16.3, 7.17
7.	List the qualifications of the people in the various disciplines that contributed to the facility site location study	11.0
8.	Maps	Figures
a.	Map the criteria within the study area showing the proposed facility location. Several different criteria may be shown on each map, depending on the map scale and the density and nature of the criteria. Minimum map scale shall be ½ inch = 1 mile. All maps shall be at the same scale unless otherwise specified.	Figures
b.	Furnish one Mylar map, separate from the application, of the same scale as the criteria maps and showing the same basic features as the criteria maps, including the study area, but not the proposed facility location.	Figures (PSC Staff supports not providing a Mylar map)
NDCC 49-22-09	Factors to be considered in evaluating applications and designation of sites, corridors, and routes.	10.0
1.	Available research and investigations relating to the effects of the location, construction, and operation of the proposed facility on public health and welfare, natural resources, and the environment.	10.1
2.	The effects of new energy conversion and transmission technologies and systems designed to minimize adverse environmental effects.	10.2
3.	The potential for beneficial uses of waste energy from a proposed energy conversion facility	10.3
4.	Adverse direct and indirect environmental effects which cannot be avoided should the proposed site or route be designated.	10.4
5.	Alternatives to the proposed site, corridor or route which are developed during the hearing process and which minimize adverse effects.	10.5
6.	Irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated.	10.6
7.	The direct and indirect economic impacts of the proposed facility	10.7
8.	Existing plans of the state, local government, and private entities for other developments at or in the vicinity of the proposed site, corridor, or route.	10.8
9.	The effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites.	10.9
10.	The effect of the proposed site or route on areas which are unique because of biological wealth or because they are habitats for rare and endangered species	10.10
11.	Problems raised by federal agencies, other state agencies, and local entities.	10.11

1.2 Flexibility in Langdon II Siting

Wind facility siting is a process through which input is considered from several different entities and disciplines. When considering where to locate the Langdon II addition within the project, Langdon Wind identified the current project area for further investigation due to its proximity to Langdon I, its pre-existing infrastructure and its expected wind resource. Langdon Wind subsequently conducted environmental desktop and field studies of the proposed expansion area, the results of which are embodied in the appropriate sections of this supplemental application. The next step in the development process was to secure the site by entering into agreements with landowners that were interested in having Langdon II wind turbines on their properties.

Once the site was selected and secured, the next step in the process was to identify preliminary turbine locations based on initial site inspection, topographic maps, known environmentally sensitive areas, review of North Dakota's power plant siting exclusion and avoidance areas, review of Cavalier County siting requirements, and communications with Local, State and Federal agencies. These preliminary turbine locations are presented in this supplemental application for a Certificate (Figures 2 through 5). This preliminary site plan is the commonly accepted standard for applications in other jurisdictions. Langdon Wind is not seeking a permit for each wind turbine indicated on the map. Instead, the preliminary layout indicates areas of the site with good wind resource and no known siting restriction issues.

Upon receipt of the Certificate for Langdon I, additional studies required by the Certificate and the siting process, including geotechnical studies and more detailed wetland, biological, and cultural resource surveys, were completed. Langdon Wind also obtained input from landowners regarding the location of wind facilities for both Langdon I and Langdon II. Once the Certificate for Langdon II is obtained, Langdon Wind will utilize the results of the studies performed for Langdon I in siting preliminary turbine locations and will perform any additional studies stipulated in the Certificate. As was acceptable for Langdon I, a final site plan for the project will be submitted to the Commission prior to construction and a pre-construction meeting will be held with Commission staff to ensure that the site plan conforms to the Certificate requirements.

Ideally, the Certificate provides the parameters within which the developer may optimize the Langdon II site. With Certificate conditions in place, the developer is able to proceed with planning and development. Early approval of a Certificate is not only consistent with circumstances unique to wind project siting, but it is also essential to timing given the uncertainty and limited duration of the federal production tax credit (PTC) necessary for wind project development.

1.3 Langdon I Project Summary

On March 21, 2007, Langdon Wind submitted an application for a Certificate (Case No. PU-07-26) to the North Dakota PSC for construction of Langdon I, a 159 MW wind generation facility in Cavalier County, North Dakota. Langdon I consists of approximately 30,059 acres (47 square miles) located one-half mile southeast of the City of Langdon, North Dakota. The Langdon I Project Site location and final layout are shown on Figure 1 and described in Table 2 below. Langdon Wind selected the project area based on optimal wind resource, transmission interconnection, and environmental and economic factors. The project area was also selected considering the exclusion and avoidance criteria outlined in North Dakota Administrative Code (NDAC) 69-06-08. No alternative project areas were considered during initial project planning.

Table 2
Langdon I Site Location

Township Name	Township	Range	Sections
Perry	160N	60W	13, 23-25, 35
Easby	160N	59W	2-4, 7-10, 18
Nekoma	159N	60W	12-13, 24
Osnabrock	159N	59W	6-9, 16-22

Upon receipt of the Order from the North Dakota PSC on May 31, 2007 (Appendix A), Langdon Wind began construction of Langdon I. The Langdon I project was fully commissioned on January 8, 2008 with a nameplate (gross) capacity of 159 MW. Assuming net capacity factors of between 40 and 45 percent, the projected average annual output is estimated between 460,000 to 630,000 megawatt hours (MWhs). As with all wind projects, output is dependent upon wind resource, final design, site-specific features, and equipment.

1.4 Langdon II Project Summary and Schedule

In this supplemental application, Langdon Wind is proposing to add approximately 27 1.5 MW GE turbines to the Langdon Wind Energy Center. As stated in the North Dakota Energy Conversion and Transmission Facility Siting Act, this supplemental application will comply with NDCC 49-22-02. However, Langdon Wind is submitting this application for Langdon II, including proposed turbine locations, collector lines, and a one mile buffer area (Table 3), as a supplement to the Langdon I application dated March 21, 2007. Information not presented in this supplemental application per NDCC 49-22-02 is contained in the original Langdon Wind Energy Center as specified in the pertinent sections of this application.

Table 3
Langdon II Site Location

Township Name	Township	Range	Sections
Easby	160N	59W	SE ¼, S ½ of the NE ¼, SE ¼ of the NW ¼, E ½ of the SW ¼, and the SW ¼ of the SW ¼ of Section 34
Osnabrock	159N	59W	W ½ of the W ½ of Section 2; N ½, NE ¼ of the NE ¼ of the SW ¼, N ½ of the SE ¼ of the SE ¼, all in Section 11
Nekoma	159N	60W	All of Section 2; E ½ and SW ¼ of Section 10

Once completed, Langdon II will have a nameplate (gross) capacity of up to 40.5 MW. Assuming net capacity factors of between 40 and 45 percent, the projected average annual output is estimated between 141,912 to 159,651 MWhs. As with all wind projects, output is dependent upon wind resource, final design, site-specific features, and equipment.

The commercial operation date is dependent upon permitting, equipment deliveries, and other development activities. Langdon Wind is targeting construction for May 2008 provided all pre-construction permits and approvals have been obtained.

1. Certificate of Site Compatibility: Langdon Wind anticipates the Certificate will be approved in April 2008.
2. Land Acquisition: Langdon Wind has executed easements from Langdon II landowners.
3. Permits: Langdon Wind is responsible for undertaking all required environmental studies, and will obtain all permits and licenses that are required following issuance of the Certificate.
4. Equipment Procurement, Manufacture and Delivery: Langdon Wind will order the wind turbine components as soon as practicable.
5. Construction: Construction is scheduled to begin in May 2008, subject to road restrictions and weather. The engineering, procurement, and construction (EPC) contractor will be responsible for completing all project construction, including roads, wind turbine assembly, and electrical and communications work. The construction will take approximately seven months to complete.
6. Test and Operations: Langdon Wind anticipates testing and operations to begin in November 2008.
7. Commercial Operation: Langdon Wind anticipates commercial operation of Landon II in December 2008.

As discussed in Section 1.4, the capacity factor is dependent upon the final design, equipment and site-specific features. The capacity factor for typical wind farms in the area is approximately 40 to 45 percent.

1.5 Langdon II Project Ownership

It is anticipated that Langdon Wind will manage the construction of all equipment and associated facilities related to the project. Langdon Wind will own the entire 40.5 MW Langdon II project. Langdon Wind will likely select a third-party contractor to perform the majority of the engineering and construction tasks of the wind farm. Langdon Wind will procure the turbine/tower package directly from a manufacturer.

2.0 NEED FOR FACILITY

2.1 Need Analysis

According to the Department of Energy, coal generation is the primary energy source in the State. Of the 3,525 MW of energy generated in 2006 in North Dakota, 93 percent was generated using coal-fired facilities (Energy Information Administration, 2006). According to a report prepared for the State of North Dakota Division of Community Services (PanAero Corporation 1999), “North Dakota is motivated to become a leading state in non-polluting wind generated electricity.” North Dakota’s goals include the following: general economic development, new wind project investments and construction, new landowner income, and new long-term jobs from broad professional services (such as wind project design, wind resource monitoring, and legal and accounting services) from commercial project operations and maintenance, and from the manufacturing of wind turbine components. In support of this effort, Langdon Wind is cooperating with regional utilities to add wind generation to their energy portfolio.

North Dakota has been identified as having more available wind for development than any other state. In recent years the Mid-Continent Area Power Pool (MAPP) has consistently reinforced the regional need for increased generating capacity in the coming decade. Cost fluctuations and reliability problems serve to reinforce the need for sufficient capacity, low-cost energy, and diverse generation sources. Independent power producers such as FPL Energy are widely recognized as essential to meeting regional energy needs, stabilizing energy costs, and enhancing energy reliability. The Project offers North Dakota and the MAPP region the opportunity to add to capacity, stabilize wholesale power prices, and provide electricity from a clean, cost-effective renewable energy generation facility.

There is a critical need for additional energy production in the MAPP region. The July 1, 2003, MAPP Load and Capability Report stated that, under the minimum reserve requirements, deficits were expected as soon as 2006. MAPP members were urged to build additional capacity in order to maintain reserve levels higher than the MAPP minimum. A review of the MAPP report dated August 1, 2006 was included in Section 2.1 of the Langdon I application and stated that deficits were expected by 2012. The most recent MAPP report, dated May 1, 2007, indicates that deficits are now expected by 2010. Table 3 outlines the MAPP surplus/deficit forecasts through 2016.

Table 4
MAPP Summer Season Surplus/Deficit*

Year	MW	Reserve Margin Percentage
2007	1754	4.9%
2008	725	2.0%
2009	82	0.2%
2010	-751	-1.9%
2011	-1392	-3.5%
2012	-1855	-4.6%
2013	-2436	-5.9%
2014	-3019	-7.2%
2015	-4625	-10.7%
2016	-5455	-12.4%

* From Pages III-3 and III-4 of the MAPP 2007 Load and Capability Report

While the deficits have been identified, the new sources to fill these deficiencies have not. North Dakota has a unique opportunity to begin providing capacity to meet those forecasted deficits with clean, efficient, renewable energy. The Langdon I Project is a significant source of energy for meeting the region's needs over the next 30 years. However, based on a review of the MAPP Load and Capacity Reports from 2003 to 2007, energy deficits are being forecasted earlier with each annual MAPP Report produced. The addition of Langdon II will serve to meet the region's increasing needs as shown in Table 3 above.

2.2 Alternatives

Feasible technology alternatives to wind generation include using coal, natural gas, or biomass. No technology alternatives were considered because these other technologies do not meet the State's goal of adding new wind energy.

2.3 Ten Year Plan

Langdon Wind will file a Ten-Year Plan with the Commission by July 2008.

3.0 SITE SELECTION CRITERIA

The Langdon II project includes up to 27 wind turbines and covers an area approximately 25,530 acres (40 square miles) in size. More than half of the Langdon II project area is located within the boundary of the Langdon I project with the remaining proposed Langdon II project area encompassing approximately 9,607 acres (15 square miles) of land adjacent to the eastern and western boundaries of the Langdon I project area. Siting turbines is a process through which input from several different entities is considered. The Langdon II Project Area was singled out as an optimal site from environmental and wind resource perspectives and also due to its proximity to Langdon I (Figure 2).

Langdon Wind secured voluntary wind option agreements with landowners in the Langdon II Site and then identified preliminary turbine locations based on site inspection, topographic maps, known environmentally sensitive areas, review of North Dakota’s power plant siting exclusion and avoidance areas, review of Cavalier County and State wind siting requirements, and communications with Local, State, and Federal agencies. Langdon Wind also used this siting process in the original Langdon I Wind Energy Center project. Through this process, Langdon Wind not only addresses environmental issues that commonly arise during project development, but also works within the parameters of State rules. North Dakota has several site selection criteria that are considered by the Commission to determine suitability of the site. Langdon Wind has reviewed the criteria in Chapter 69-06-08 and has factored these criteria into the site design of Langdon II. No changes in exclusion or avoidance zone policies for the initial phase of the project will occur. These criteria are discussed in this section.

3.1 Exclusion Areas

Per Section 69-06-08-01-1, the following geographical areas (Table 5) shall be excluded in the consideration of a site for an energy conversion facility, and shall include a buffer zone of a reasonable width to protect the integrity of the area. Exclusion areas are mapped for the project area on Figure 3.

3.2 Avoidance Areas

Per Section 69-06-08-01-2, the following geographical areas (Table 6) shall not be approved as a site for an energy conversion facility unless the applicant shows that under the circumstances there is no reasonable alternative. In determining whether an avoidance area should be designated for a facility the Commission may consider among other things, the proposed management of adverse impacts, the orderly siting of facilities, system reliability and integrity, the efficient use of resources, and alternative sites. Avoidance areas are also mapped for the project area on Figure 3.

Table 5
Exclusion Areas

Exclusion Area	Present within Project Site?	Proposed Buffer	Section Addressed
Designated or registered national areas: parks; memorial parks; historic sites and landmarks; natural landmarks; historic districts; monuments; wilderness areas; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	Present	Langdon Wind is consulting with the USFWS. Langdon Wind will again establish a buffer of 0.25 miles from Waterfowl Production Areas and request variances as necessary.	7.7, 7.9, 7.13, 7.14, 7.15, Figure 3
Designated or registered state areas: parks; forests; forest management lands; historic sites; monuments; historical markers; archaeological sites; grasslands; wild, scenic, or recreational rivers; game refuges; game management areas; management areas; and nature preserves.	None	Although no archeological sites were identified in the project area, one site was identified approximately 0.80 miles or greater to the east of Langdon I but within the viewshed of the pyramid. The nearest Phase II turbine is over one mile distant. Langdon Wind submitted a mitigation plan to the State Historic Preservation Office (SHPO) and the Army which will assist in the development of an interpretive system to improve the preservation efforts of the Nekoma Pyramid and associated Safeguard Complex. No additional buffer is necessary.	7.7, 7.8, 7.9, 7.15, 7.17, Figure 3
County parks and recreational areas; municipal parks; parks owned or administered by other governmental subdivisions; hardwood draws; and enrolled woodlands.	None		7.8
Prime farmland and unique farmland, as defined by the land inventory and monitoring division of the soil conservation service, United States department of agriculture, in 7 C.F.R. part 657; provided, however, that if the Commission finds that the prime farmland and unique farmland that will be removed from use for the life of the facility is of such small acreage as to be of negligible impact on agricultural productions, such exclusion shall not apply.	Present	No buffer is proposed. Prime farmland has been avoided to the extent practicable. Impacts to prime farmland will affect less than 0.02 percent of the yearly production for the top five commodities in Cavalier County.	7.9, 7.10, Figures 13 and 14
Irrigated land	None		7.9
Areas critical to threatened or endangered animal or plant species	None	No areas critical to threatened and endangered species have been identified in the project site.	7.16
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged.	Present	One rare plant, big bluestem (<i>Andropogon gerardii</i>), occurs in the southwest portion of the project area. The plant is a wetland species and will be avoided along with the wetland.	7.13, 7.14, 7.15, 7.16, Figure 3

Table 6
Avoidance Areas

Avoidance Areas	Present within Project Site?	Proposed Buffer	Section Addressed
Historical resources which are not designated as exclusion areas	None	In conformance with the Certificate for Langdon I, Class II and III surveys were performed.	7.7, Appendix D
Areas within the city limits of a city or the boundaries of a military installation	City limits-None Military-None		7.3, Figure 1
Areas within known floodplains as defined by the geographical boundaries of the 100-year flood	None		7.12
Areas that are geologically unstable	None		7.11
Woodlands and wetlands	Present	Langdon Wind recommends a buffer of 0.25 miles around waterfowl production areas. All other wetland resources will be avoided to the extent practicable. Woodland impacts are not anticipated.	7.13, 7.14, Figures 3, 13 and 16
Areas of recreational significance which are not designated as exclusion areas	None		7.8

3.3 Selection Criteria

Per Section 69-06-08-01-3, a site shall be approved in an area only when it is demonstrated to the Commission by the applicant that any significant adverse effects resulting from the location, construction, and operation of the facility in that area, as they relate to the following, will be at an acceptable minimum, or that those effects will be managed and maintained at an acceptable minimum (Table 7).

3.4 Policy Criteria

Per Section 69-06-08-01-4, the Commission may give preference to an applicant that will maximize benefits that result from the adoption of the following policies and practices, and in a proper case may require the adoption of such policies and practices (Table 8).

**Table 7
 Selection Criteria**

Selection Criteria	Potential Adverse Effects	Section Addressed
The impact upon agriculture:		
Agricultural production	Assuming all 27 turbines are 1.5 MW, approximately three acres of land will be impacted due to turbine placement and an additional 22 acres due to access roads. Wind turbine configuration will not result in significant impacts to agricultural production.	7.3, 7.9
Family farms and ranches	No turbines will be placed within 1,400 feet of family homes. Land area would be lost to the construction of access roads and turbines; however, wind lease payments to farmers will provide a supplemental source of income.	7.2, 7.3, 7.10, Figure 4
Land which the owner demonstrates has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation	No owner, where impacts are expected, has expressed concerns related to economically suitable irrigation on their land. Currently no irrigation is occurring within the project area.	7.9, 7.10, Figures 14 and 15
Surface drainage patterns and ground water flow patterns	No impacts to surface drainage patterns or groundwater flow patterns will occur.	7.11, 7.12, 7.13, Figure 16
The agricultural quality of the cropland	No impacts to the agricultural quality of the cropland are anticipated. If compaction of soils occurs during construction, Langdon Wind will work with the landowners to alleviate the compaction.	7.9, 7.10
The impact upon the availability and adequacy of:		
Law enforcement	No impacts are anticipated.	7.4
School systems and education programs	No adverse effects are expected. Additional revenue for the educational system will be a result of additional tax revenues.	7.4
Governmental services and facilities	Governmental services and facilities will not be impacted. Additional revenue will be a result of additional tax revenues.	7.4
General and mental health care facilities	General and mental health care facilities will not be impacted.	7.4
Recreational programs and facilities	No impacts are anticipated.	7.4
Transportation facilities and networks	During construction an increase in vehicle trips per day is anticipated for the duration of project construction. During facility operation no significant impacts are anticipated.	7.4, Figure 9
Retail service facilities	No adverse impacts anticipated.	7.4
Utility services	Langdon Wind will utilize station service from Minnkota Power Cooperative. MAPP will suggest appropriate configurations for the electrical system, and Langdon Wind will abide by the recommendations to prevent impacts to the transmission system.	2.0, 6.0, 7.4

Table 7 (Continued)

Selection Criteria	Potential Adverse Effects	Section Addressed
The impact upon		
Local institutions	No impacts are anticipated.	7.4
Noise sensitive land uses	The noise sensitive land uses within the project area are the residences near turbine locations. As long as no turbines are sited within 1,400 feet of a sensitive land use, noise levels will not exceed the generally accepted 50 dBA standard (Cavalier County has no noise standards).	7.6, Figures 3, 4, and 10
Rural residences and businesses	No turbines will be placed within 1,400 feet of family homes.	7.2, 7.3, 7.10, Figure 4
Aquifers	No impacts will occur.	7.11
Human health and safety	If mitigative measures are implemented as discussed in Section 7.5.3 and maintenance schedules are met, no impacts to human health and safety are anticipated.	6.3, 6.5.2, 6.5.3, 7.5
Animal health and safety	<p>No impacts to livestock are anticipated from operation of the facility. Based on biological surveys conducted in this area, there is a potential for small numbers of avian species to have collisions with the turbines for the project, but the impact is expected to be minimal. Langdon Wind conducted pre-construction monitoring of avian species and will implement Wildlife Response Reporting System (WRRS) monitoring once turbine construction is completed.</p> <p>Based on bat species distribution maps and the habitat present in the Project Area, it is highly unlikely sensitive bat species would regularly occur at the Project Area during the winter or summer seasons.</p> <p>The impact of the project on wildlife is expected to be minimal (TtEC 2007c). Langdon Wind will implement measures to avoid and minimize effects to biological resources at the proposed site.</p>	7.10, 7.16, 7.15, Appendix D
Plant life	Assuming all turbines are 1.5 MW, approximately 25 acres of land will be used for the turbines and access roads. Land where the turbines will be sited is primarily agricultural.	7.9, 7.14, Figures 3 and 13
Temporary and permanent housing	Temporary housing will be utilized during construction. No adverse impacts are anticipated.	7.2
Temporary and permanent skilled and unskilled labor	No adverse effects are anticipated. Local contractors employed for construction will result in increased wages.	7.2
Existing and planned facilities and other industrial development	No impacts are anticipated to existing and planned facilities and other industrial development.	7.3

Table 8
Policy Criteria

Policy Criteria	Suitable Policy or Practice of Applicant	Section Addressed
Recycling of the conversion byproducts and effluents	None	N/A
Energy conservation through location, process, and design	Langdon Wind is developing the site to maximize the energy output. Langdon Wind will develop a site layout that optimizes wind resources while minimizing the impact on land resources and any potentially sensitive areas. Wind-powered electric generation is entirely dependent on the availability of the wind resource at a specific location. The energy available from the wind increases at the third power of the wind speed. In other words, a doubling of the wind speed will increase the available energy by a factor of eight times.	4.2
Training and utilization of available labor in this state for the general and specialized skills required	Langdon Wind will use local labor to the extent practicable.	7.2.
Use of a primary energy source or raw material located within the state	The energy generated at the site will utilize the wind resources of the state of North Dakota.	5.2
Non-relocation of residents	No residents will be relocated as a result of the project.	6.5, 7.2, 7.3, 7.9
The dedication of an area adjacent to the facility to land uses such as recreation, agriculture, or wildlife management	The project will not interfere with adjacent land uses. As such, it is not anticipated that areas adjacent will be dedicated to recreation, agriculture, or wildlife management issues.	7.3, 7.8, 7.9, 7.15, Figure 13
Economies of construction and operation	Langdon Wind will utilize local contractors to the extent practicable.	7.2
Secondary uses of appropriate associated facilities for recreation and enhancement of wildlife	None	N/A
Use of citizen coordinating committees	Langdon Wind will work with landowners of properties for the project.	8.0
A commitment of a portion of the energy produced for use in this state	Energy transmitted will be sold at the Langdon Substation to a regional utility.	2.1, 6.1
Labor relations	No labor relations will be affected.	6.5, 7.2
The coordination of facilities	Existing facilities and facility corridors were considered in the location of the wind farm and the associated facilities.	3.0, 3.6
Monitoring of impacts	Langdon Wind and the EPC contractor will employ best management practices (BMPs) during construction to monitor soil impacts and segregate topsoil. All disturbance sites exceeding appropriate size criteria will prepare storm water prevention plans. The WRRS will also be implemented upon completion of the project to monitor potential impacts to avian species.	7.11, 7.15, 7.16

3.5 Design and Construction Limitations

In general there are two design and construction limitations when building any wind farm: wind resources and landowner easements. The wind resource is essential to selecting and designing a wind farm. Langdon Wind conducts a thorough analysis of sites they select to ensure that the site has ample wind energy to generate revenue for the wind farm. Easements are another limitation to the design and construction of the project. Langdon Wind secured voluntary land agreements with landowners necessary to develop the second phase of the wind project.

Specific to the project, there are several additional items that are limiting factors when designing and constructing the project. Cavalier County does not have its own regulations for siting wind farms. Langdon Wind proposes setbacks from transmission lines consistent with their experience in developing Langdon I. These setbacks limit the amount of land available for wind development.

The U.S. Fish and Wildlife Service (USFWS) administers fee title Waterfowl Production Areas (WPA) and wetland and grassland easements on private property as part of their National Wildlife Refuge system. There are limitations to construction on these lands. Any direct impacts to USFWS easements will result in a compatibility assessment by local USFWS staff. The process considers the magnitude of the impact, the type or quality of the habitat which is impacted, and the feasibility of avoiding the impact. If compatibility is found, a right-of-way (ROW) permit will be issued for the impact. Langdon Wind proposes setbacks from WPAs and plans to avoid all wetland easements (there are no grassland easements in the project area). Figure 3 identifies the USFWS WPAs and wetland easements within the project area.

3.6 Economic Considerations

Economic factors considered during the selection of the first phase of the Langdon Wind Energy Center included wind resource, the availability of a transmission system in the vicinity of the project area, and the need to qualify for the Federal production tax credit (PTC). These factors were discussed in Section 3.6 of the original application for the Langdon Wind Energy Center dated March 21, 2007. The addition of Langdon II does not affect the economic considerations presented in the original application and will not be discussed in detail in this application.

4.0 GENERAL DESCRIPTION OF THE PROPOSED FACILITY

4.1 Wind Power Technology

As the wind passes over the blades of a wind turbine, it creates lift and causes the rotor to turn. The rotor is connected by a hub and main shaft to a system of gears, which are connected to a generator. Exact turbine models are subject to change to ensure selection of a turbine that is both cost effective and optimizes land and wind resources. Langdon Wind is proposing to add up to 27 additional turbines to the 106 turbines permitted during the first phase of the Langdon Wind Energy Center. This project again proposes to use all GE 1.5 MW machines as the representative turbine for the 1.5 MW class. Langdon Wind may elect to select turbines by other turbine vendors.

The GE Wind Energy 1.5 MW utility-grade wind turbine has a nominal nameplate rating of 1,500 kilowatts (kW). Each turbine will have an 80-meter (262 ft) hub height and a 77 m (254 ft) rotor diameter (RD) (Figure 6). The GE 1.5 MW turbine begins operation in wind speeds of 3.5 meters per second (m/s), or 7.8 miles per hour (mph), and reaches its rated capacity (1.5 MW) at a wind speed of 14.5 m/s (32.4 mph). The turbine is designed to operate in wind speeds of up to 25 m/s (45 mph) and can withstand sustained wind speeds of over 45 m/s (100 mph).

Each tower will be secured by a concrete foundation that can vary in design depending on the soil conditions. A control panel inside the base of each turbine tower houses communication and electronic circuitry. Each turbine is equipped with a wind speed and direction sensor that communicates to the turbine's control system to signal when sufficient winds are present for operation. These turbines feature variable-speed control and independent blade pitch to assure aerodynamic efficiency.

The electricity generated by each turbine is brought to a pad-mounted transformer where the voltage is raised (stepped up) to power collection line voltage of 34.5 kilovolts (kV). The electricity is collected by a system of underground or overhead power collection lines within the project site. Both power collection lines and communication cables will be direct-buried or may be constructed as overhead lines on private property or a public ROW. Typically, this infrastructure is run adjacent to project access roads or along public ROWs or easements. In cases where such infrastructure must be sited on property that is not governed by the existing wind easement and land lease options, Langdon Wind will obtain easements for the necessary property.

Each wind turbine will be accessible via all-weather aggregate-surfaced roads up to 36 feet in width providing access to the turbines via public roads. At the point where the access and public roads meet, the communication and power lines will either rise from underground to overhead lines or continue as underground feeder lines that will distribute power to the project substation constructed during Langdon I. Figure 7 is a diagram of the path of energy from the wind farm to energy users. Figure 8 shows the layout of a typical wind energy center.

4.1.1 Langdon II Layout

Langdon Wind will develop a site layout that optimizes wind resource and proximity to Langdon I while minimizing the impact on land resources and any potentially sensitive areas. Analysis of wind direction data suggests that the optimal turbine string alignments are from west to east and from east-northeast to west-southwest.

Cavalier County has not established setbacks for wind towers from property boundaries, road ROWs, and occupied residences or ordinances limiting turbine height. However, based on experience with other wind farms, Langdon Wind again proposes setbacks of 0.25 miles from USFWS WPAs, 420 feet from transmission lines, roads, and railroads, and 1,400 feet from occupied residences. Table 9 identifies the minimum setbacks applicable to the project. All setbacks proposed for this project are the same as those proposed for the initial project. Langdon Wind requested a Conditional Use Permit that allows tower heights up to 80 meters with turbine rotor diameters up to 96 meters for a maximum turbine height of 420 feet. This permit was granted on November 6, 2007 (Appendix D.7).

Table 9
Setback Distances for Wind Turbines

Setback Type	Distance
Property Boundary	130 feet
Occupied Residence	1,400 feet
USFWS Waterfowl Production Area (WPA)	0.25 miles
Overhead Transmission and Distribution Lines	420 feet

4.2 Associated Facilities

Langdon Wind will construct up to two meteorological towers within the project site boundary for the Langdon II Project. Including Langdon I, up to five permanent meteorological towers will be located within the project area.

An Operations and Maintenance (O&M) building and project substation were constructed as part of the first phase of the Langdon Project and are not addressed in this supplemental application. No additional aboveground facilities are proposed as a part of this phase of the project.

4.3 Land Rights

Langdon Wind has obtained easements for the Langdon II Project. Land rights will encompass the proposed wind farm and all associated facilities including, but not limited to, wind and buffer easements, wind turbines, access roads, underground collector and feeder lines, and overhead transmission lines located on public roads when necessary.

5.0 PROPOSED SITE

5.1 Identification of Project Site

In addition to wind resource considerations, the project site was selected based on its proximity to Langdon I, existing transmission infrastructure, an existing substation, and landowners' continued interest in participating in the project. Land-use patterns and environmentally sensitive features were factored into the site selection criteria. The Langdon II site boundary encompasses an area of approximately 25,530 acres of which only approximately 9,607 acres is outside of the first phase of the project. Additionally, the land occupied by the wind farm will be less than one percent of this area, assuming up to 27 1.5 MW capacity turbines with access roads. It is anticipated that the area of direct land use for the turbines and associated facilities will be approximately 25 acres, including aggregate-surfaced access roads up to 36 feet wide for the 1.5 MW turbines. See Section 7.0 for a detailed description of potential impacts within the project site. Figures 2 and 5 show proposed turbine locations, which are subject to change during micrositing.

5.2 Wind Characteristics within Vicinity of Project Site

The United States Department of Energy (DOE) and the North Dakota Division of Community Services have conducted wind resource assessment studies in North Dakota. The May 2004 DOE wind map for the state of North Dakota indicates that wind resource within the project vicinity are class 4 winds or greater. Class 4 winds have an average annual wind speed of 13 miles per hour.

5.3 Wind Characteristics within Project Site

Langdon Wind utilized wind data from two 50-meter meteorological towers on the project site and one 60-meter tower adjacent to the project site, which have been collecting data since the middle of 2004. Up to two additional meteorological towers are planned for the expansion site. The data from the project site was supplemented using Langdon NDAWN data and other data from a meteorological tower in Rolla, North Dakota. This meteorological tower is located approximately 25 miles north of the site and has been collecting data since the middle of 2003. In addition, Langdon Wind has secured information from other long-term references to aid in correlating the wind data on-site including 40-year re-analysis data processed by WindLogics. WindPRO and WAsP software were used to analyze the available wind data from the Rolla meteorological tower and make corrections for the site effects (topography, surface roughness, and obstacles) to produce a site independent characterization of the local wind climate. The resulting local wind climate was applied in conjunction with the project site effects to predict the spatial wind variations at the project site. Various site layouts and wind turbine generator parameters can be tested to predict the energy production and array efficiency to optimize the site layout and turbine selection. Project site data has been compared to the long term Rolla data and other regional wind measurements using a parallel time period. There is a good correlation between the long-term wind measurements and the short-term project site wind measurements. Based on the available data, the Rolla and Langdon Wind Energy Center can be judged as having similar wind climates.

6.0 ENGINEERING AND OPERATIONAL DESIGN ANALYSIS

This section provides a summary description of the project, which includes a description of the Langdon II Site layout, turbines, electrical system, and other wind farm infrastructure. A summary of this information is included in the Design Data Report (Appendix C). Additional information addressed in this section includes project construction, schedule, operation, and decommissioning of the site. However, none of the project engineering or operational criteria will vary from the initial application other than the addition and location of the 27 additional turbines.

Langdon Wind continues to reserve the right to evaluate and select turbine equipment of varying sizes and outputs. The current turbine array proposed utilizes up to 27 GE 1.5 MW wind turbines. Details for the GE 1.5 MW turbines are presented below.

6.1 Langdon II Project Layout and Associated Facilities

The project will consist of an array of wind turbines and transformers. The turbines will be interconnected by communication and electric power collection cable within the wind farm. In addition, the wind farm facilities will include feeder lines and 34.5 kV collector lines.

Land will be graded on-site for the turbine pads. Drainage systems, access roads, and storage areas will be installed as necessary to fully accommodate all aspects of project construction. Operation and maintenance of the new equipment will be accommodated by the O&M building constructed during Langdon I.

The electrical system design and interconnection details will be determined as a result of studies and discussions with MAPP. The project includes a computer-controlled communications system that allows automatic, independent operation, and remote supervision, thus providing simultaneous control of many wind turbines. Langdon Wind will be responsible for operation and maintenance of all equipment for the life of the project. Langdon Wind will contract with the most appropriate supplier of operations and maintenance services at the time of operation, to ensure timely and efficient operations. Langdon Wind will maintain a computer program and database for tracking each wind turbine's operational history.

6.2 Description of Wind Turbines

Langdon Wind anticipates using up to 27 GE 1.5 MW turbines for the project. Wind turbine specifications are identical to those presented in the Langdon I application and are presented in the original Langdon Wind Energy Center application dated March 21, 2007. However, Langdon Wind seeks the flexibility to select the most appropriate and current technology for Langdon II to ensure optimization of wind and land resources and cost efficiency. Langdon Wind will update the site layout, consistent with the parameters laid out in the Certificate, when equipment is selected and if information regarding the wind resource identifies opportunities to further optimize the site.

6.3 Description of Electrical System

At the base of each turbine a step-up transformer will be installed to raise the voltage to power collection line voltage of 34.5 kV. Power will be run through an underground collection system to the project feeder system that will feed power to the Langdon I project substation and eventually the point of interconnection. The electrical lines will be buried in trenches adjacent to the project access roads. At the

point where the access and public roads meet, the collection system will either rise from underground to the feeder system or continue as underground lines.

6.4 Langdon II Project Construction

Several activities must be completed prior to the proposed commercial production date. The majority of the activity relates to equipment ordering lead-time, as well as design and construction of the facility. Below is a preliminary schedule of activities necessary to develop the project. Pre-construction, construction, and post-construction activities for the project include:

- Ordering of all necessary components including towers, nacelles, blades, foundations, and transformers;
- Final turbine micrositing;
- Complete survey to microsite locations of structures and roadways;
- Soil borings, testing and analysis for proper foundation design and materials;
- Complete construction of access roads, to be used for construction and maintenance;
- Construction of overhead and/or underground feeder lines;
- Installation of tower foundations;
- Installation of underground cables;
- Tower placement and wind turbine setting;
- Acceptance testing of facility; and
- Commencement of commercial production date.

Private turbine access roads will be built adjacent to the towers, allowing access to the turbines during and after construction. These roads may be up to 36 feet wide and have an aggregate surface as cover, and be adequate to support the size and weight of maintenance vehicles. The specific turbine placement will determine the amount of private roadway that will be constructed for the project.

During the construction phase, several types of light, medium and heavy-duty construction vehicles will travel to and from the site, as well as private vehicles used by the construction personnel. Langdon Wind estimates that there will be approximately 50 trips per day in the area during peak construction periods. That volume will occur during the peak time when the majority of the road, foundation and tower assembly are taking place. At the completion of each construction phase this equipment will be removed from the site or reduced in number.

6.4.1 Construction Management

An engineering, procurement and construction (EPC) contractor will be primarily responsible for the construction management of the project. The EPC contractor will use the services of local contractors, where possible, to assist in project construction. The EPC contractor, in coordination with local contractors, will undertake the following activities:

- Securing building, electrical, grading, road, and utility permits;
- Perform detailed civil, structural and electrical engineering;

- Schedule execution of construction activities;
- Complete surveying and geotechnical investigations; and
- Forecast project labor requirements and budgeting.

The EPC contractor also serves as key contact and interface for subcontractor coordination. The EPC contractor will oversee the installation of communication and power collection lines as well as the substation. The EPC contractor will also oversee the installation of roads, concrete foundations, towers, machines, and blades, as well as the coordination of materials receiving, inventory, and distribution. The project will be constructed under the direct supervision of on-site construction manager with the assistance of local contractors. The construction consists of the following tasks:

- Site development, including roads;
- Foundation excavation;
- Concrete foundations;
- All electrical and communications installation;
- Tower assembly and machine erection; and
- System testing.

The construction team will be on site to handle materials purchasing, construction, quality control, testing and start-up. The EPC contractor will manage local subcontractors to complete all aspects of construction.

Throughout the construction phase, ongoing coordination occurs between the project development and the construction teams. The on-site project construction manager helps to coordinate all aspects of the project, including ongoing communication with local officials, citizens groups and landowners. Even before the project becomes fully operational, the operations and maintenance (O&M) staff is integrated into the construction phase of the project. The construction manager and the O&M staff manager work together continuously to ensure a smooth transition from construction through wind farm commissioning and, finally, operations.

6.4.2 Foundation Design

The wind turbines' freestanding 80 meter (262 feet) tubular towers will be connected by anchor bolts to an underground concrete foundation. Geotechnical surveys, turbine tower load specifications and cost considerations will dictate final design parameters of the foundations. Foundations for similar sized turbines are generally octagonal, approximately 40 to 60 feet across at the base, and extend 7 to 10 feet below grade. The wind turbine foundation design shall be prepared by a registered professional engineer licensed to practice in the State of North Dakota.

6.4.3 Civil Works

Completion of the project will require various types of civil works and physical improvements to the land. These civil works may include the following:

- Improvement of existing public access roads to the project site;

- Construction of roads adjacent to the wind turbine strings (turbine access roads) to allow construction and continued servicing of the wind turbines;
- Clearing and grading for wind turbine tower foundation installations;
- Trenching for underground cabling for connecting the individual wind turbines;
- Installation of an on-site feeder system for connecting wind turbine strings for delivery to the electricity collection/metering location;
- Installation of any site fencing and security; and
- Restoration and re-vegetation of disturbed land when construction activities are completed.

Any improvements to existing public access roads will consist of re-grading and filling of the surface to allow access even in inclement weather. No asphalt or other paving is anticipated. Turbine access roads will be constructed along turbine strings or arrays. These roads will be sited in consultation with local landowners and completed in accordance with local building requirements where these roads interface with public roads. They will be located to facilitate both construction (cranes) and continued operation and maintenance. Siting roads in areas with unstable soil will be avoided wherever possible. All roads will include appropriate drainage and culverts while still allowing for the crossing of farm equipment. The roads may be up to 36 feet wide and will be covered with road base designed to allow passage under inclement weather conditions. The roads will consist of graded dirt and will be covered with an aggregate surface. Once construction is completed, the roads will be regraded, filled, and dressed as needed.

6.4.4 Commissioning

The project will be commissioned after completion of the construction phase. The project will undergo detailed inspection and testing procedures prior to final turbine commissioning. Inspection and testing occurs for each component of the wind turbines, as well as the communication system, meteorological system, obstruction lighting, high voltage collection and feeder system, and the Supervisory Control and Data Acquisitions (SCADA) system.

6.5 Project Operation and Maintenance

Langdon II will be operated and maintained to the same standards as Langdon I as discussed in the original Langdon Wind Energy Center application dated March 21, 2007.

Langdon Wind will control, monitor, operate, and maintain the project by means of a SCADA computer software program. Each wind turbine in the project will communicate directly with the SCADA system for the purposes of performance monitoring, energy reporting and trouble-shooting. In addition to regularly scheduled on-site visits, the wind farm may be monitored via computer. Under normal conditions each wind turbine operates autonomously, making its own control decisions. The project will be operated and maintained by FPLE Operating Services.

The SCADA system offers access to wind turbine generation or production data, availability, meteorological, and communications data, as well as alarms and communication error information. Performance data and parameters for each machine (generator speed, wind speed, power output, etc.) can also be viewed, and machine status can be changed. There is also a “snapshot” function that collects frames of operating data to aid in diagnostics and troubleshooting of problems.

The primary functions of the SCADA system are to:

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

6.5.1 Maintenance Schedule

Langdon Wind will remotely monitor the project on a daily basis. This will be accompanied by a visual inspection by the on-site operating staff. Several daily checks will be made in the first three months of commercial operation to see that the project is operating within expected parameters.

Once installed, the project service and maintenance is carefully planned and divided into the following intervals:

- A) First service inspection
- B) Semi-annual service inspection
- C) Annual service inspection
- D) Two years service inspection
- E) Five years service inspection

First Service Inspection. The first service inspection will take place one to three months after the turbines have been commissioned. At this inspection, particular attention is paid to the tightening up of all bolts by 100 percent, a full greasing, and filtering of gear oil.

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

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

Two Years Service Inspection. The two years service inspection consists of the annual inspection, plus checking and tightening of terminal connectors.

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

6.5.2 General Maintenance Duties

The O&M field duties include performing all scheduled and unscheduled maintenance including periodic operational checks and tests, regular preventive maintenance on all turbines, related plant facilities and equipment, safety systems, controls, instruments, and machinery, including:

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

6.6 Decommissioning and Restoration

Langdon Wind has a contractual obligation to the landowners to remove the Wind Facilities, including foundations to a depth of four feet, when the wind easement expires. Langdon Wind also reserves the right to explore alternatives regarding project decommissioning at the end of the Certificate term. Retrofitting the turbines and power system with upgrades based on new technology may allow the wind farm to produce efficiently and successfully for many more years. Based on estimated costs of decommissioning and the salvage value of decommissioned equipment, the salvage value of the wind farm will exceed the cost of decommissioning.

7.0 ENVIRONMENTAL ANALYSIS

This section provides a description of the environmental conditions that exist within the project area. Consistent with North Dakota Energy Conversion and Transmission Facility Siting Act, the exclusion and avoidance criteria were again considered as well as selection and policy criteria in the selection and design of the site. Because the majority of the second phase of this project is within the initial project boundary, only information relevant to the change is presented.

To support this siting process, maps of the site were generated that indicate the presence or absence of many of the criteria highlighted in NDCC 69-06-08. Langdon Wind's Safety and Environmental Policy was included in Appendix A of the initial Permit Application and has been attached to this supplemental application as Appendix B.

7.1 Description of Environmental Setting (Introduction)

The second phase of the Langdon wind energy project covers an area approximately 25,530 acres (40 square miles) in size, over half of which is located within the boundary of the first phase of the Langdon Project. Portions of an additional three sections of land adjacent to the western boundary and four sections of land adjacent to the eastern boundary are located outside of the initial proposed and permitted project (approximately 9,607 acres).

The project area is located in Cavalier County in North Dakota, a primarily rural agricultural area located south of North Dakota Highway 5 and east of North Dakota Highway 1. The economic base of Cavalier County consists primarily of employment in farming and agricultural services. No new Cavalier County census data has become available since the initial permit Application.

7.2 Demographics

The project is located within a lightly populated rural area in north-eastern North Dakota. There is no indication of any new residential construction on the site. Socioeconomic impacts associated with the project will be primarily positive with an influx of wages and expenditures made at local businesses during the project construction and an increase in the County's tax base from the construction and operation of the wind turbines and associated infrastructure. In addition, the lease payments paid to landowners will offset potential financial losses associated with removing areas of land from agricultural production. For a discussion of the complete description of resources, impacts and mitigative measures please refer to the initial application.

7.3 Land Use

7.3.1 Description of Resources

The land in Cavalier County within the project area boundary is primarily agricultural with scattered farmstead residences. According to the North Dakota County Tax Auditor, Cavalier County has retained zoning rights at the county level.

The project will be located in central Cavalier County, south of North Dakota Highway 5 and on both the east and west sides of North Dakota Highway 1 near the towns of Langdon and Nekoma. The second phase of the Langdon Project encompasses 25,530 acres (40 square miles) and consists of up to 27 wind turbines for a generation of 40.5 MW of wind power. The current land use within the project area is rural

agricultural land used for crops and livestock grazing. The project area is not located within any city limits or within any known military installations. The development of Langdon II will not displace any residences or existing or planned industrial facilities. Wind turbines will be sited a minimum of 1,400 feet from occupied residences.

Based on a review of aerial photographs, land use database information, and visits to the project area, it was determined that the majority of the land use at the site is agricultural. Table 10 identifies current land use in the project area based on USFWS database information. Over 80 percent of the project area is used for agricultural purposes. Grasslands form approximately three and one half percent of the site and are primarily used for grazing livestock. Approximately 31 acres are enrolled in the Conservation Reserve Program (CRP). Native grasslands include remnant native prairie of various quality dependent on grazing pressure and herbicide applications to control weed species. Less than three percent of the site is wetlands (including both isolated and potentially jurisdictional) and open water.

Table 10
Major Habitats and their Relative Abundance in the Project Area

Habitat	Acreage	Percent of Project Area
Grassland/herbaceous	884	3.46%
Cropland	22,519.33	88.21%
Forest	63.83	0.25%
Wetlands (isolated and potentially jurisdictional)	663.16	2.60%
Open water	4.71	0.02%
Other developed land	1,75.05	4.21%
Pasture/hay	319.48	1.25%
<i>Conservation Reserve Program (CRP)*</i>	<i>30.47</i>	<i>0.12%</i>

*Represents the amount of CRP land within the project area.

7.3.2 Impacts

As with Langdon I, the development of Langdon II will not result in a significant change in land use. The area will retain the rural characteristics of the vicinity. Wind turbines will be sited a minimum of 1,400 feet from occupied residences. At other wind developments in the upper Midwest and the first phase of this project, landowners frequently plant crops and/or graze livestock to the edge of the access roads and turbine pads. The access roads are up to 36 feet wide and low profile so they are easily crossed while farming. Langdon Wind will work closely with the landowners in locating access roads to minimize land use disruptions to the extent possible. Consideration will be taken in locating access roads to minimize impact on current or future row crop agriculture and environmentally sensitive areas. During the construction of the wind power facilities, additional area may be temporarily disturbed for contractor staging areas and underground power lines. These areas will be graded to original contour and reseeded with appropriate vegetation if necessary.

While the permanent site layout has not been determined, installation of the approximate 40.5 MW facility will result in the conversion of approximately three acres of land assuming 27 1.5 MW turbines and 22 acres of land for aggregate-surfaced access roads up to 36 feet in width. The project facilities for Langdon II will not include an O&M facility, project substation, or transmission lines as these were already permitted in the original permit application. Langdon II will add a separate 34.5/115kV general step-up transformer into the existing Langdon I substation.

At other wind farms, the public has expressed concerns over potential devaluation of property in and adjacent to proposed wind projects. A study published in October 2002, *“Economic Impacts of Wind Power in Kittitas County, Final Report,”* conducted by Dr. Stephen Grover of ECONorthwest of Portland, Oregon, summarized survey results as follows:

“Views of wind turbines will not negatively impact property values. Based on a nationwide survey conducted of tax assessors in other areas with wind power projects, we found no evidence supporting the claim that views of wind farms decrease property values.”

7.3.3 Mitigative Measures

Langdon Wind is working closely with the landowners, the USFWS, and other agencies in locating wind turbines and access roads to minimize land use disruptions and impacts to environmentally sensitive areas to the extent possible. Operation of the wind farm will not change the land use in the project area. The proposed project will not involve any ongoing industrial use of non-renewable resources or emissions into the environment.

7.4 Public Services

7.4.1 Description of Resources

Local Services

The project is located in a lightly populated, rural area in north-eastern North Dakota. There is an established transportation and utility network that provides access and necessary services to the light industry, small cities, homesteads, and farms existing near the project area. The closest town to the project area is Nekoma and the closest city is Langdon, which is the county seat of Cavalier County. The city of Langdon provides sanitary sewer, water, utility services, educational facilities, and recreational facilities such as arenas, theaters, and parks, to its residents and visitors. Additionally, the city’s local services include emergency services, ambulance service, a hospital and a sheriff. There are also several local retail service facilities and organizations.

Electrical Service

One 69 kV transmission line was observed running through the northwestern portion of the project area during initial Langdon I site visits. In addition, Langdon I included the construction of an eleven mile 115 kV transmission line which connects the Langdon I project substation to the Langdon substation.

Roads

County and township (section line) roads characterize the existing roadway infrastructure in and around the project area. There are two State Highways within and adjacent to the project area. Highway 1 runs through the west portion of the project area north to south. Highway 5 runs parallel to the northern

boundary of the original project area and runs west to east. Additionally, the first phase of the Langdon Project included the construction of 20 miles of access roads up to 36 feet wide within the site.

Traffic

The existing traffic volumes on the area’s county highways are documented in Table 11 and Figure 9. Determining the specific capacity of any highway is a complex process. However, general estimates are used for planning purposes. For purposes of comparison, the functional capacity of a two-lane paved rural highway is approximately 5,000 vehicles per day. This is also known as Average Daily Traffic (ADT).

Additional county and township roads run through the project area, but have no count data available. In general, the North Dakota Department of Transportation (NDDOT) indicated that roads under 100 ADT are rarely counted. As indicated in Table 11, all non-State routes are less than 100 ADT. As per NDDOT, the routes with no counts are likely lower than those with count data.

Table 11
Existing Daily Traffic Levels

Roadway Segment	Existing Average Annual Daily Traffic (ADT)/Commercial Truck Traffic
Highway 1 through western portion of project area	1,775/310
Highway 5 near northern portion of project area	1,775/310
Highway 66 through southern portion of project area	1,025/140

Source: 2006 Traffic Volumes from NDDOT, Bismarck

Water Supply

Townships have limited public infrastructure services, which is typical of most townships. Homes typically utilize water wells and septic systems for their household needs.

Telephone, Fiber Optic and Microwave Communications

Potential impacts of proposed construction and operation of the project on existing telecommunications infrastructure within Cavalier County were assessed (Comsearch 2006). The assessment identified three microwave paths that intersect the project area. Comsearch calculated a Worst Case Fresnel Zone (WCFZ) for each microwave path in the project area. The mid-point of a full microwave path is the location where the widest (or worst case) Fresnel Zone occurs. The calculated WCFZ radius represents the area where planned wind turbines should be avoided, if possible. The microwave interference study and worst case Fresnel Zone calculations from Comsearch are included in Appendix D.1.

7.4.2 Impacts

The project is expected to have a minimal effect on the existing services and infrastructure. The following is a brief description of the impacts that may occur during the construction and operation of the project.

Local Services

No impact is expected to local services.

Electrical Service

The project will require station service from the local electric provider when the wind project is not generating electricity.

Roads

Constructing the project will require up to 22 acres of aggregate-surfaced access roads assuming 27 1.5 MW turbines. In addition, during operation of the project, the access roads will be used by operation and maintenance crews while inspecting and servicing the wind turbines. The access roads will be between towers, offset as necessary to allow for adequate crane access. One road will be required for each string. The permanent access roads will be up to 36 feet wide and low profile to allow cross-travel by farm equipment.

Traffic

The maximum construction workforce is expected to generate approximately 25 additional vehicle trips per day. Using any combination of state and county highways and other township roads throughout the project area, the traffic impacts are considered negligible. Since many of the area roadways currently have minimal ADT, the addition of 25 vehicle trips represent a large percentage increase (and likely will be perceptible), but will still be less than seasonal variations such as autumn harvest. The capacity of any route and level of service to the traveling public will not be impacted.

Truck access to the project area is served by US Highway 5 into Langdon, which is a two-lane highway connecting to I-29 in Pembina County approximately 52 miles to the east. From Langdon, Highway 1 to Highway 5 will serve as the primary truck access into the project area. Specific additional truck routes will be dictated by the location required for delivery. Additional operating permits will be issued by the state, county and/or township for over-sized truck movements.

Water Supply

Construction and operation of the project will not significantly impact the water supply. The abandonment of any wells is not required for the project. The project will not require appropriation of surface water or permanent dewatering. However, temporary dewatering of groundwater may be required during construction of turbine foundations.

Telephone, Fiber Optic and Microwave Communications

Construction and operation of the project will not impact the telephone and/or fiber optic service to the project site. Beam paths are present in the project area and Comsearch has identified WCFZ for the area. Mitigative measures are discussed below regarding microwave communications. Land mobile telecom system impacts are not anticipated.

7.4.3 Mitigative Measures

Construction and operation of the wind farm project will be in accordance with all associated local, federal and state permits and laws, as well as industry construction and operation standards. Due to the minor impacts expected on the existing infrastructure during project construction and operation, extensive mitigation measures are not anticipated.

Local Services

With the addition of substation and transmission capacity, no impact to local services is anticipated, and no mitigation is required.

Electrical Service

Langdon Wind will purchase station service from a local electrical utility. MAPP will suggest appropriate configurations for the electrical system and Langdon Wind will abide by the recommendations to prevent impacts to the transmission system. Langdon Wind has established a setback of 420 feet from existing transmission lines. No additional mitigation is necessary.

Roads

Langdon Wind is working closely with the landowners to locate access roads to minimize land-use disruptions to the extent possible. A map depicting the preliminary layout of the turbines and access roads is shown in Figures 2 and 5. In addition, Langdon Wind obtained six drive permits from the North Dakota DOT for Langdon I and which are also applicable to Langdon II (Appendix D.8).

Traffic

No impacts are anticipated; as such no mitigation is necessary.

Water Supply

In the event wells are abandoned, they will be abandoned as required by North Dakota regulations. If temporary dewatering of groundwater is required during construction activities, discharge of dewatering fluid will be conducted under the requirements of the National Pollutant Discharge Elimination System (NPDES) permit and Storm Water Pollution Prevention Plan (SWPPP).

Telephone, Fiber Optic and Microwave Communications

Utilities Underground Location Center will be contacted prior to construction to locate and avoid underground facilities. To the extent project facilities cross or otherwise affect existing telephone or fiber optic lines or equipment, Langdon Wind will enter into agreements with service providers so as to avoid interference with their facilities.

Turbines will be sited to avoid WCFZ areas identified by Comsearch.

7.5 Human Health and Safety

7.5.1 Description of Resources

Air Traffic

Robertson Field is located approximately one mile west of Langdon in Section 22, Township 161 North, Range 60 West. The airport is located two miles northwest of the northwest corner of the project boundary. There is one asphalt runway oriented in the northwest-southeast direction at an elevation of approximately 1,617 feet above mean sea level. This small airport supports local single-engine airplanes. The nearest airport certified for carrier operations is Devils Lake Municipal Airport located approximately 59 miles southwest of Langdon.

Electromagnetic Fields

The term electromagnetic field (EMF) refers to electric and magnetic fields that are present around any electrical device. Electric fields arise from 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 (wire). EMF can occur indoors and outdoors. However, there are no known

discernible health impacts from power lines. Turbines and collector lines will be no closer than 1,400 feet to occupied residences where EMF will be at background levels.

Hazardous Materials / Hazardous Waste

The site is located in a rural area of northeast North Dakota. Hazardous wastes from large industrial or commercial activities are not likely. Potential hazards may exist in rural areas from private farms' landfill sites and farming activities. A Phase I Environmental Site Assessment (ESA) of the project site has been conducted to identify any Recognized Environmental Conditions (RECs) that may exist. Results indicated that *de minimis* conditions were present at the property due to the presence of two junkyards located near proposed Langdon I turbines 28 and 43. While Tetra Tech did not determine these conditions to be RECs, it was recommended that the junkyards be addressed for cleanup.

Potentially hazardous materials associated with the project include fluids used for maintenance of turbines and transformer equipment. There will be three types of fluids used in the operation of the wind turbines that are petroleum products. These fluids are necessary for the operation of each turbine and include gear box oil, hydraulic fluid, and gear grease. The transformers contain mineral oil.

Security

The project site is located in an area that has a low population density. Construction and operation of the project will have minimal impacts on the security and safety of the local populace.

7.5.2 Impacts

Air Traffic

The installation of wind turbines creates a potential for air traffic collision. However, no new aboveground power collection lines will be constructed, and the wind turbines and meteorological towers themselves will be visible from a distance. The wind turbines and meteorological towers will have lighting and markings that comply with Federal Aviation Administration (FAA) requirements. In addition, the FAA's review will include evaluation of any potential interference with air traffic.

Electromagnetic Fields

While the general consensus is that EMF pose no risk to humans, the question of whether exposure to magnetic fields may potentially cause biological responses or even health effects continues to be the subject of research and debate. Based on the most current research on EMF and the distance between any turbines or collector lines and houses, the project will have no impact to public health and safety due to EMF.

Hazardous Materials / Hazardous Waste

The Phase I ESA was used to minimize risk associated with potential RECs as defined by the American Society for Testing and Materials, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process E 1527-05 (ASTM E 1527-05)*. Significant findings were not identified. However, *de minimis* conditions were identified during the Phase I ESA due to the presence of two junkyards near proposed Langdon I turbine locations 28 and 43. Tetra Tech recommended these junkyards be addressed for cleanup. The Applicant will not generate any hazardous wastes.

Security

Project construction and operation will have minimal impacts to security and safety of the local community.

7.5.3 Mitigative Measures

Air Traffic

Langdon Wind will coordinate with FAA on the project layout and lighting and will seek Determinations of No Hazard from FAA. Wind turbines and meteorological towers will have lighting and markings according to FAA requirements that minimize any potential for air traffic impacts.

Electromagnetic Fields

Langdon Wind will follow “prudent avoidance” methods regarding EMF exposure such as, continued monitoring of EMF research, providing public education, and encouraging conservation, distributed generation, and utilities working with customers on household EMF issues

Hazardous Materials / Hazardous Waste

Since no significant findings were identified, no mitigation is proposed at this time. All petroleum fluids used for project maintenance will be contained within the bases of each turbine. Any petroleum waste will be handled and disposed of in accordance with local, state and federal regulations.

Security

The following security measures will be taken to reduce the chance of physical and property damage, as well as personal injury, at the site:

- The towers will be placed 420 feet from road ROWs and 1,400 feet from occupied residences. These distances are considered to be safe based on developer experience and are consistent with the required local setbacks. They also serve to reduce noise.
- Security measures will be taken during the construction and operation of the project, including temporary and permanent (safety) fencing, warning signs, and locks on equipment and wind power facilities.
- Turbines will sit on solid steel enclosed tubular towers in which all electrical equipment will be located, except for the pad-mounted transformer. Access to the tower is only through a solid steel door that will be locked when not in use.
- Where necessary or requested by landowners, Langdon Wind will construct gates or fences such as those around the project substation.

7.6 Noise

7.6.1 Description of Resources

The project area is rural with isolated residences and no significant sources of noise other than farming equipment and traffic on local roads. As such, the background noise levels are relatively low at about 35 decibels on an A-weighted scale (dBA) Figure 10. During periods of high wind when turbines would be operating, the background would be about 10 dBA higher at 45 dBA due to noises created by the wind. These are primarily the rustling of grass and tree leaves.

7.6.2 Impacts

General Electric (GE) has committed to providing the project with 1.5 MW turbines that will result in a mean A-weighted sound power level of 106 dBA at wind speeds from 7 m/s to cutout speed (about 25 m/s) when measured using International Electrotechnical Commission (IEC) standard procedures. The primary source of noise from the GE turbines is from the wind interacting with the rotor blades producing

a swishing sound that is relatively constant over the wind speed range indicated above. However, the level of background noise created by the wind continues to increase as the wind speed increases. At these higher wind speeds, the turbine noise is masked by the wind-generated noise.

The equipment located in the nacelle of the turbines also produces noise but is controlled through design features and is well contained by the nacelle housing. It is of less significance than the swishing sound from the rotor blades.

Cavalier County has no noise standards. Therefore, the generally accepted average noise impact level for wind turbines of less than 50 dBA at any residence, day or night will be used. The setback distance to achieve 50 dBA or less is 1,400 feet for multiple turbines under worst-case ground absorption conditions.

7.6.3 Mitigative Measures

The primary mitigation measure used for wind turbines is setback distance. Langdon Wind is committed to the 1,400-foot setback distance. This setback distance has proven sufficient and acceptable to the communities in North Dakota where FPL Energy has installed wind farms currently in operation.

Special conditions can occur which are difficult to predict such as periods of high wind shear events where there is little masking wind noise at surface level but at hub-height there is sufficient wind for energy generation. Residents in homes which are poorly insulated or highly exposed without any vegetation nearby may perceive a higher indoor noise level than those in a typical well insulated home. If a complaint is registered and sound is measured above the 50 dBA level on more than a rare occasion, Langdon Wind can provide improved insulation or landscaping to mitigate these unusual situations. It should be noted that the noise model predicts outdoor noise levels only and assumes no shielding by trees or other vegetation.

7.7 Cultural and Archaeological Resources

7.7.1 Description of Resources

A Class I Survey, including a search of the State Historic Preservation Office's (SHPO) site and manuscript files, was conducted by Metcalf Archaeological Consultants, Inc. (Metcalf) for the Langdon I project area (Appendix D.3). Subsequently, Metcalf performed additional inventories and produced a report titled "*Langdon Wind Energy Center Phase II: A Class II and Class III Cultural Resource Inventory in Cavalier County, North Dakota*" dated December 2007. The files search revealed one prehistoric isolated find, 32CVx66 (a projectile point) with the remaining properties consisting of bridges, churches, residences and post office site leads (Metcalf 2007). The previously recorded site 32CV113, Army Safeguard Complex, is the only documented site revealed by the files search that is eligible for the National Register of Historic Places (NRHP). While it is out of the project area proper, there will be some modification to the viewshed of the site. The location of this site as depicted in the current site form is incorrect and an updated site form has been submitted. There have been nine previous investigations in the area. An urban survey of Langdon (MS #4283) accounts for the majority of the recorded historic sites for private residences, while a church survey (MS #5945) accounts for the churches on record.

The Langdon project area was inventoried to locate any cultural resources within the area of potential effect, fulfilling the policies implementing the National Historic Preservation Act (NHPA [Public Law 89-665]) as amended. An additional goal was to allow Langdon Wind to plan construction so as to avoid

any NRHP-eligible cultural resources or mitigate the effects on any resources. The inventory was conducted by Metcalf in October 2007. Prior to conducting the field work Metcalf's principal investigator met with Paul Picha, North Dakota SHPO chief archaeologist, to discuss the project. At that meeting it was agreed that the same combination Class II and Class III inventory as had been used for the Langdon I inventory would be employed. The Class III inventory revealed that the overall area has low potential for archaeological sites (i.e., no sites were encountered). Where roads allowed access to access/collector/transmission line corridors, a Class II windshield survey was conducted.

Metcalf documented two prehistoric isolated finds, 32CVx68 and 32CVx69. An historic site, the Safeguard Complex (32CV113) is located approximately 1.1 miles southeast of the nearest proposed wind turbine and out of the project area proper. The pyramid within the complex is 1.3 miles from that proposed turbine. Background research on the Safeguard Complex was conducted during the Langdon I inventory and is summarized below.

32CVx68

This isolated find was encountered approximately 350 meters west of turbine T26. The location is in a flat, cultivated field. Area ground surface visibility was approximately 50 percent at the time of the inventory. The isolate consists of one tertiary Swan River chert flake. It is not temporally diagnostic. The isolate is recommended as not eligible for the NRHP and no avoidance is recommended.

32CVx69

This isolated find consists of a grooved maul approximately 180 meters northeast of T24. The isolate is outside of the project corridor and was observed while crossing to a parked vehicle. It was recorded as a good faith effort. It is in a flat cultivated field with approximately 50 percent ground surface visibility. It is approximately 15 centimeters in length and is made from a dark gray granitic/basalt cobble. The isolate is recommended as not eligible for the National Register and is out of the project area at any rate. No further investigation or avoidance is recommended.

32CV113

This National Register eligible site, the Safeguard Complex, is outside of the project area proper but the Langdon I wind farm turbines (the nearest being T47) are approximately 0.80 miles or greater to the east but within the viewshed of the pyramid, the principal component of the site. The nearest Langdon II turbine is T2 and is over one mile distant. The site location depicted in the original site form was incorrect and an updated site form reflecting a more accurate location has been filed as part of the Langdon I investigations. Following is a history of the Safeguard Complex, also known as the Nekoma Missile Site Radar (MSR), based on Mills (forthcoming) and Hafermehl (1993) (Metcalf 2007).

This site meets the NRHP Criteria A and C, and although the site remains less than 50 years old, it is eligible for the National Register of Historic Places under Criteria Consideration G, as a Post World War II property defined as a military installation exceptionally important because of its contribution to the Cold War arms race.

The proposed wind turbines will be visible from the Nekoma MSR, but they will not negatively impact or affect the structural or historical integrity of the site to the degree that it would no longer be eligible for the National Register. The feeling, setting, and association integrity of this site will not be greatly diminished as the surrounding landscape did not contribute to the physical placement of the complex.

The nearest Langdon II turbine is 1.3 miles northwest of the pyramid and the nearest Langdon I wind tower lies approximately 0.8 miles east of the pyramid. There is some reduction in the site's dominance of the skyline if one travels from the north to the south along Highway 1. The highway bends around the structure to the west creating a front focal point as one approaches the site from the north. The wind turbines will be east and north of this view when 1.5 miles north of the site and will not impact the visual effect of this imposing structure. While the turbines will be more visible as one approaches the site from the south, the site's viewshed will be modified at a distance. The closer one travels to the site, the more physically dominant the site becomes. At the closest vantage point to the site from the highway, lying west less than a quarter mile from the complex, little surrounding landscape is visible. Thus, minimal negative modification of the site's viewshed will result from this project. Since the site's eligibility pertains to its importance in historical events and structural integrity, the viewshed modification to the site will not affect its eligibility status. None-the-less there will be an effect on the viewshed. The turbines, with the blades at vertical, are 381 feet high and the pyramid is 123 feet high.

7.7.2 Impacts

Based on the results of the Class I and II survey, and Class III Pedestrian Survey, two prehistoric isolated finds, 32CVx68 and 32CVx69, and one National Register eligible site (32CV113), the Safeguard Complex were documented. The isolates 32CVx68 and 32CVx69 are recommended as not eligible for the National Register. No further investigation or avoidance is recommended for these isolated finds.

The proposed wind farm will minimally modify the viewshed of one National Register eligible historic property, 32CV113. The principal component of site 32CV113, the pyramid, is well over one mile from the nearest Langdon II turbine and while it's viewshed will be modified, the modification will not greatly reduce the feeling or association of the site. None-the-less there will be an impact.

7.7.3 Mitigative Measures

Tetra Tech has not received a response from the North Dakota Indian Affairs Commission regarding a query letter requesting assistance in identifying properties with environmental concerns or issues within the project area.

Based on discussions with the Army and North Dakota SHPO personnel during the Langdon I project, Langdon Wind submitted a mitigation plan to SHPO and the Army which will assist in the development of an interpretive system to improve the preservation efforts of the Nekoma Pyramid and associated Safeguard Complex (32CV113). This mitigation plan will help to resolve the potential adverse effect to the site viewshed. Langdon Wind has also sent a letter to the SHPO with a copy to the Army discussing the mitigation plan and the relationship to the Langdon II project. A copy of this letter is included in Appendix E.

Should previously unknown archaeological resources or human remains be inadvertently encountered during project construction and/or operation, the discoveries will be reported to the SHPO. With regard to a discovery of human remains, procedures would be followed to ensure that the appropriate authorities would become involved quickly and in accordance with local and state guidelines.

Although there are no reservations or Bureau of Indian Affairs trust lands in Cavalier County, the following Tribal Historic Preservation Officers (THPO) or Tribal Cultural Preservation Officers (TCPO) may need to be contacted if archaeological resources or other properties of Tribal interest are identified

prior to or during construction:

Tim Mentz, THPO
Standing Rock Sioux Tribe
Phone: 701.854.2120

Elgin Crows Breast, TCPO
Three Affiliated Tribes –
Spirit Lake Tribe
Phone: 701.627.4781

Ambrose Littleghost, THPO
Mandan Hidatsa & Arikara
Nation
Phone: 701.996.4477

The Native American Graves Protection and Repatriation Act of 1990 allows Tribes to protect American Indian graves and to repatriate human remains. The proponent must comply with this act if a burial site is encountered during construction as the aforementioned Act applies to all developments regardless of the funding source. Any burial site identified, including Tribal or pioneer, must be referred to the North Dakota Intertribal Reinternment Committee and the North Dakota State Historical Society.

The North Dakota Intertribal
Reinternment Committee (NDIRC)
Ms. Jane Martin
Turtle Mountain Housing Authority
P.O. Box 620
Belcourt, ND 58301

State Historical Society North Dakota
Mr. Paul Picha, Chief Archeologist
North Dakota Heritage Center
612 East Boulevard Avenue
Bismarck, ND 58505-0830
ppicha@state.nd.us

7.8 Recreational Resources

7.8.1 Description of Resources

Recreational opportunities in Cavalier County include hiking, hunting, fishing, and nature observation. Review of state and federal databases indicates that no registered national wildlife refuges, state wildlife management areas, state game refuges, game management areas, nature preserves, county parks, or formal recreational areas are present within or near the project site. No lakes with public boat access are located on or within four miles of the project site.

7.8.2 Impacts

In general, recreational impacts will be visual in nature and limited to individuals using public or private property in the project area for hiking, hunting, fishing, or nature observation.

7.8.3 Mitigative Measures

Since it is not anticipated that any significant recreational resources will be removed from service by implementation of the project, no adjacent land will be converted or dedicated to recreational use or wildlife management. No other mitigation is anticipated to be necessary.

7.9 Effects on Land-Based Economies

7.9.1 Description of Resources

Agriculture/Farming

The majority of the site is cultivated farmland, pasture, and grasslands as shown in the Land Cover Map, Figure 13. Cultivated land comprises approximately 22,519 acres of the project site. Grasslands comprise

884 acres of the land. Approximately 90 percent of the land in the project site is utilized for agricultural purposes, including pasture land.

According to the 2002 Census of Agriculture, wheat is the most widely grown crop within the project area. Hay, sunflowers, and corn are additional crops in the project area. Cavalier County has approximately 422 farms, of which the primary commodity is crops, primarily wheat for grain. Cattle are the primary livestock in the county. According to the 2002 Census of Agriculture, the amount of land in farms decreased six percent in Cavalier County. The market value of agricultural products from Cavalier County in 2002 was approximately \$88,987,000. Crop sales account for approximately 98 percent of the total value of agricultural products sold.

Since crops comprise a large percentage of the value of the land, areas identified as prime farmland are important to production. Prime farmland is the land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops. The Natural Resources Conservation Service (NRCS) has two classifications for prime farmland. The first is where all areas of the soil series are classified prime farmland. The second is where only the drained areas of the soil series are prime farmland. The NRCS also identifies farmland of statewide and local importance, which is land that is important for the production of food, feed, fiber, forage and oilseed crops. Generally, additional farmlands of statewide or local importance include those that are nearly prime and that produce high yields of crops in an economic manner when treated and managed according to acceptable farming methods. Some may produce as high a yield as prime farmland soils if conditions are favorable. Figure 14 shows the prime farmland soil distribution in the project site.

According to the North Dakota State Water Commission, Water Permit Retrieval System, no irrigation permits or irrigation systems were identified within the project area. However, there were approximately 21 residences identified within the project area. These residences are identified on Figure 4.

Woodlands

Economically important forestry resources are not found in the project area. Woodlands are primarily associated with homes in the form of woodlots and windbreaks within the project area. Many of the windbreaks in the project area have reached the end of their lifespan and are being removed for additional arable acreage. Woodlands within the project area are depicted on Figures 3 and 13.

7.9.2 Impacts

Agriculture/Farming

No impacts are anticipated to animal health and safety due to the construction or operation of the wind farm and associated facilities. Except for the physical locations of the turbines and access roads, all the land surrounding the facility will be available for grazing.

Actual impacts to agriculture production will be determined once turbine and road locations are finalized. Each turbine will impact approximately 0.11 acres of land due to turbine placement for a total land disturbance of three acres for 27 turbines. Roads will be up to 36 feet wide and will vary in length. Currently, road impacts are estimated at approximately 22 acres assuming 27 1.5 MW turbines. It is possible that some of this land is not used for agricultural purposes, thus the actual impacts to agriculture production cannot be determined until turbine and road locations are finalized.

Soils considered prime farmland within the project site are located throughout the project area (Figure 14). Within the project area, approximately 34 percent of the site is comprised of prime farmland and 24 percent prime farmland if drained. The remaining 42 percent of land within the project area is not prime farmland or prime farmland if drained. The final layout will contain only a limited number of turbines and facilities in prime farmlands. The preliminary layout includes up to nine turbines and associated access roads for a combined total of less than one acre of the project located in prime farmland. Assuming all 1.5 MW turbines were placed within prime farmland areas, approximately three acres of prime farmland would be impacted or 0.02 percent of prime farmland in the project area. Using the scenario with all turbines and facilities located in prime farmland, the maximum 0.3 percent impact to the site acreage will be a small percentage of prime lands in the county and will be a negligible impact to agricultural production. When considering the impact on production for the top five crops in Cavalier County, if all the turbines and access roads impacted prime farmland, the total area will affect less than 0.1 percent of the yearly production for those commodities (based on yields reported in 2007). As noted earlier, wind lease payments will provide farmers with a supplemental source of income, helping assure that farmers can continue to operate financially viable farms, and thus helping to assure the continuation of farming in Cavalier County.

No turbines will be placed within 1,400 feet of occupied residences. Other impacts to homes are discussed throughout Section 7.0. Family farms will be impacted due to the loss of land associated with the construction of the turbines and access roads. The extent of the impact will not be known until final turbine locations are determined in conjunction with the landowner.

Woodlands

No significant impacts are anticipated to woodlands. Since a majority of the woodlands are associated with homesteads and windbreaks, and the acreage of woodlands in the project area are negligible, no impacts are anticipated.

7.9.3 Mitigative Measures

Agriculture/Farming

The wind turbines and access roads will be located so that the most productive farmland (prime farmland) will be avoided to the extent possible. Only land for the turbines and access roads will be unavailable for crop production. Langdon Wind will work with landowners to minimize impacts to their land. Once the wind turbines are constructed, all land surrounding the turbines can still be farmed or grazed. All construction areas will be separated from grazing animals by temporary or permanent fencing.

Woodlands

No significant impacts are anticipated to woodlands.

7.10 Soils

7.10.1 Description of Resources

Twenty-seven soil map units are currently mapped at the NRCS Order III level in the project area (Figure 15). Of these only 13 map units comprise more than one percent of the land area. Soils in the project area are generally comprised of very deep loams with a wide range of drainage capabilities. The soils are generally derived from continental glacial till deposits.

The Hamerly-Tonka complex and Barnes-Svea loams make up 25 and 19 percent, respectively. The next five most common soil types are Svea-Cresbard loams (10 percent), Svea-Buse loams (nine percent), Vallers-Hamerly loams (eight percent), Hamerly-Cresbard loams (eight percent), and Cavour-Cresbard loams (five percent). The remainder of the mapped soils comprises less than four percent of the area. All percentages are approximate.

The Hamerly series consists of very deep, somewhat poorly drained soils that formed in calcareous loamy till. Permeability is moderate in the upper horizons and moderate or moderately slow in the lower horizons. These soils are on flats, on lake plains, and on convex slopes surrounding shallow depressions and on slight rises on till plains. They have slopes ranging from zero to three percent.

The Tonka series consists of very deep, poorly drained, slowly permeable soils that formed in local alluvium over till or glaciolacustrine deposits. These soils are in closed basins and depressions on till and glacial lake plains and have slopes of zero to one percent.

The Barnes series consists of very deep, well drained, moderately or moderately slowly permeable soils that formed in loamy till. These soils are on till plains and moraines and have slopes ranging from zero to 25 percent. The Barnes and Svea loams are considered prime farmland soils. The Svea series also consists of very deep, well or moderately well drained soils formed in calcareous till and local alluvium from the till. Permeability is moderate in the solum and moderate or moderately slow in the C horizon. These soils are on concave positions on till plains and have slopes ranging from zero to 25 percent.

The Cresbard series consists of very deep, moderately well and well drained soils formed in glacial till or local alluvium over glacial till on lower back slopes, foot slopes in depressions, and flats on uplands. Permeability is slow or moderately slow. Slopes range from zero to six percent.

The Buse series consists of very deep, well drained soils that formed in loamy glacial till on moraines. These soils have moderate and moderately slow permeability. They have slopes of three to 60 percent. Mean annual precipitation is about 22 inches.

The Vallers series consists of very deep, poorly drained soils that formed in calcareous fine-loamy till on till plains, moraines and lake plains. These soils have moderately slow permeability. Slopes range from zero to three percent. The Cavour series consists of very deep, moderately well and well drained soils formed in glacial till on uplands. The soils have slow or very slow permeability. Slopes range from zero to six percent.

7.10.2 Impacts

The impact to soils in the site will be limited to areas removed from agricultural production and road construction. Both of these impacts will be relatively minor. Turbine foundations are comparatively small, and access roads will be single lane aggregate-surfaced roadways. In isolated cases, grading may be required for roadway construction. Exact impact acreages will not be known until turbine siting is finalized, but expected impacts will be approximately 0.11 acres per turbine for access roads and turbine foundations. The total impact assuming 27 1.5 MW turbines, is expected to be three acres. Since land immediately adjacent to the turbines and access roads can be used for pasture or row crops, the project will only impact those lands used directly for turbine foundation or roadway construction. A discussion of impacts to prime farmland soils is in Section 7.9.

7.10.3 Mitigative Measures

Wind and water erosion are potential hazards for the soils found on the site. To minimize erosion during and after construction, best management practices (BMPs) for erosion and sediment control (SN 19389 9/99) will be utilized. Construction sites will maintain sediment control practices in accordance with the SWPPP. Since turbines will not be located on significant slopes, only non-structural practices should be required. These practices include temporary seeding, permanent seeding, mulching, filter strips, erosion blankets, and sod stabilization. Top soil will be segregated if cuts are made during construction and reapplied after final contours have been graded.

7.11 Geologic and Groundwater Resources

7.11.1 Description of Resources

Cavalier County is covered by glacial drift deposits of the Pleistocene age. The surficial deposits are generally referred to as the Coleharbor Formation. In most areas of Cavalier County the Coleharbor Formation is comprised of drift material from different periods of glacial advances including pre- and Early Wisconsinan, and Late Wisconsinan. The surficial geology in the vicinity of the project area includes stagnation moraine (till), sand and gravel outwash deposits, and silty/sandy lacustrine deposits. Isolated sand and gravel deposits associated with kames and eskers are also present within the project area. Glacial material is approximately 100 feet thick in the project area, and the area is characterized by rolling topography.

The uppermost bedrock unit in the project area generally is the Cretaceous Fox Hills Formation, although remnants of the Cretaceous Hell Creek Formation may overlie the Fox Hills formation depending on location and bedrock topography. Localized areas of bedrock highs can be found in the project area. No areas of geologic instability (e.g., fault zones, karst topography) were identified. Geologic-related mineral resources in the project area include minor sand and gravel deposits, generally associated with glacial kames and eskers. Two gravel pits are located in excess of one mile south of the project area.

Groundwater resources in the vicinity of the project area are generally derived from buried glacial outwash deposits of sand and gravel or the Fox Hills Formation. Review of the North Dakota State Water Commission database indicates that wells in and around the project area are either screened in the unconsolidated glacial drift aquifer or the Dakota aquifer. Depths of these wells range from approximately 60 to 150 feet. The State Water Commission database did not identify wells within the project area. Given the number of residences in the project area, it appears that the majority of the existing wells at the site are not recorded in the State Water Commission database. This indicates that more domestic wells are in the site than have been documented; it is assumed that each residence has at least one water supply well. Domestic groundwater supply appears to be fairly accessible in the project area and is dependent on the relative occurrences of sand and gravel aquifers at any given area.

Groundwater likely occurs at shallow depths locally, as evidenced by the presence of multiple isolated wetlands in the project area. Groundwater flow direction of the water table aquifer varies greatly and is controlled primarily by topography.

7.11.2 Impacts

Impacts to groundwater resources are not anticipated as water supply needs will be limited. Impacts to gravel resources are not anticipated as they are located in excess of one mile south of the project area.

7.11.3 Mitigative Measures

Wind turbine locations will not impact the use of existing water wells because the turbines will not be sited within 1,400 feet of occupied residences. Wind turbines will not impact gravel resources south of the project area. No mitigation is anticipated to be necessary.

7.12 Surface Water and Floodplain Resources

7.12.1 Description of Resources

Surface water and floodplain resources for the project area were identified by reviewing U.S. Geological Survey topographic maps, Flood Insurance Rate Maps (FIRM) produced by the Federal Emergency Management Agency (FEMA), and USFWS National Wetlands Inventory (NWI) data. The major surface waters located within the site include wetlands (discussed in detail in Section 7.13), and several intermittent streams. These water resources are shown in Figure 16.

The site lies within the Lower Red River subbasin of the Red River basin, with the boundary of the Upper Red River subbasin to the southwest. Intermittent streams drain primarily to the east and south. Seasonal variations in precipitation and groundwater recharge are the primary drivers of lake elevations.

Review of FEMA floodplain maps indicates that the site and its surroundings are not within the 100-year or 500-year floodplain.

7.12.2 Impacts

Construction of the wind turbines, transformer pads, and access roads will disturb land within the project area. The wind turbines will be built on uplands in order to avoid intermittent streams located in the lower positions in the landscape. Access roads to the turbines will be built to avoid impacts to surface waters. The project will not impact floodplain areas.

7.12.3 Mitigative Measures

Access roads constructed adjacent to intermittent streams and drainageways will be designed in a manner so runoff from the upper portions of the watershed can flow unrestricted to the lower portion of the watershed. An application (Notice of Intent) to obtain coverage under the NDPDES general permit for storm water discharges associated with construction activity will be submitted to the North Dakota Department of Health (DOH) prior to construction of the project if necessary.

7.13 Wetlands

7.13.1 Description of Resources

Wetlands and riparian areas are important resources because they provide habitat which is utilized by both resident and migratory wildlife. Wetlands also perform a variety of hydrologic (flood attenuation and groundwater recharge) and water quality (sediment attenuation and nutrient removal) functions.

In October 2007, a wetlands delineation was conducted for the proposed facility locations. The purpose of the site visit was to determine if any jurisdictional wetlands or other waters of the United States (WUS) exist within the boundaries of the project site. Potential permanent impacts to these wetlands or WUS by the construction of the project facilities were also examined. Numerous wetlands are present within the project area. Many of these wetlands occur within linear drainages which may be considered jurisdictional under “navigable waters” of the United States¹. Numerous isolated non-jurisdictional pothole wetlands are present in the project area. These wetlands are often farmed on a seasonal basis. Some wetland depressions may be periodically harvested for hay depending on the wetness of the season. According to the National Wetlands Inventory (NWI) database, wetlands comprise approximately three percent of the land in the project area, which includes both isolated and potentially jurisdictional wetlands located within the project area. Private properties over which the USFWS has easements for protection of wetland resources are also present within the project area. In the case of USFWS wetland easements, the landowner cannot drain, fill, or burn the wetlands within the easement. Refer to the Wetlands Delineation Report in Appendix D.6.

Within the one mile buffer of the project area, there are also three areas of land designated federal Waterfowl Production Areas (WPAs) and are managed through the Devils Lake Wetland Management District (WMD). WPAs and wetland easements are depicted on Figure 3.

7.13.2 Impacts

Construction of proposed access roads and buried collectors may result in impacts to wetlands regulated under the Clean Water Act (Section 404) which are the jurisdiction of the United States Army Corps of Engineers (USACE)-Omaha District. Only the USACE can make a jurisdictional determination and such determinations are generally not made until a permit application is filed or a potential compliance issue exists. During consultation with the USACE-Omaha District for Langdon I, the USACE-Bismarck District provided a map highlighting jurisdictional wetlands within the Langdon I project boundary. Since over half of Langdon II lies within the Langdon I project boundary, these jurisdictional determinations apply to this supplemental application. However, a query letter was submitted to the USACE requesting assistance in identification of environmentally sensitive sites within the Langdon II project area. The USACE response is discussed in Section 10.11 of this supplemental application.

Potential wetlands in relation to the proposed turbine array are shown on Figure 16. Final access road and collector line route placement prior to construction will likely avoid many of these potential wetland sites. Based on the site visit and review of available cartographic information, impacts to wetlands in the project area are largely avoidable through minor modification to the project layout and avoidance of these habitats during the construction phase. All wetlands identified in these figures should be considered areas

¹ The term "navigable waters" means the waters of the United States, including the territorial seas.

to be avoided. Those areas specifically identified for avoidance contain features located within proposed transmission or access routes requiring further consideration during project development.

All proposed turbine locations have been sited to take advantage of higher elevations and, therefore, avoid low-lying areas. However, proposed access roads, collector lines, and transmission lines may cross some potential wetland features that may be disturbed during construction.

7.13.3 Mitigative Measures

Wetlands will be avoided to the extent practicable during the construction phase of the project. If impacts to USACE jurisdictional waters exceed the notification threshold of Nationwide Permit 12 then Langdon Wind will make application to the USACE-Omaha District seeking authorization of unavoidable wetland impacts. Permanent impacts to jurisdictional waters will be mitigated according to USACE requirements.

Wetlands within USFWS easements on private property are under USFWS jurisdiction. If wetland impacts in USFWS easements cannot be avoided, Langdon Wind will work with the USFWS to obtain permits for the impact and create required mitigation. The USFWS requires a compatibility assessment for any wetland impacts on easement land (see Section 10.11.2).

Wind turbines and supporting infrastructure will be located a minimum of 0.25 miles from all WPAs.

Langdon Wind will use BMPs during construction and operation of the project to protect topsoil and adjacent wetland resources and to minimize soil erosion. Practices may include containing excavated material, use of silt fences, protecting exposed soil, stabilizing restored material, and revegetating disturbed areas with native species

7.14 Vegetation

7.14.1 Description of Resources

The ecoregions near the project area are characterized by flat to gently rolling landscapes comprised of a thick mantle of glacial till. The subhumid conditions foster a grassland transitional between the tall and shortgrass prairie. High concentrations of temporary and seasonal wetlands create favorable conditions for duck nesting and migration. Most of the soils in Cavalier County are deep and are conducive to cultivated crops, pasture and hay. In some areas, unfavorable saline or alkaline soil characteristics lower the potential of some of the soils for crops. On the Drift Plains ecoregion, the retreating Wisconsinan glaciers left a subtle undulating topography and a thick mantle of glacial till. A greater proportion of temporary and seasonal wetlands are found on the Drift Plains than in the coteau areas where semi permanent wetlands are numerous. Because of the productive soil and level topography, this ecoregion is almost entirely cultivated, with many wetlands drained or simply tilled and planted. However, valuable waterfowl habitat still remains concentrated in state and federally sponsored duck production areas. The historic grassland on the Drift Plains was a transitional mix of tallgrass and shortgrass prairie. The prairie grasses have been largely replaced by fields of spring wheat, barley, sunflowers, and alfalfa (USDA, 1990).

The diversity of vegetation communities provides valuable habitat to a wide variety of wildlife species. Native grasslands, which are largely shortgrass-prairie and riparian habitat (especially in drainage bottoms) provide important nesting and brooding habitat for many avian species. Since the 1800's,

approximately 75 to 90 percent of North Dakota’s native grasslands have been lost due to cropland conversion. The USFWS (Towner, 2005) stated interest in native prairie for the following reasons:

- Grasslands provide habitat for a number of migratory grassland birds whose populations are declining;
- Grasslands provide nesting habitat for waterfowl;
- Native plants provide plant diversity (genetic) important to agriculture and medicine;
- Grasslands provide habitat for a variety of insects;
- Grassland habitats are crucial for soil and water conservation; and,
- Grasslands provide opportunities for scientific research and recreation.

Plant communities within the vicinity of the project area are typical of former grassland prairie that has been turned into crop-producing land. Historically, the plant communities consisted of tallgrass and shortgrass prairie. However, the majority of native grass plant communities in the project area have been replaced with croplands. Major crops in the project area are canola and sunflower with corn and wheat also occupying some of the fields. Remaining trees in the area have been left to create shelterbelts around residential and agricultural buildings. The trees in these windbreaks are mostly cottonwoods, aspens and pines interspersed among other native vegetation.

7.14.2 Impacts

The project area contains significant amounts of agriculture. Within the project area, potential impacts to plant communities due to construction activities were analyzed during the site visit. Proposed turbine locations, collector line routes, and access roads were visually inspected during the site visit.

Access road construction will result in the greatest effects to native vegetation resulting in permanent loss of these habitats where they occur along selected routes. Installation of the proposed buried and overhead collector system will result in some temporary effects to native and non-native grasslands. Where disturbance is significant, effects can be mitigated by reseeded of the trenched areas with native grasses and legumes following completion of construction activities. There are no legal requirements that will require modification of the proposed action in consideration of the native grasslands present in the project area.

7.14.3 Mitigative Measures

Langdon Wind will work closely with the USFWS and North Dakota Game and Fish Department (NDGFD) during micro-siting to minimize impacts to vegetation within the project area. Langdon Wind conducted a pre-construction inventory of existing wetlands for the Langdon II project area. Langdon Wind will avoid impacts to USFWS WPAs and work with the USFWS to avoid or minimize impacts to wetlands and native grasslands within USFWS easements. Langdon Wind will work to avoid and to minimize impacts to existing trees and shrubs. Refer to Appendix D.6 for a copy of the Wetlands Delineation Report.

If impacts are proposed within USFWS wetland easements, then the USFWS will perform a compatibility analysis and, if acceptable, issue a Special Use (temporary impact) or ROW permit (permanent impact). Langdon Wind will follow permit conditions for site restoration and replacement.

Langdon Wind will use BMPs during construction and operation of the project to protect topsoil and adjacent resources and to minimize soil erosion. Practices may include containing excavated material, protecting exposed soil, stabilizing restored material, and revegetating rangelands with native species.

7.15 Wildlife

7.15.1 Description of Resources

Information on the existing wildlife in the project area was obtained from a variety of sources including observations during a site visit, communication with local residents and information from the NDGFD, North Dakota Parks and Recreation Department (NDPRD), North Dakota Natural Heritage Inventory (NDNHI), University of North Dakota (UND) Extension Office and USFWS, and the results of surveys conducted prior to the development of the first phase of the Langdon project.

Wildlife in the project area consists of birds, mammals, fish, reptiles, amphibians, and insects, both resident and migratory, which utilize the project area habitat for forage, migratory stopover, breeding and/or shelter. Species present in the project vicinity are associated with agricultural fields, pasture grasslands, and wetland areas. Common mammals in the project vicinity include raccoon (*Procyon lotor*), mink (*Mustela vison*), spotted skunk (*Spilogale putorius*), weasel (*Mustela nivalis*), white-tailed deer (*Odocoileus virginianus*), moose (*Alces alces*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), badger (*Taxidea taxus*), porcupine (*Erethizon dorsatum*), and cottontail rabbit (*Sylvilagus floridanus*). The following table contains a list of wildlife observed during field visits to the site. During spring 2007 avian survey events, flight heights of observed species did not overlap the rotor swept area (RSA), which resulted in a low overall mortality risk due to collisions.

Table 12
Wildlife Observed within the Project Vicinity

Common name	Scientific name
Avian	
bald eagle	<i>Haliaeetus leucocephalus</i>
rock dove	<i>Columbia livia</i> ; domestic pigeon
prairie falcon	<i>Falco mexicanus</i>
snow bunting	<i>Plectrophenax nivalis</i>
grey partridge	<i>Perdix perdix</i>
European starling	<i>Sturnus vulgaris</i>
Mammals	
white-tailed deer	<i>Odocoileus virginianus</i>
red fox	<i>Vulpes vulpes</i>
moose	<i>Alces alces</i>
white-tailed jackrabbit	<i>Leapus townsendii</i>
thirteen-lined ground squirrels	<i>Spermophilus tridecemlineatus</i>

Kelly’s Slough, a USFWS refuge and major migratory path for shorebirds, is located approximately 100 miles southeast of the project area. Based on historical field research and observations, it is estimated that shorebirds migrate through Kelly’s Slough in May and July or August.

Twenty 800-meter plots were selected as survey points within the Langdon I project area. A total of 84,886 birds were counted, including 51 known and eight unknown species, indicating that the overall avian use at Langdon is high. However, these high numbers are related to a major migration event which was documented during the first week of the survey. Of the total 84,886 birds counted during this survey, 61,391 (72.3 percent) were seen over the first observation point survey (which consisted of two days). Two species (unidentified sparrow and snow goose) made up 97.3 percent of that first week total and 70.3 percent of the entire survey total. Many of these species have low exposure risk according to the risk exposure index as they primarily fly below the anticipated RSA, with the exception of snow geese, which fly well above the RSA.

Raptor use in the boundary of the first phase of the Langdon project (0.4 birds/20 min) was low and ranked lowest out of fourteen published point count studies for raptor use when compared to rates observed at existing wind facilities. Additionally, overall exposure risk for the site when compared with other wind energy sites is relatively low. The northern harrier, the major contributor to overall raptor use, was observed in 14.5 percent of all surveys. Although northern harriers were the most common raptor species, their exposure risk (0.026) is relatively low due to the fact that most harriers were observed flying below the RSA. The remaining raptor species including a bald eagle, a golden eagle, red-tailed hawks, American kestrels, and sharp-shinned hawks all exhibited low exposure risk (≤ 0.01), as a result of both low overall raptor use and the fact that the majority of individuals were flying below the RSA.

Mortality events are most likely to occur when birds fly within RSAs. Overall, the majority of birds observed flew below the RSA (83.8 percent); fewer flew above the RSA (10.2 percent) or within the RSA (6.0 percent). As a group, raptors were observed primarily below the RSA (72.9 percent); fewer flew within the RSA (18.8 percent) or above the RSA (8.3 percent).

Much of the Langdon Wind Energy Center is already disturbed, consisting predominantly of agricultural and pasture lands. However, the project area does provide birds and other wildlife with cover and opportunities for nesting, perching, and foraging in wooded areas associated with drainages, shelterbelts, and surrounding scattered residences. Permanent habitat loss caused by the construction of Langdon I and II will likely consist of the removal of approximately 125 acres of rangeland and cropland, depending on the total number of turbines and associated access roads. Overall this is a very small proportion of the project area (<1 percent). Short-term disturbance associated with construction activities could temporarily displace birds from these areas and may result in the abandonment of nests. However, many species will have fledged by the time construction begins. Long-term noise and disturbance associated with turbine operation may also reduce habitat quality and result in the permanent displacement of birds from the Project Area.

Based on overall pattern of bird use, lack of high-value habitat, and discussions with USFWS and NDGFD in July 2007, there were no recommendations for future studies at the Langdon Wind Energy Center.

FPL Energy's post-construction monitoring plan includes the Wildlife Response Reporting System (WRRS). During routine maintenance operations FPL Energy field technicians are required to walk three concentric circles around the base of each turbine and report and document avian mortalities. These records will be kept for review and monitoring purposes.

7.15.2 Impacts

Tetra Tech performed a spring avian point count survey on a weekly basis between March 26 and May 31, 2007 within the boundary of the first phase of the Langdon project. Since over half of Langdon II is within the Langdon I project boundary, the results of the spring 2007 are summarized in this supplemental application. Flight heights of many species did not overlap the RSA, which resulted in a low overall mortality risk due to collisions.

An index of relative risk of turbine collision, which takes into account both flight height and abundance, was calculated for each species. Risk was highest for snow geese (2.28), and to a lesser extent, migrating flocks of Canada geese (0.37), tundra swans (0.36), and northern pintails (0.27). While the risk was highest for snow geese, the flight height of snow geese was well above the RSA. The flight heights of many species were well below the RSA. These results indicated a low overall mortality risk due to collisions.

7.15.3 Mitigative Measures

Langdon Wind will utilize the results of the spring 2007 avian surveys in the placement of turbines and wind farm infrastructure for the second phase of the Langdon project. Also if necessary, Langdon Wind will coordinate with USFWS and NDGFD regarding continued avian monitoring and minimization of impacts to WPAs and easement areas. The following measures will be used, to the extent practicable, to help avoid potential impacts to wildlife in the project area during selection of the turbine locations and subsequent development and operation:

- Langdon Wind proposes buffers of 0.25 miles around USFWS WPAs and avoidance of wetland easements.
- Langdon Wind will implement a Wildlife Response Reporting System (WRRS) once turbine construction is completed. The WRRS will include protocols for field technicians, during routine maintenance operations, to report and document avian mortalities.
- Langdon Wind will construct wind turbines using tubular monopole towers and turbines will be minimally lit according to FAA requirements.
- Langdon Wind proposes to place the electrical collection system from the turbines to the project substation underground, if site conditions are favorable.
- Langdon Wind will avoid or minimize disturbance of individual wetlands or drainage systems during construction and operation of the project.
- Langdon Wind will protect existing trees and shrubs where practicable. If impacts are unavoidable, Langdon Wind will replace existing trees and shrubs at a 2:1 ratio unless directed otherwise by the landowner.
- Langdon Wind will maintain sound water and soil conservation practices during construction and operation of the project to protect topsoil and adjacent resources and to minimize soil erosion. To minimize erosion during and after construction, BMPs for erosion and sediment control (SN 19389 9/99) will be utilized. These practices include temporary seeding, permanent seeding, mulching, filter strips, erosion blankets, grassed waterways, and sod stabilization.
- Langdon Wind will revegetate non-cropland and pasture areas with seeding mix as recommended by USFWS and NRCS.

- Langdon Wind will inspect and control noxious weeds in the vicinity of the turbines, access roads, and associated facilities immediately after construction and periodically for the life of the project.

Langdon Wind is committed to minimizing wildlife impacts within the project area. Langdon Wind will design the second phase of the Langdon Project to minimize avian impacts by avoiding high use wildlife habitat, using tubular towers to minimize perching, placing electrical collection lines underground and minimizing infrastructure.

7.16 Rare and Unique Natural Resources

7.16.1 Description of Resources

The USFWS, NDGFD and NDPRD were contacted to review the project area for threatened and endangered species and unique habitats. In response to a request for a project review, the USFWS identified the following federally-listed threatened and endangered species for Cavalier County:

- Whooping Crane (Endangered)
- Gray Wolf (Endangered)

The whooping crane (*Grus americana*) is known to migrate through the west and central counties of North Dakota during the spring and the fall. It prefers to roost on wetland and stockdams with good visibility. Young adults have been known to summer in North Dakota in 1989, 1990 and 1993. The total population is estimated to be between 140 and 150 birds.

The gray wolf (*Canis lupis*) is only known to be an occasional visitor to the Dakotas and is most frequently observed in the Turtle Mountain area.

The bald eagle (*Haliaeetus leucocephalus*) is no longer a federally threatened species but is still protected under the Bald and Golden Eagle Protection Act and has a moderate to high conservation priority within the state of North Dakota (Dyke, 2004; Gomes, *no date*). The bald eagle is known to migrate statewide during the spring and fall but primarily along the major river corridors. The bald eagle concentrates along the Missouri River during the winter and nests in the floodplain forests.

During the spring 2007 avian survey, some special status species were observed within the Langdon I project area. A single bald eagle was seen in the study area. In addition, one golden eagle was observed. Finally, state species of conservation priority were observed at the site and included northern harriers, black terns, sharp-tailed grouse, and Franklin's gull.

7.16.2 Impacts

Impacts to the rare and unique species discussed above are unlikely. The species observed during the spring 2007 surveys are most likely occasional visitors to the area and will not likely be affected by construction of the second phase of the Langdon project. Additionally, the whooping crane and gray wolf were not observed during site surveys performed in spring 2007. Big bluestem (*Andropogon gerardii*) is the only rare or unique plant found within the Langdon II project area and is a wetland species. Wetlands, and subsequently their vegetative content, will be avoided to the extent practicable during the construction phase of the project.

7.16.3 Mitigative Measures

No impacts are anticipated to rare and unique resources. Langdon Wind will avoid the resources identified to the extent practicable.

7.17 Summary of Impacts

Table 13 summarizes the resources that will be impacted as a result of the project and the appropriate mitigation.

**Table 13
 Summary of Impacts and Mitigation**

Resource	Impact	Mitigation
Demographics	Primarily positive due to increased expenditures during construction and the long term benefits of lease payments and an increased tax base of the county due to property taxes.	No adverse impacts are anticipated.
Land Use	Assuming all turbines are 1.5 MW, approximately 22 acres of land will be impacted for aggregate-surfaced access roads and three acres of land will be impacted.	Langdon Wind will work with landowners and regulatory agencies to minimize impacts of the project.
Public Services	No impacts are anticipated.	Langdon Wind will utilize station service from the local electrical utility. MAPP will suggest appropriate configurations for the electrical system and Langdon Wind will abide by the recommendations to prevent impacts to the transmission system.
Human Health and Safety	No impacts are anticipated.	Turbines will be lighted to comply with FAA requirements. Langdon Wind will follow “prudent avoidance” methods to minimize EMF exposure. A variety of security measures will be implemented to reduce the chance of physical and property damage.
Noise	No impacts are anticipated to noise-sensitive resources.	Langdon Wind will locate turbines 1,400 feet from occupied residences so the maximum level of 50 dBA is not exceeded.
Visual	Visual impacts will occur. The impacts are based on a subjective human response.	Langdon Wind will work with landowners and agencies to site turbines. They will not be located in environmentally sensitive areas. Existing infrastructure will be used where possible. Cut and fill areas will be minimized and mitigated as appropriate.
Cultural and Archaeological	Two prehistoric isolated finds and one National Register eligible site were documented. The isolates are recommended as not eligible for the National Register and no further investigation or	Langdon Wind submitted a mitigation plan to North Dakota SHPO and the Army which will assist in the development of an interpretive system to improve the preservation efforts of the Nekoma Pyramid

Table 13
Summary of Impacts and Mitigation

Resource	Impact	Mitigation
	<p>avoidance is recommended.</p> <p>The proposed wind farm will minimally modify the viewshed of the National Register eligible historic property. The principal component of site, the pyramid, is well over one mile from the nearest Langdon II turbine and while it's viewshed will be modified, the modification will not greatly reduce the feeling or association of the site. Nonetheless, there will be an impact.</p>	<p>and associated Safeguard Complex. No additional buffer is necessary.</p>
Recreational Resources	<p>Visual impacts will likely occur.</p>	<p>Visual impacts to recreational resources are likely and are limited to individuals using the resources. No other impacts to recreational resources are expected within the project area.</p>
Land Based Economies	<p>Assuming all turbines are 1.5 MW, a total of 25 acres of land will be impacted. Approximately 90 percent of the site is agricultural land, including pasture land.</p>	<p>Langdon Wind will work with landowners to minimize impact to their land.</p>
Soils	<p>Assuming all turbines are 1.5 MW, approximately 25 acres (includes less than one acre located in prime farmland) of land will be impacted for the turbines and access roads. Impacts will be limited to land needed for the turbine foundations, access roads, and associated facilities.</p>	<p>BMPs for erosion and sediment control will be utilized to minimize wind and water erosion at the site. Only land needed for the facility will be impacted. Temporarily disturbed areas will be restored.</p>
Geologic and Groundwater Resources	<p>No impacts to groundwater resources are anticipated.</p>	<p>Wind turbines will be sited to avoid groundwater resources.</p>
Surface Water and Floodplain Resources	<p>Access roads and turbines will be located and constructed in such a manner that no impacts are anticipated.</p>	<p>Impacts to surface waters will be avoided. Langdon Wind will implement BMPs to minimize erosion and sedimentation at the site.</p>
Wetlands	<p>Minor impacts are anticipated.</p>	<p>Attempts will be made to keep impacts to a minimum. Wetlands will be avoided and Langdon Wind will observe a setback of 0.25 miles from WPAs. If impacts cannot be avoided once micrositing is complete, Langdon Wind will work with the USACE, USFWS, to obtain permits.</p>

Table 13
Summary of Impacts and Mitigation

Resource	Impact	Mitigation
Vegetation	Final project plans have not yet been made. Assuming all turbines are 1.5 MW, approximately 25 acres of land will be impacted for the turbines and access roads.	Langdon Wind will work with the USFWS to minimize impacts. Langdon Wind will avoid existing trees and shrubs as practicable. Langdon Wind will use BMPs during construction and operation to minimize impacts. If impacts to trees or shrubs cannot be avoided, the individual trees or shrubs will be replaced at a ratio of 2:1. Temporarily disturbed areas will be reseeded per USFWS and NRCS recommendations.
Wildlife	Impacts to wildlife populations are expected to be minimal. Potential avian and bat collisions may occur, but are anticipated to be relatively small.	The facility will be designed to specifically minimize avian impacts. Langdon Wind's WRRS will be implemented after construction of the project as described in Section 7.15.3.
Rare and Unique Natural Resources	Impacts to rare and unique natural resources are not anticipated.	No additional mitigative measures are necessary.

8.0 PUBLIC COORDINATION

Keeping the public informed on the status of the project is a key component to its success. Principal stakeholders in the project are landowners that have entered into agreements with Langdon Wind to provide wind rights for the project. Langdon Wind will continue to meet with county officials as the project moves forward. Langdon Wind was recently granted a conditional use permit from the county for Langdon II (Appendix D.7).

Langdon Wind and their representatives have been working with key state and federal agencies including the Department of Commerce, the USFWS and the NDGFD to inform them of the project and to address areas of interest particular to each department.

Langdon Wind is committed to keeping key stakeholders engaged in the project as it moves forward.

9.0 IDENTIFICATION OF POTENTIAL PERMITS/APPROVALS

The federal and state permits or approvals that have been identified as potentially being required for the construction and operation of the project are shown in Table 14. Permits dependent on the final site layout will be applied for after receiving PSC approval, but prior to construction.

**Table 14
Potential Permits and Approvals Required for Construction
and Operation of the Proposed Facility**

Agency	Type of Approval	Status*	Need
Federal Approvals			
USFWS	Compatibility Analysis of Disturbed Easements	NA	If constructing in wetlands within wetland easements or in WPAs, then compatibility analysis by USFWS is required.
	Right of Way Permit	NA	If use is compatible, then a Right of Way Permit is required for permanent disturbance in wetlands within wetland easements.
	Special Use Permit	NA	If use is compatible, then a Special Use Permit is required for temporary disturbance in wetlands within wetland easements.
USACE	Section 404 Permit (NWP)	3	Permit required for fill in jurisdictional waters of the US.
FAA	Form 7460-1, Notice of Proposed Construction	2	Notice and approval are required for structures over 200 feet in height. FAA approval of lighting and marking of turbines is required.
State Permits			
Public Services Commission	Certificate of Site Compatibility	1	Required for construction of generation facility over 100 MW in size.
North Dakota Department of Health	NPDES Permit: General Construction Storm Water	2	Required for disturbance of over one acre of land. Must prepare a Storm Water Pollution Prevention Plan (SWPPP).
North Dakota Department of Health – Lake Region District Health Unit	Septic Tank and Drainfield Permit	4	This permit was granted for Langdon I for the installation of a septic system at the O&M facility.
North Dakota Highway Patrol	Overheight/Overweight Permit	2	Permit required for hauling construction equipment and materials on State Highways.
North Dakota Department of Transportation	Road Approach/Access Permit	4	Permit required for construction of access roads from State Highways. Obtained for Langdon I and applicable to Langdon II (Appendix D.8).

Agency	Type of Approval	Status*	Need
	Utility Permit/Risk Management Documents	2	Permit required for utility crossings on State Highway ROW.
Local Permits			
Cavalier County	Conditional Use Permit	NA	Issued November 6, 2007 (Appendix D.7).
	Haul Road Agreement	2	Permit required for hauling construction equipment and materials on County Roads.
	Utility Permit	2	Permit required for utility crossings on County road ROW

* Status Explanation: 1 Applied – Decision Pending/Received
 2 Will apply once Certificate is received
 3 Final layout will determine whether permit/approval is needed
 4 Permit acquired for Langdon I; new permit will not be necessary

10.0 FACTORS CONSIDERED

The North Dakota Energy Conversion and Transmission Facility Siting Act lists 11 factors to guide the Commission in the evaluation and designation of the site of the facility.

10.1 Public Health and Welfare, Natural Resources, and the Environment

The preceding sections discuss the research and investigations relating the effects of the proposed facility on public health and welfare, natural resources, and the environment. These effects and the proposed mitigation to minimize these effects are summarized in Section 7.17.

10.2 Technologies to Minimize Adverse Environmental Effects

Langdon Wind will utilize the most recent technologies that minimize impacts to the environment. Current wind turbine technologies, including the equipment and siting tools, optimize the wind and land resources.

10.3 Potential for Beneficial Uses of Waste Energy

This factor is not applicable to this project. No waste energy is created using wind energy.

10.4 Unavoidable Adverse Environmental Effects

Unavoidable adverse environmental effects may include the visual impacts associated with the project as well as those impacts related to the placement and use of the land within the site. The visual character of the site will be changed due to the construction of the project. In order to construct the facility, access roads and turbine pads are necessary for the operation and maintenance of the facility. The preliminary turbine and access road layout is expected to impact approximately 25 acres of land assuming all turbines are 1.5 MW.

10.5 Alternatives to the Proposed Site

No alternatives were considered for the second phase of the Langdon project. Langdon Wind believes that the proposed site is the most viable alternative. Langdon Wind is committed to being flexible on the preliminary site layout and will work closely with landowners and regulatory agencies to examine all reasonable alternatives to the preliminary site layout.

10.6 Irreversible and Irretrievable Commitment of Natural Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the use of these resources have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action. There are few commitments of resources associated with this project that are irreversible and irretrievable and include resources primarily related to construction.

Construction resources that will be used include aggregate resources, concrete, steel, and hydrocarbon fuel. Each steel turbine requires the construction of a concrete base 40 to 60 feet across and seven to

10 feet thick. Access roads will require aggregate resources for their construction and maintenance. During construction vehicles will be traveling to and from the site, utilizing hydrocarbon fuels.

10.7 Direct and Indirect Economic Impacts

Direct economic impacts include the short-term impacts associated with up to 25 acres of agricultural land being removed from production due to conversion to turbine sites, associated access roads, and associated facilities. In general, agricultural areas surrounding each turbine can still be farmed, and landowners will be compensated for the land occupied by the wind turbines and associated facilities.

The remaining direct and indirect economic impacts are primarily positive. To the extent that local contractors are used for portions of the construction, total wages and salaries paid to contractors and workers in Cavalier County will contribute to the total personal income of the region. Additional personal income will be generated for residents in the county and the state by circulation and recirculation of dollars paid out by the Applicant as business expenditures and state and local taxes. Expenditures made for equipment, energy, fuel, operating supplies, and other products and services benefit businesses in the county and the state.

Long-term beneficial impacts to the county's tax base as a result of the construction and operation of the second phase of the Langdon Project will contribute to improving the local economy in this area of North Dakota. The development of wind energy in this region will be important in diversifying and strengthening the economic base of north eastern North Dakota. Additional revenues are expected from property and income taxes. Continuing to establish the north-eastern region of North Dakota as an important producer of alternative energy sources may spur the development of wind-related businesses in the area and in turn contribute to the economic growth in the region.

10.8 Existing Development Plans of the State, Local, Government and Private Entities at or in the Vicinity of the Site

No conflicts are anticipated with existing state and local government and private entities' development plans.

10.9 Effect of Site on Cultural Resources

Class I, II and III Surveys, including a search of the SHPO's site and manuscript files, were conducted by Metcalf Archaeological Consultants, Inc. (Metcalf) for the project area (Appendices D.3 and D.4). Metcalf documented two prehistoric isolated finds, 32CVx68 and 32CVx69. The isolates are recommended as not eligible for the National Register and no further investigation or avoidance is recommended.

An historic site, the Safeguard Complex (32CV113) is located approximately 1.1 miles southeast of the nearest proposed wind turbine and out of the project area proper. The pyramid within the complex is 1.3 miles from that proposed turbine. The proposed wind farm will minimally modify the viewshed of the National Register eligible historic property. The principal component of site, the pyramid, is well over one mile from the nearest Langdon II turbine and while its viewshed will be modified, the modification will not greatly reduce the feeling or association of the site. Langdon Wind submitted a mitigation plan to SHPO and the Army to assist in the development of an interpretive system to improve the preservation efforts of the Nekoma Pyramid and associated Safeguard Complex.

Langdon Wind is committed to minimize impacts to these resources and will avoid these resources and any additional resources identified throughout the life of the project. If avoidance is not possible, Langdon Wind will work with the North Dakota SHPO to mitigate potential impacts.

10.10 Effect of Site on Biological Resources

Of the 46 bat species in the United States, 10 occur in North Dakota (ASM, 2007), of which, three species, the western small-footed myotis (*Myotis ciliolabrum*), long-eared myotis (*Myotis evotis*), and long-legged myotis (*Myotis volans*) are listed by the NDGFD as sensitive species (Hagen et al., 2005). The distribution of these species is primarily restricted to the western half of North Dakota (USFWS, 1995). While winter hibernacula consists of mines and caves within barren badlands and conifer forests species may roost in a variety of substrates in the summer including under peeling tree bark (Hagen et al., 2005). Based on species distribution maps and the habitat present in the project area, it is highly unlikely these sensitive species would regularly occur at the project area during the winter or summer seasons. Of the remaining seven species, six are restricted to the eastern half of North Dakota including areas along the Missouri River (USFWS, 1995; Swier, 2006; and USGS, 2007).

The impact of the project on wildlife is expected to be minimal (TtEC, 2007c). Langdon Wind will implement measures to avoid and minimize effects to biological resources at the proposed site. Based on bat turbine collision studies at other wind farms, there are similar species present at the Project Area that have the potential for collisions with turbines and meteorological towers (Kunz et al., 2007). However, based on the overall lack of suitable summer roosting habitat in the project area, impacts to bats are expected to be minimal (TtEC, 2006).

Langdon Wind will implement measures to avoid and minimize effects to biological resources at the proposed site. The impact of the project on wildlife is expected to be minimal. There is potential for avian collisions based on surveys conducted in the area. However, the impact is expected to be minimal.

10.11 Agency Comments

Agencies were contacted to comment on the second phase of the Langdon Project. The following summaries of comments received apply to the project.

10.11.1 North Dakota Game and Fish Department

A response has not been received from the NDGFD regarding the second phase of the Langdon Project. However, the NDGFD stated that their primary concern within the boundary of the first phase of the Langdon Project was the disturbance of native prairie. Based on the results of pre-construction avian monitoring performed in spring 2007 impacts to native prairie will be minimal. Construction of the second phase of the Langdon Project will avoid native prairie to the extent practicable.

10.11.2 U.S. Fish and Wildlife Service

A response has not been received from the USFWS regarding the second phase of the Langdon Project. However, concerns of the USFWS during the first phase of the Langdon Project focused on migratory birds, wetlands, native grasslands, woodland resources, and threatened and endangered species. Both perpetual wetland easement tracts and WPAs are recorded within the first and second phases of the project and are part of the National Wildlife Refuge System. The USFWS stated that a Service permit and

an environmental assessment could be required if wetland easements or WPAs are affected outside the existing ROW as a result of construction activities, stockpiling of material, or acquiring of borrow material. In relation to migratory birds, no collisions or electrocutions with overhead power lines are anticipated because most of the project power collector system will be placed underground and any aboveground collector structures and lines will be constructed using ‘bird-safe designs’ per the Avian Power Line Interaction Committee (APLIC) recommendations. Although there is potential for avian collisions based on surveys conducted in the area; the impact is expected to be minimal since the overall use of birds in the Project Area is low (TtEC, 2007c).

Based on bat species distribution maps and the habitat present in the project area, it is highly unlikely these sensitive bat species would regularly occur at the project area during the winter or summer seasons. Of the remaining seven species, six are restricted to the eastern half of North Dakota including areas along the Missouri River (USFWS, 1995; Swier, 2006; and USGS, 2007). Based on bat turbine collision studies at other wind farms, there are similar species present at the project area that have the potential for collisions with turbines and meteorological towers (Kunz et al., 2007). However, based on the overall lack of suitable summer roosting habitat in the project area, impacts to bats are expected to be minimal (TtEC, 2006). Langdon Wind will implement measures to avoid and minimize effects to biological resources at the proposed site.

10.11.3 North Dakota SHPO

A response has not been received from the North Dakota SHPO regarding Langdon II. However, Metcalf conducted Class II and III surveys of Langdon II in October 2007. Metcalf’s principal investigator met with Paul Picha, North Dakota State Historic Preservation Office Chief archaeologist prior to the inventory to discuss the project. At that meeting it was agreed that the same combination Class II and Class III inventory as had been used for the Langdon I inventory would be employed. Results are discussed in section 7.7 of this document and included in Appendix D.4.

10.11.4 North Dakota Geological Survey

Langdon Wind sent a letter to the North Dakota Geological Survey dated October 26, 2007 (Appendix E). No response has been received.

10.11.5 North Dakota Parks and Recreation Department

A response has not been received regarding the second phase of the Langdon Project. However, the North Dakota Parks and Recreation Department (NDPRD) stated that the first phase of the project will not affect state park lands or land and water conservation fund recreation projects. The NDPRD recommended impacted areas be revegetated with native species. Also, the Natural Heritage Inventory listed one rare plant (*Carex backii*) known to occur within the boundary of the first phase of the Langdon Project. Within the boundary of the second phase of the project, big bluestem (*Andropogon gerardii*) occurs near a WPA in the southwest portion of the project area. These plants are wetland species and will be avoided to the extent practicable along with the wetlands.

10.11.6 North Dakota Office of Attorney General

The Attorney General's Office was asked to comment on the project. The Attorney General and members of his staff are prohibited from giving legal advice, opinions, or assistance to private businesses (Appendix E).

10.11.7 North Dakota Department of Commerce

Langdon Wind sent a letter to the North Dakota Department of Commerce dated October 26, 2007 (Appendix E). No response has been received.

10.11.8 North Dakota Department of Health

The North Dakota Department of Health (NDDOH) sent a response letter stating that the department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. The NDDOH requested that measures be taken to minimize fugitive dust emissions, adverse effects on waters of the state, and noise levels during construction activities. The NDDOH also stated that a permit to discharge storm water during construction is required. The NDDOH included with their response a document titled, Construction and Environmental Disturbance Requirements. This document, along with the response received from NDDOH, are included in Appendix E.

10.11.9 North Dakota Department of Transportation

A response has not been received regarding the second phase of the project. However, the North Dakota DOT sent a response letter during the first phase of the project stating that a Utility Occupancy Application and Permit must be submitted to the Devil's Lake District in order to construct a utility along a highway or across a ROW. Additionally, should utilities run south of Nekoma on Highway 1, a separate utility application would need to be submitted to the Grand Forks District of the North Dakota DOT. Drive permits obtained for Langdon I and applicable to Langdon II are included in Appendix D.8.

10.11.10 North Dakota State Water Commission

The North Dakota State Water Commission sent a response letter dated December 21, 2007 and stated that the property is not located in an identified floodplain and it is believed the project will not affect an identified floodplain. The letter also stated that all waste material associated with the project must be disposed of property and not placed in identified floodway areas. The letter lastly stated that no sole-source aquifers have been designated in North Dakota. A copy of the response letter from the North Dakota State Water Commission is contained in Appendix E.

10.11.11 Natural Resources Conservation Service

The NRCS stated that a review of the prime farmland maps is required in order to determine if the Farmland Protection Policy Act (FPPA) applies to this particular project (Appendix E). They stated that the primary purpose of the FPPA is to reduce the conversion of highly productive farmland to non-agricultural uses. The project includes disturbance to less than one acre of prime farmland. Langdon Wind also sent a letter to the North Dakota State Land Department dated October 26, 2007 (Appendix E). No response has been received.

10.11.12 U.S. Army Corps of Engineers

A letter dated October 26, 2007 was sent to USACE requesting preliminary jurisdictional determination of waters within the project area. The letter stated that based on the results of wetlands determinations within and around the boundary of the first phase of the project, further investigation may or may not be required to determine the presence of USACE jurisdictional waters within the boundary of the second phase of the project. If further investigation determines that wetlands within the second phase of the project area are jurisdictional, formal delineation would be required by USACE.

10.11.13 Aeronautics Commission

Langdon Wind sent a letter to the Aeronautics Commission dated October 26, 2007 (Appendix E). No response has been received.

10.11.14 North Dakota Department of Agriculture

Langdon Wind sent a letter to the North Dakota Department of Agriculture dated October 26, 2007 (Appendix E). No response has been received.

10.11.15 North Dakota Department of Human Services

Langdon Wind sent a letter to the North Dakota Department of Human Services dated October 26, 2007 (Appendix E). No response has been received.

10.11.16 North Dakota Department of Labor

The North Dakota Department of Labor sent a response dated October 30, 2007 (Appendix E) stating that they have no authority to issue any permits regarding land or environmental concerns.

10.11.17 North Dakota Department of Career and Technical Education

Langdon Wind sent a letter to the North Dakota Department of Career and Technical Education dated October 26, 2007 (Appendix E). No response has been received.

10.11.18 North Dakota Governor

Langdon Wind sent a letter to North Dakota Governor John Hoeven dated October 26, 2007 (Appendix E). No response has been received.

10.11.19 North Dakota Indian Affairs

Langdon Wind sent a letter to the North Dakota Indian Affairs dated October 26, 2007 (Appendix E). No response has been received.

10.11.20 North Dakota Office of Management and Budget

Langdon Wind sent a letter to the North Dakota Office of Management and Budget dated October 26, 2007 (Appendix E). No response has been received.

10.11.21 North Dakota Soil Conservation Committee

Langdon Wind sent a letter to the North Dakota Soil Conservation Committee dated October 26, 2007 (Appendix E). No response has been received.

10.11.22 Cavalier County Soil Conservation District

Langdon Wind sent a letter to Cavalier County Soil Conservation District dated October 26, 2007 (Appendix E). No response has been received.

10.11.23 Job Service North Dakota

In a letter dated October 30, 2007 (Appendix E), Job Service North Dakota stated that they have no information regarding boundaries of the tracts listed in Langdon Wind's letter dated October 26, 2007.

11.0 QUALIFICATIONS OF CONTRIBUTORS TO SITING STUDY

NAME PROJECT ROLE	EDUCATION AND PROFESSIONAL EXPERIENCE
JOHN DIDONATO Director, Project Development FPL Energy	Project developer representing FPL Energy in all commercial and regulatory aspects of the project. Bachelor's degree, Kent State University. Master's degree, Florida Atlantic University
SCOTT SCOVILL Director, Project Development FPL Energy	Project developer representing FPL Energy in all commercial and regulatory aspects of the project. Bachelor's degree, Kent State University. Master's degree, Florida Atlantic University
HOLLY STARLING Manager, Project Development FPL Energy	Project developer representing FPL Energy in all commercial and regulatory aspects of the project. Bachelor's degree, Kansas State University. Master's degree, Webster University
GEOFFREY WEST Environmental Specialist FPL Energy	Mr. West has over 8 years combined experience working in the energy industry as well as for the state water management district as an environmental scientist. Mr. West currently provides environmental support to FPL Energy Development. B.S., University of the South
DICK RAUSCH Construction Project Manager	Provided input on route from a "constructability" perspective.
TOM FACTOR Land Easement Specialist/ Route Mapping FPL Energy	Representing FPL Energy on wind resource, landowner discussions and selection of corridor.
TED WEISSMAN Land Easement Specialist FPL Energy	Representing FPL Energy on landowner discussions and selection of corridor.
BRIAN BJELLA Attorney for Applicants Fleck, Mather & Strutz, Ltd.	J.D. degree, University of North Dakota Applicant's counsel.
TRACEY MARTORANO Project Manager Tetra Tech EC, Inc.	Ms. Martorano has over nine years in the environmental consulting business. She has experience preparing and securing environmental permits for energy-related facilities, coordinating and managing biological and cultural field surveys, and contributing to National and State Environmental Policy Act (NEPA) documentation. Ms. Martorano manages siting studies, prepares environmental permits, and conducts consultation with local, state and federal stakeholders for wind energy.
JEFFREY RICE Environmental Group Manager Tetra Tech	Mr. Rice has over 25 years of environmental consulting experience and has managed environmental, natural resource, soil and regulatory projects. He also has a wide range of experience in National Environmental Policy Act (NEPA) and natural resource projects including preparation of environmental impact statements (EISs), environmental assessments (EAs), and critical issue evaluations for mining, power plants, wind energy and other large scale industrial developments. Association of Ground Water Scientists and Engineers B.S., Land Resources (Soil Science), Montana State University, 1982

NAME PROJECT ROLE	EDUCATION AND PROFESSIONAL EXPERIENCE
HAVEN WESTERMAN Environmental Scientist Tetra Tech	<p>Ms. Westerman has over five years of experience performing natural resource investigations, including geographic information systems fieldwork, Phase I environmental site assessments (ESAs), permitting, and regulatory compliance. Tasks also include monitoring and sampling support for remediation sites.</p> <p>ASTM International Member B.S., Biology, Montana State University-Billings, 2002</p>
MARK PEARSON Database Manager and GIS Analyst Tetra Tech	<p>Mr. Pearson has over 19 years of experience in database management, data analysis, and geographical information systems (GIS). As the database manager for Tetra Tech’s Helena office, he provides data retrieval, validation, and quality control; editing; conversion; loading; presentation; and database development and integrity. He also provides database support for seven other Tetra Tech offices for mine site, landfill, and pipeline projects, and is responsible for statistical analyses of landfill monitoring and remediation data. He has extensive DOS, Win3.x through Windows XP, Windows Server 2003, and Linux operating system experience and uses ArcView/ArcInfo GIS, AutoCAD, Microsoft Access, Paradox, Excel, and Quattro for data presentation, analysis, and graphics.</p> <p>BS, Geology, University of Minnesota, 1983</p>
ADDISON MOHLER Natural Resources Specialist Tetra Tech	<p>Mr. Mohler has over five years of experience in wildlife biology. A native of the desert Southwest, Mr. Mohler is intimately familiar with the flora and fauna of the region and has concentrated his interest on mammals and mega fauna. He has conducted biological surveys and environmental assessments for tribal entities and the Bureau of Indian Affairs, and is well-versed in National Environmental Policy Act and its applicability on tribal lands. Mr. Mohler is skilled in the use of a variety of global positioning system (GPS), geographical information systems (GIS), maps, and mapping systems. He also has extensive experience operating outboard, inboard and jet drive boats on lake and swift waters; all-terrain vehicles, heavy equipment, and net guns.</p> <p>BS, Wildlife, Watershed, & Range Management, University of Arizona, 2000</p>
GREGORY C. DAWDY Senior Environmental Scientist/Project Manager	<p>Mr. Dawdy has over 20 years of experience in wetlands delineation/mitigation and permitting, sediment and surface water sampling, biological assessments, preliminary assessments, site investigations and remedial investigations/feasibility studies (RI/FS). Mr. Dawdy has served as project manager and project biologist for numerous wetland delineation/mitigation projects in Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Nebraska, Minnesota, Missouri, New York, North and South Dakota, Wisconsin and Wyoming. He has extensive experience performing water quality and aquatic biota surveys in Lake Michigan and the Mississippi, Illinois, and Ohio River systems. He has also served as field task manager, site safety and health officer and/or environmental scientist for numerous remedial investigations performed for various districts of the U.S. Army Corp of Engineers (USACE) under the Defense Environmental Restoration Program (DERP).</p> <p>Society of Wetland Scientists American Fisheries Society BS, Biological Studies, Southern Illinois University, 1985</p>

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13.0 DEFINITIONS

ADT	Average Daily Traffic
ANSI	American National Standards Institute
APE	Area of Potential Effects
ASTM	American Society for Testing and Materials
Asynchronous Generator	A cage-wound generator, also called an induction generator, used to generate alternating current
BMPs	Best Management Practices; prevents soil erosion and sedimentation
Capacity	The capability of a system, circuit, or device for storing electronic charge
Certificate	Certificate of Site Compatibility
Class I Cultural Resources Inventory	Existing data inventory – a large-scale review and compilation of known cultural resource data
Class III Cultural Resources Inventory	Intensive field inventory – complete surface inventory of a specific area.
Aggregate Surface Commission or PSC	Road cover used for proposed access roads North Dakota Public Service Commission
CRP	Conservation Reserve Program
Corridor Certificate	Certificate of Corridor Compatibility
DbA	A-weighted decibel
Distribution	Relatively low-voltage lines that deliver electricity to the retail customer's home or business
DOE	US Department of Energy
Electromechanical	Of, relating to, or being a mechanical process or device actuated or controlled electrically; especially being a transducer for converting electrical energy to mechanical energy
EMF	Electric and Magnetic Field
EPC	Engineering, procurement, and construction
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
FPL Energy	FPL Energy
FPPA	Farmland Protection Policy Act
Ft	Foot/Feet
GE	General Electric
Gearbox	An assembly of parts including the speed-changing gears and the propeller shaft by which the power is transmitted from an automobile engine to a live axle; the speed-changing gears in such an assembly
Generator	A machine by which mechanical energy is changed into electrical energy
Geotechnical	A science that deals with the application of geology to engineering
GFD	North Dakota Game and Fish Department
Hub	The central part of a circular object (as a wheel or propeller)
Interconnection	To be or become mutually connected
kV	kilovolt
kW	kilowatt
MW	megawatt
M	meter
m/s	meter per second

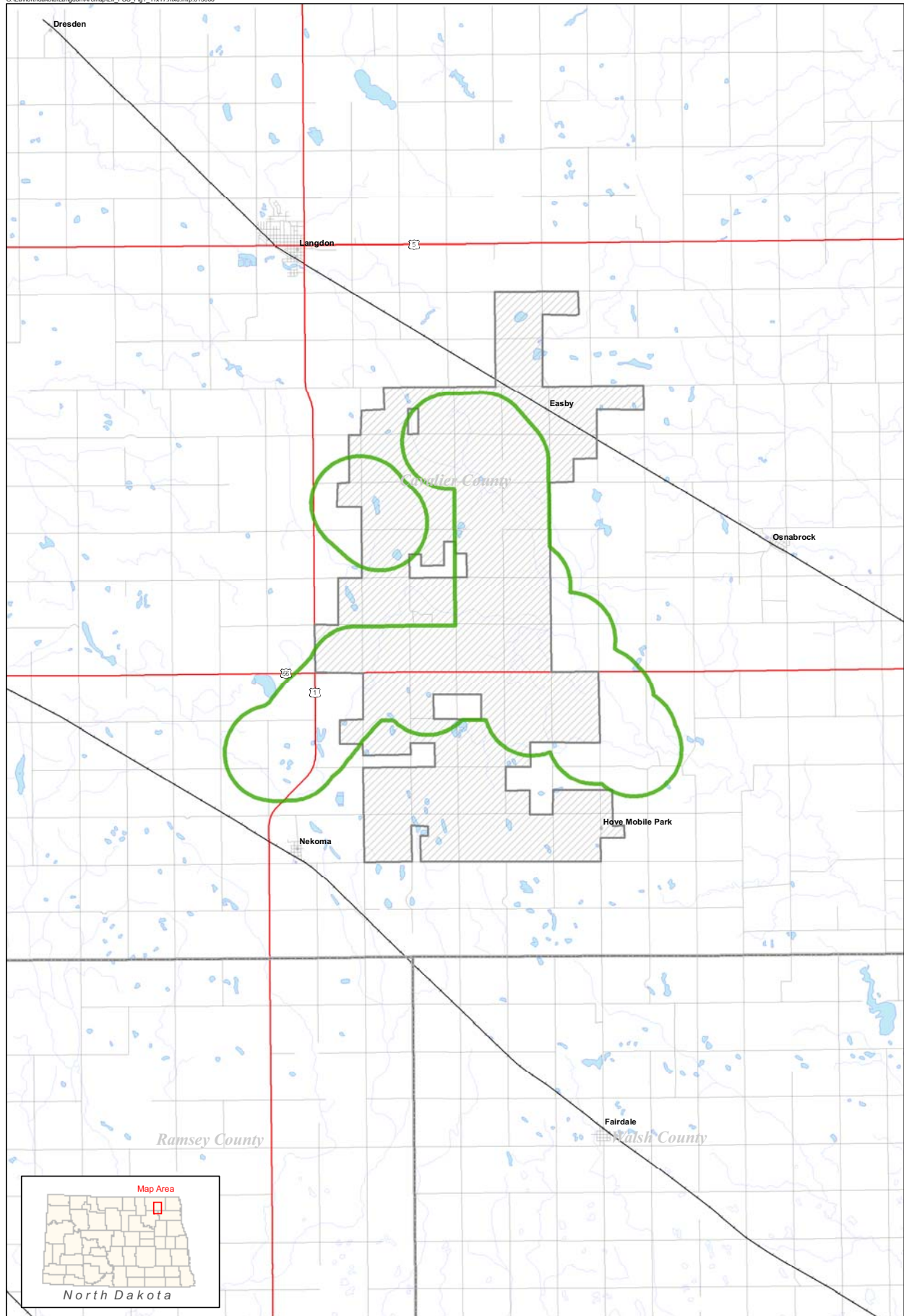
DEFINITIONS (Continued)

MAPP	Mid-Continent Area Power Pool
Micrositing	The process in which the wind resources, potential environmentally sensitive areas, soil conditions, and other site factors, as identified by local, state and federal agencies, are evaluated to locate wind turbines and associated facilities.
MISO	Midwest Independent System Operator
mph	miles per hour
Nacelle	A streamlined enclosure (as for an engine), which houses the gearbox, generator, brake, cooling system and other electrical and mechanical systems
NDDOT	North Dakota Department of Transportation
NESC	National Electric Safety Code
NDAC	North Dakota Administrative Code
NDCC	North Dakota Century Code
NDPRD	North Dakota Parks and Recreation Department
NHID	Natural Heritage Inventory Database
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O&M	Operations and maintenance facility
PII	Potential Impact Index
Pitch	The action or a manner of pitching; especially an up-and-down movement
PPA	Power Purchase Agreements
PSC or Commission	North Dakota Public Service Commission
PTC	Production Tax Credit
RECs	Recognized Environmental Conditions
Resistance	The opposition offered by a body or substance to the passage through it of a steady electric current
Rotor	The rotor consists of three blades mounted to a rotor hub
RD	Rotor Diameter: Diameter of the rotor from the tip of a single blade to the tip of the opposite blade
ROW	Right-of-Way
rpm	Revolutions per minute
RSA	Rotor swept area
SCADA	Supervisory Control and Data Acquisitions (communications technology)
SHPO	North Dakota State Historic Preservation Office
Step-up Transformer	A transformer that increases voltage
Substation	A subsidiary station in which electric current is transformed
SWPPP	Storm Water Pollution Prevention Plan
Torque	A force that produces or tends to produce rotation or torsion; also a measure of the effectiveness of such a force that consists of the product of the force and the perpendicular distance from the line of action of the force to the axis of rotation : a turning or twisting force
Transformer	An electrical device by which alternating current of one voltage is changed to another voltage
Transmission	An assembly of parts including the speed-changing gears and the propeller shaft by which the power is transmitted from an automobile engine to a live axle; the speed-changing gears in such an assembly

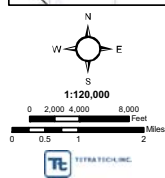
DEFINITIONS (Continued)

USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service
UT	Unincorporated Township
WMD	Wetland Management District
WPAs	Waterfowl Protection Area
WRRS	Wildlife Response and Reporting System
Yaw	To deviate erratically from a course (as when struck by a heavy sea); especially to move from side to side: to turn by angular motion about the vertical axis

FIGURES



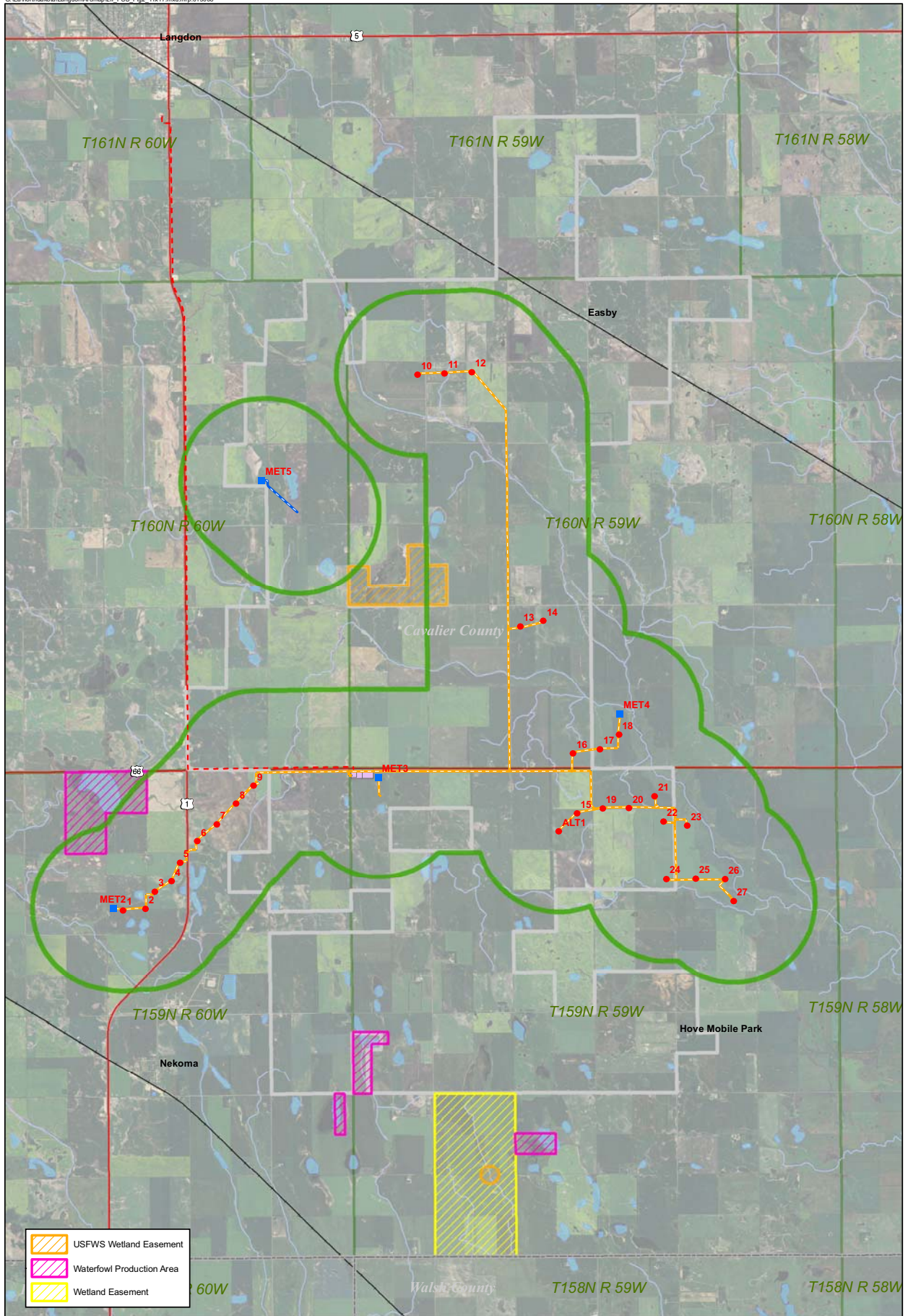
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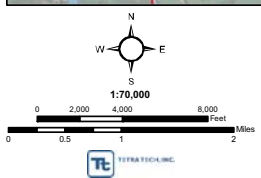
- PSC Supplemental Application Project Area (based on 1 mile buffer around facilities)
- Initial Langdon Wind PSC Application Project Area
- County Boundary
- State Highway
- Local Road
- Railroad
- Lake/Pond
- River

Figure 1

**Project Area Location Map
Langdon Wind Energy Center Phase II
Cavalier County, North Dakota**

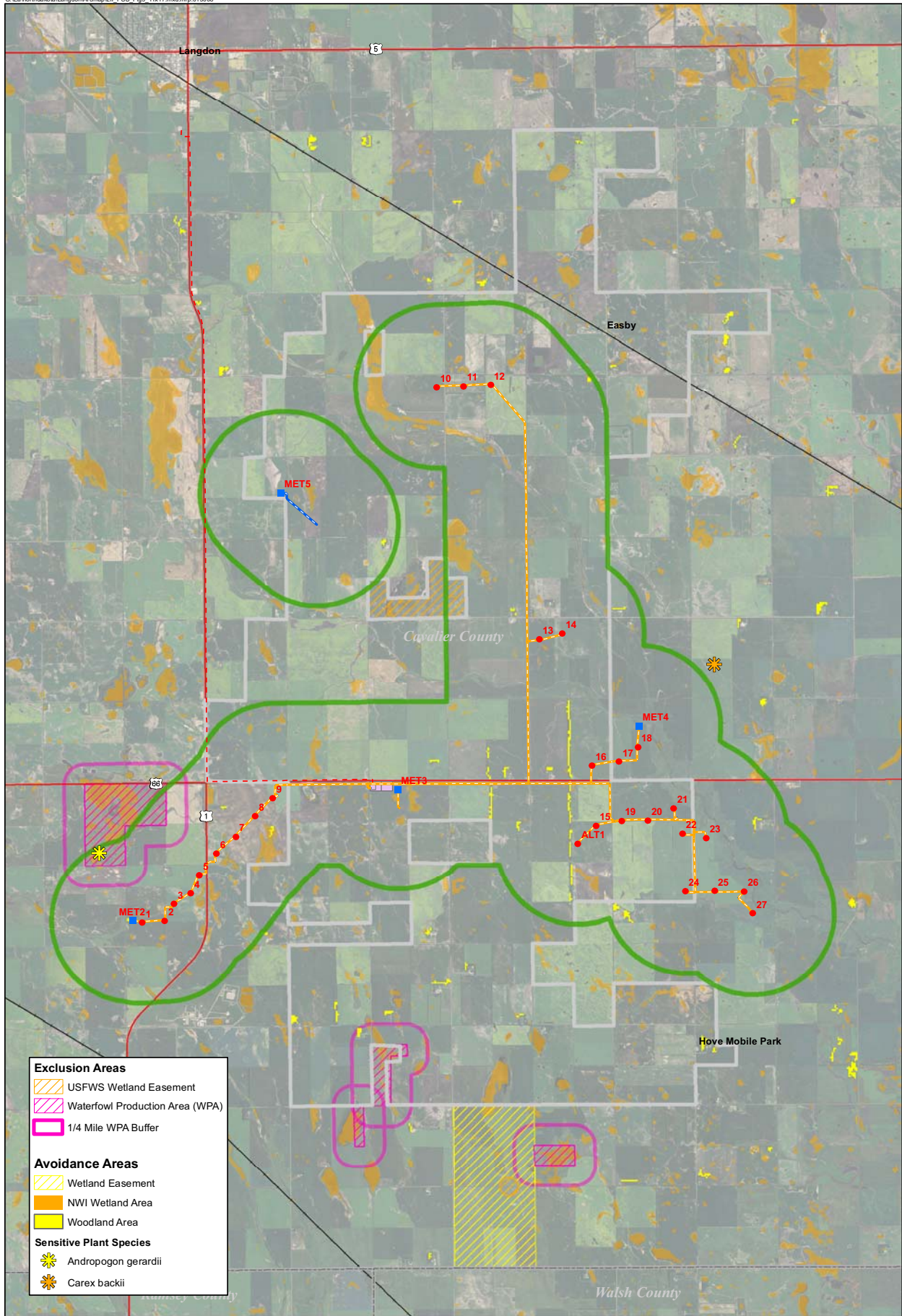


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- | | | |
|--|-----------------------|-----------------------------------|
| PSC Supplemental Application Project Area (based on a 1 mile buffer around facilities) | Lake/Pond | Fiberoptic Line |
| Initial Langdon Wind PSC Application Project Area | State Highway | Access Road |
| County Boundary | Local Road | MET Tower Location |
| Township / Range | Railroad | |
| | River | <i>Permitted Under Langdon I:</i> |
| | Turbine Location | Substation |
| | Underground Collector | Transmission Line |

Figure 2
Project Area Map
Langdon Wind Energy Center Phase II
Cavalier County, North Dakota



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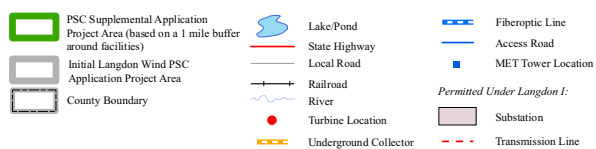
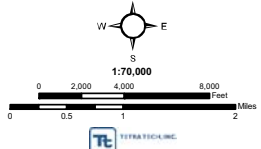
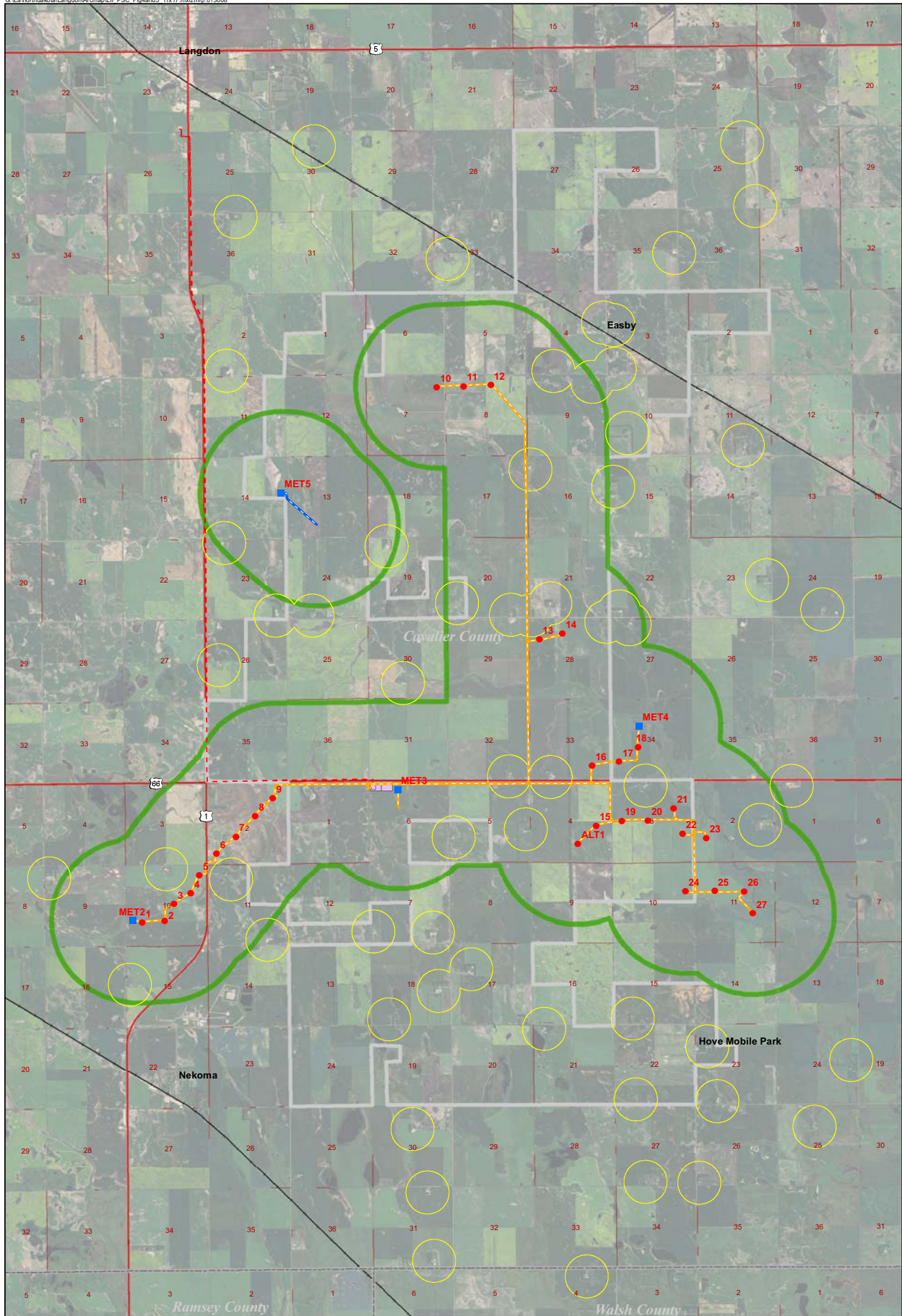
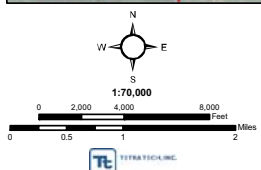


Figure 3

Exclusion and Avoidance Areas Map
Langdon Wind Energy Center Phase II
Cavalier County, North Dakota

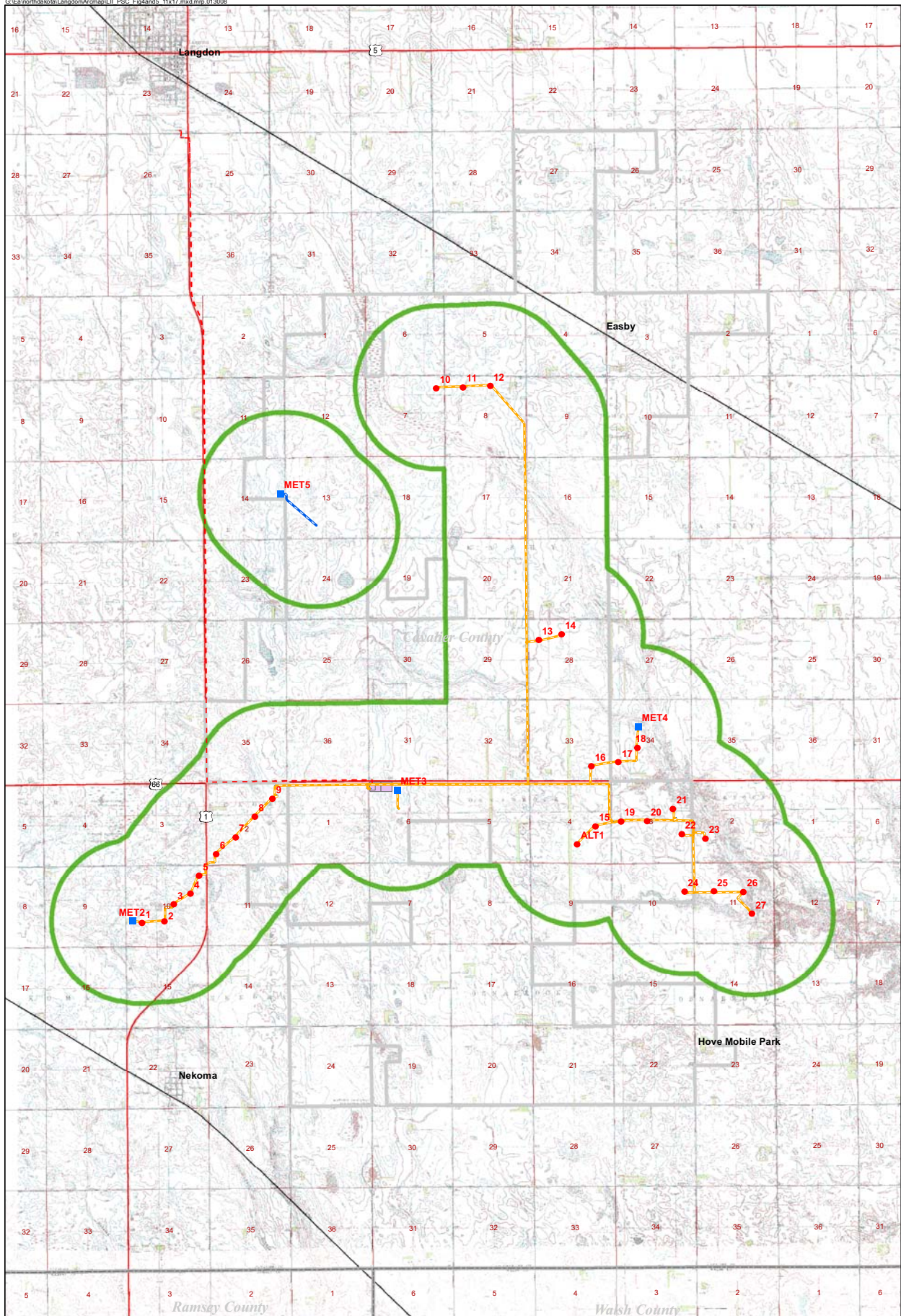


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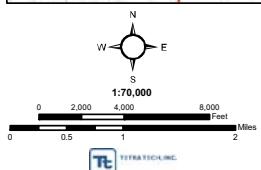


- PSC Supplemental Application Project Area (based on a 1 mile buffer around facilities)
- Initial Langdon Wind PSC Application Project Area
- County Boundary
- 1400 ft Residential Buffer
- Lake/Pond
- State Highway
- Local Road
- Railroad
- River
- Turbine Location
- Underground Collector
- Fiberoptic Line
- Access Road
- MET Tower Location
- Substation
- Transmission Line

Figure 4
Residential Locations Map
Langdon Wind Energy Center Phase II
Cavalier County, North Dakota



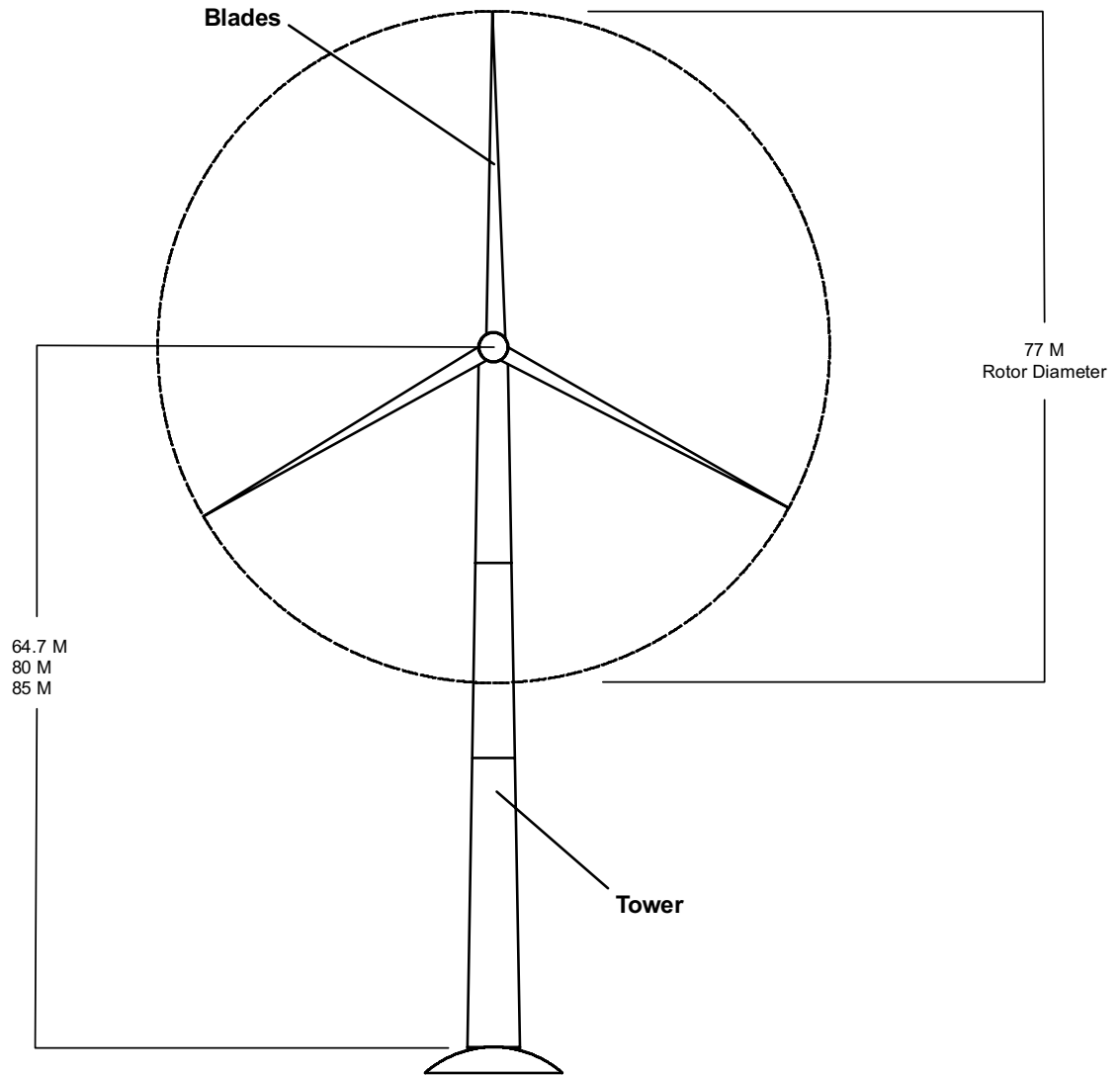
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- PSC Supplemental Application Project Area (based on a 1 mile buffer around facilities)
- Initial Langdon Wind PSC Application Project Area
- County Boundary
- Lake/Pond
- State Highway
- Local Road
- Railroad
- River
- Turbine Location
- Underground Collector
- Fiberoptic Line
- Access Road
- MET Tower Location
- Substation
- Transmission Line

Figure 5

**Project Area Topographical Map
Langdon Wind Energy Center Phase II
Cavalier County, North Dakota**



GE Wind Energy 1.5 SLE 60 Hz Wind Turbine

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Figure 6

Wind Turbine Design Features
Langdon Wind Energy Center Phase II
Cavalier County, North Dakota

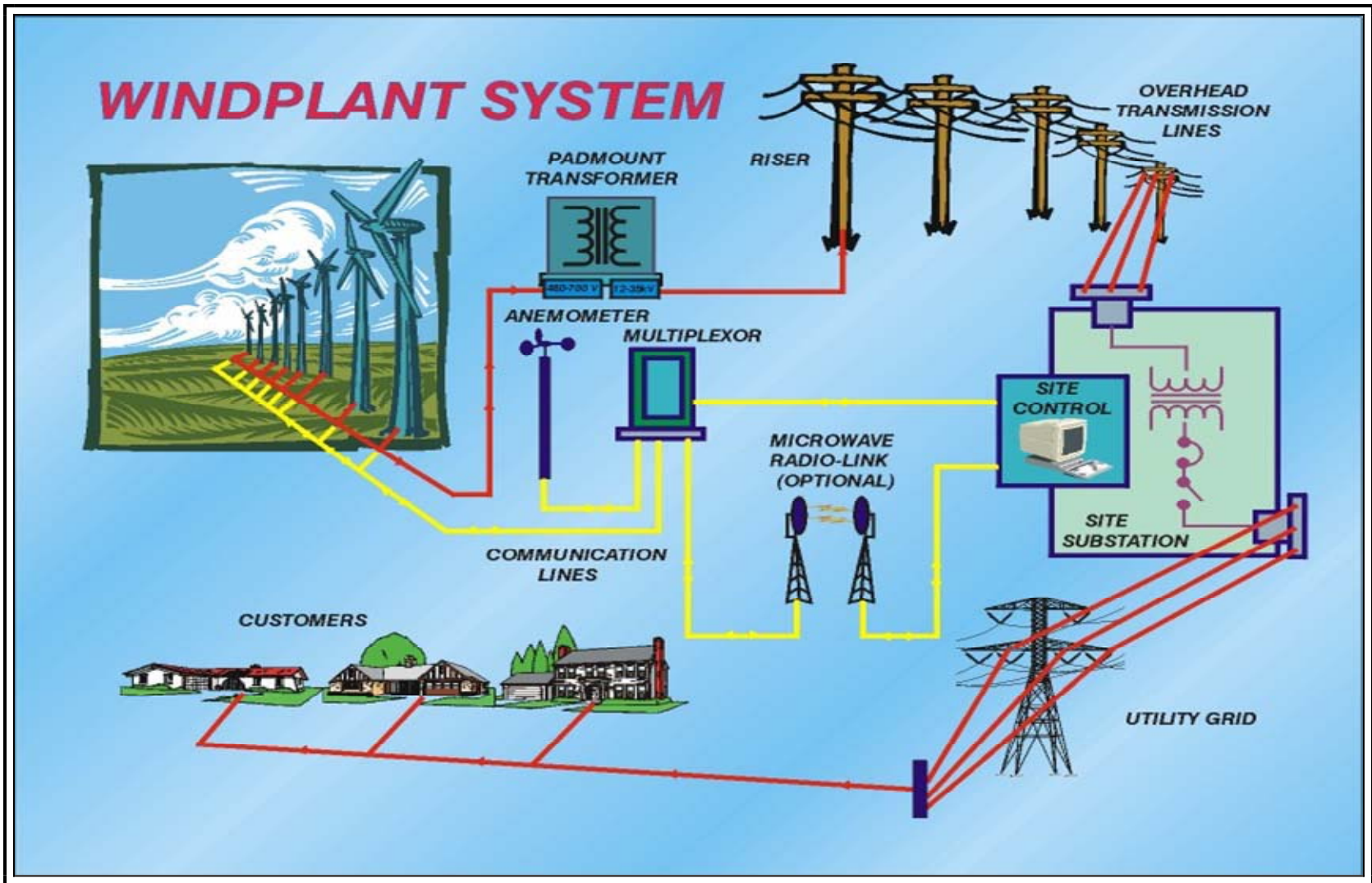


Figure 7
 Path of Energy Diagram
 Langdon Wind Energy Center Phase II
 Langdon Wind, LLC
 Cavalier County, North Dakota

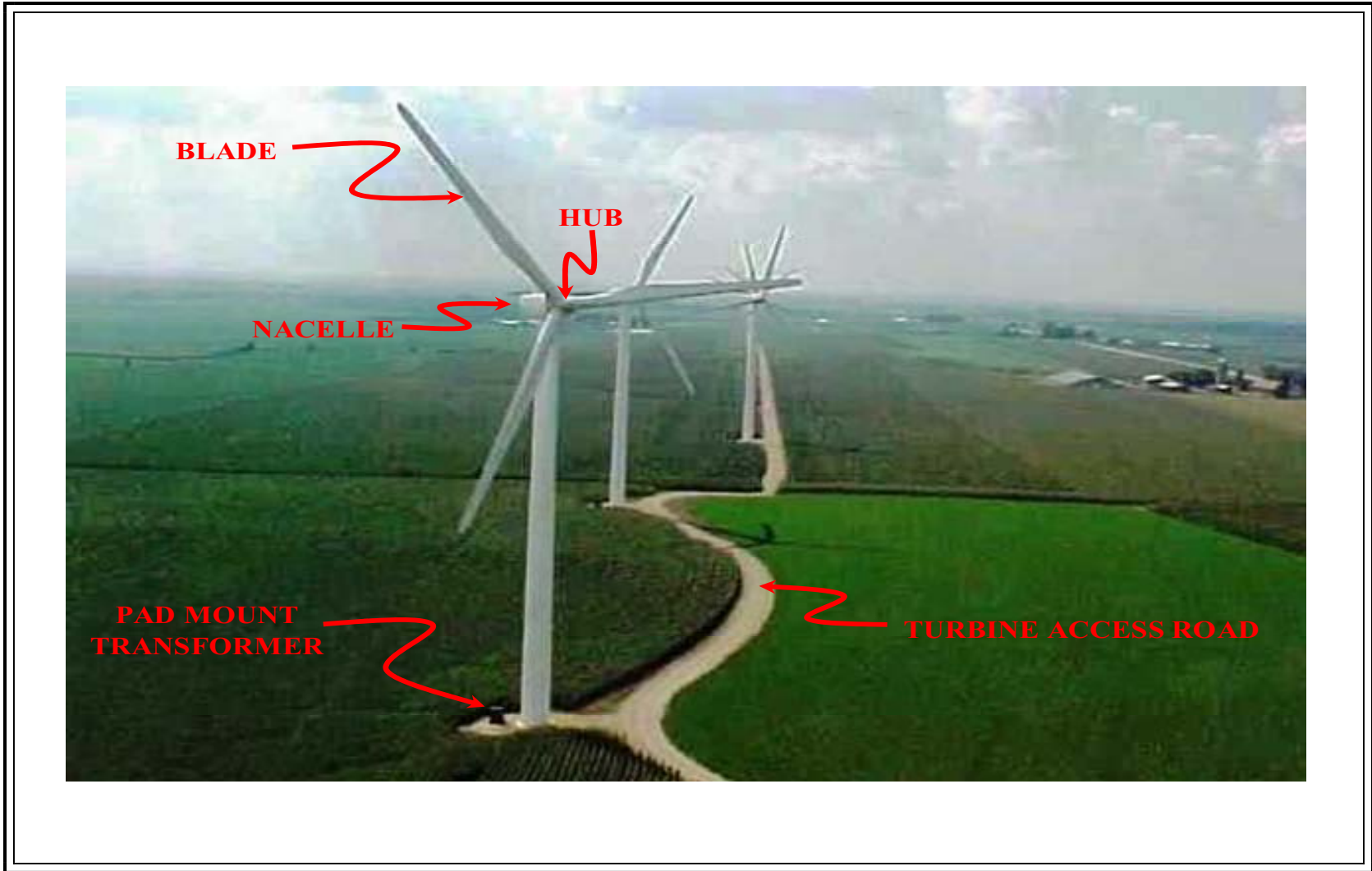
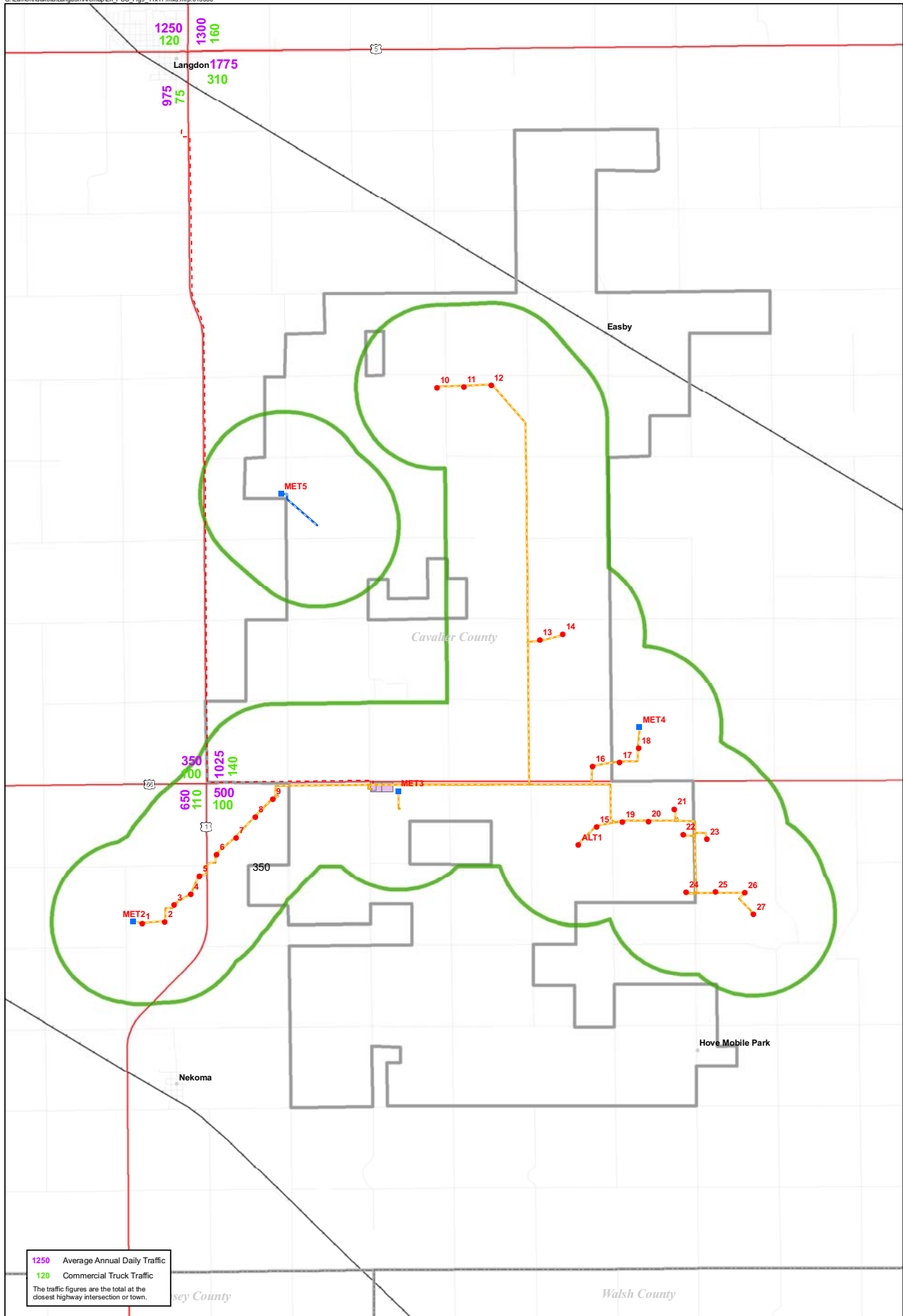
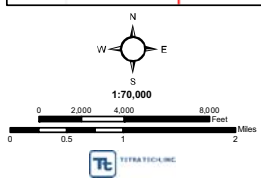


Figure 8
Typical Wind Energy Center Layout
Langdon Wind Energy Center Phase II
Langdon Wind, LLC
Cavalier County, North Dakota



1250 Average Annual Daily Traffic
 120 Commercial Truck Traffic
 The traffic figures are the total at the closest highway intersection or town.



- PSC Supplemental Application Project Area (based on a 1 mile buffer around facilities)
- Initial Langdon Wind PSC Application Project Area
- County Boundary
- State Highway
- Local Road
- Railroad
- River
- Turbine Location
- Underground Collector
- Fiberoptic Line
- Access Road
- MET Tower Location
- Substation
- Transmission Line

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Figure 9

**Average Daily Traffic Map
 Langdon Wind Energy Center Phase II
 Cavalier County, North Dakota**

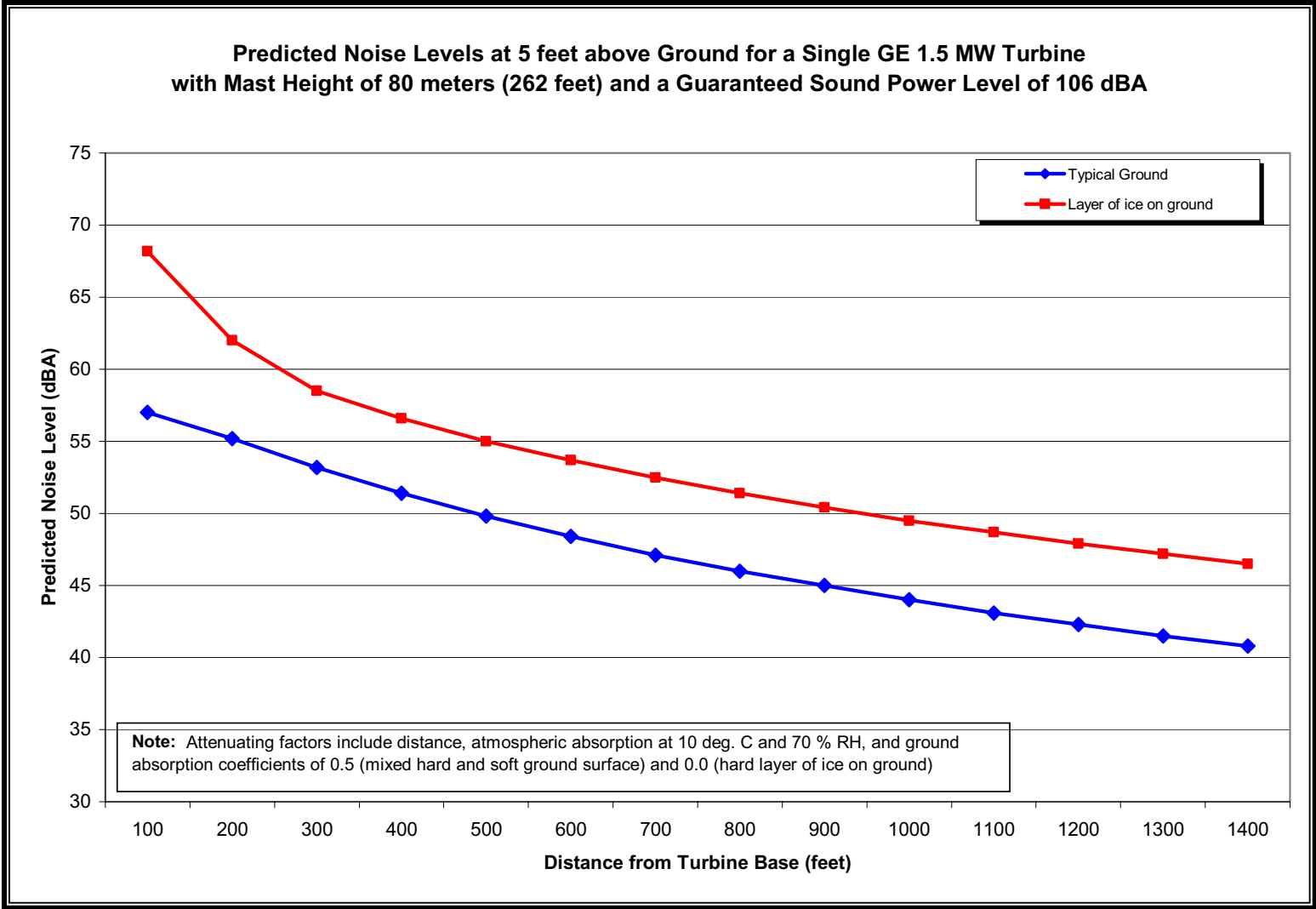


Figure 10
Predicted Noise Levels for 1.5 MW Wind Turbines (dBA)
Langdon Wind Energy Center Phase II
Langdon Wind, LLC
Cavalier County, North Dakota



Figure 11
Photo of Typical Landscape
Langdon Wind Energy Center Phase II
Langdon Wind, LLC
Cavalier County, North Dakota



TETRA TECH EC, INC.

Figure 12
Photo Simulation
Langdon Wind Energy Center Phase II
Langdon Wind, LLC
Cavalier County, North Dakota

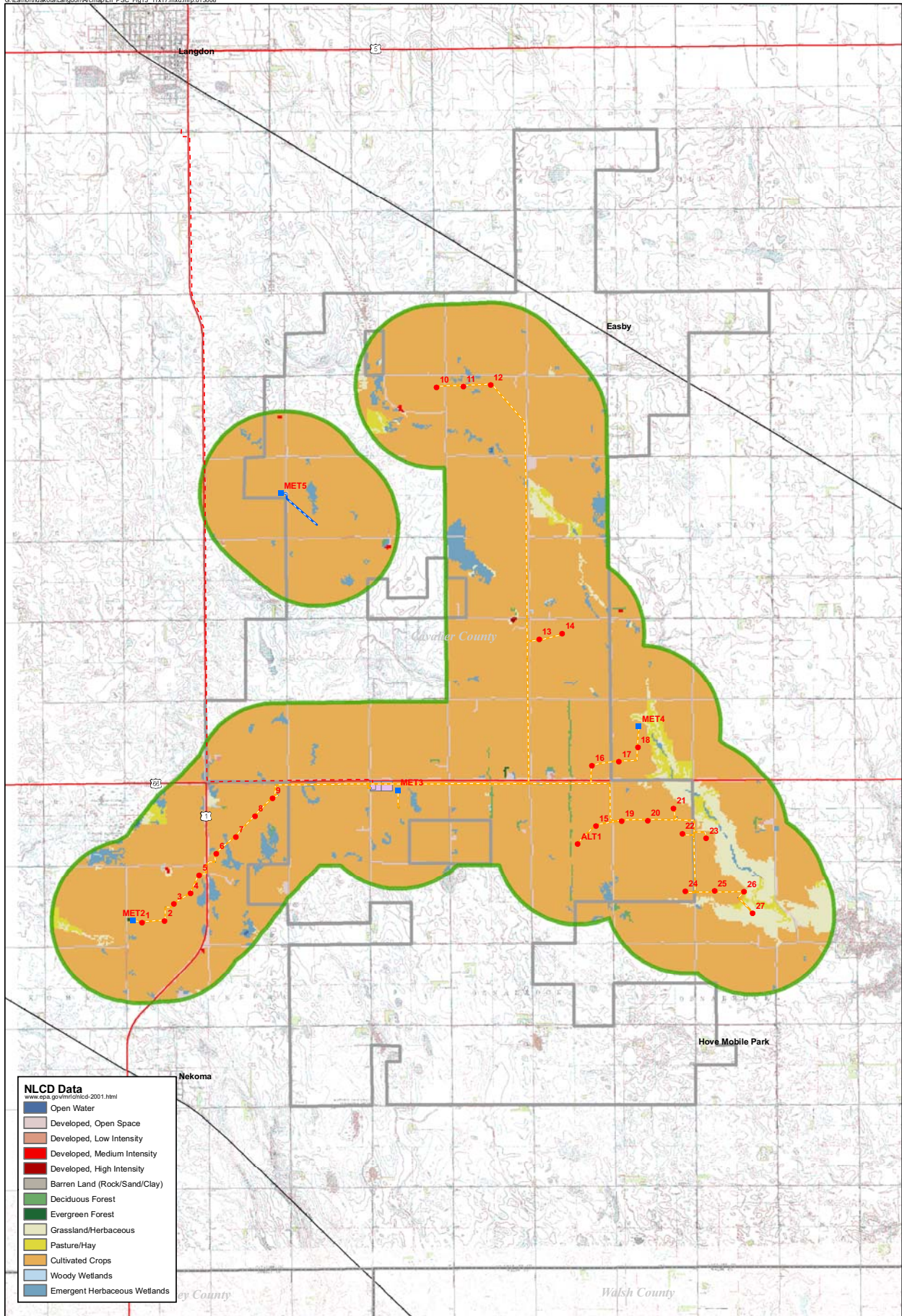
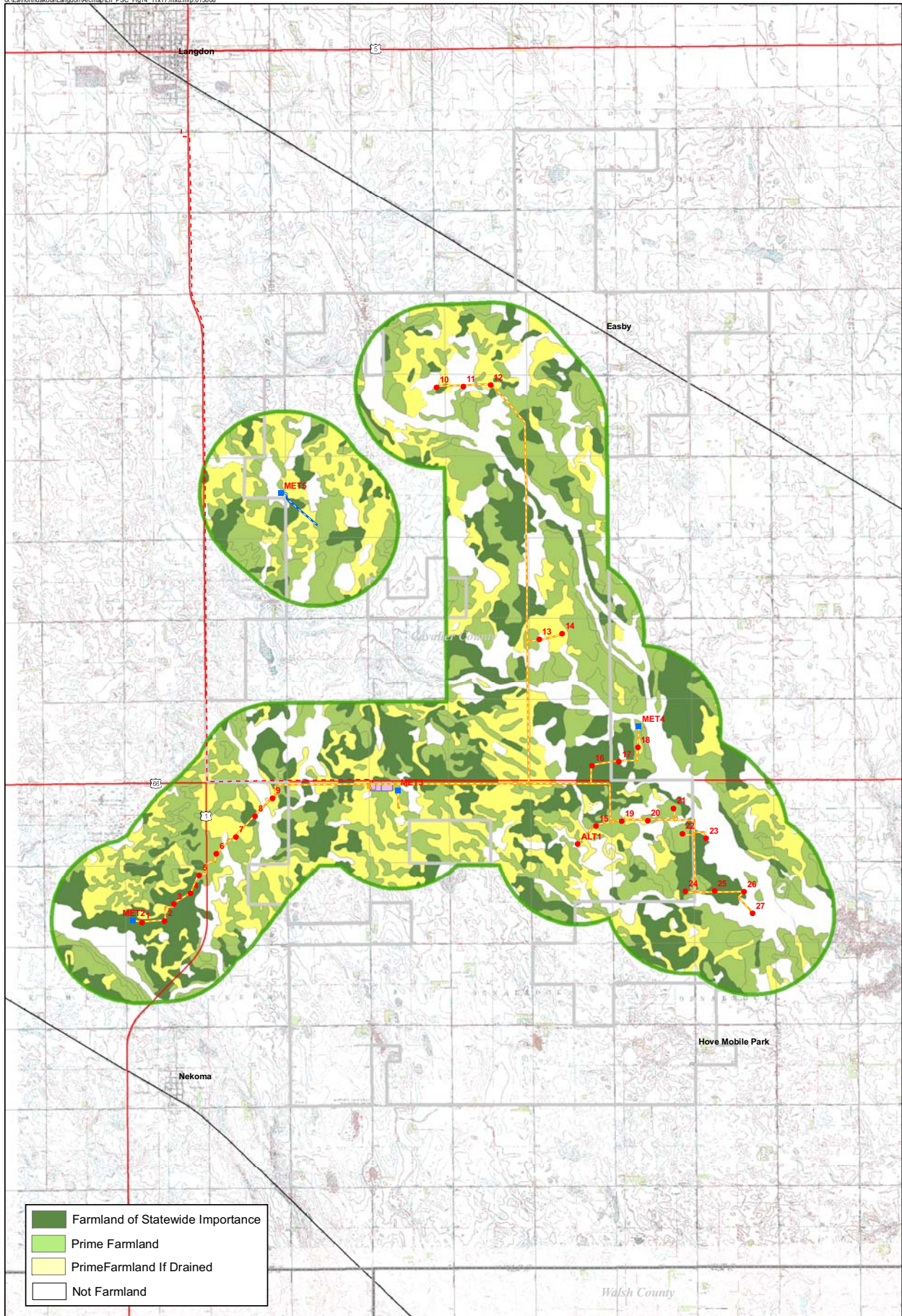


Figure 13
Land Cover Map
Langdon Wind Energy Center Phase II
Cavalier County, North Dakota



	Farmland of Statewide Importance
	Prime Farmland
	Prime Farmland If Drained
	Not Farmland

	PSC Supplemental Application Project Area (based on a 1 mile buffer around facilities)		State Highway		Fiberoptic Line
	Initial Langdon Wind PSC Application Project Area		Local Road		Access Road
	County Boundary		Railroad		MET Tower Location
	Township / Range		River		Turbine Location
			Underground Collector		Substation
			Transmission Line		

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Figure 14

**Prime Farmland
Soils Distribution Map
Langdon Wind Energy Center Phase II
Cavalier County, North Dakota**

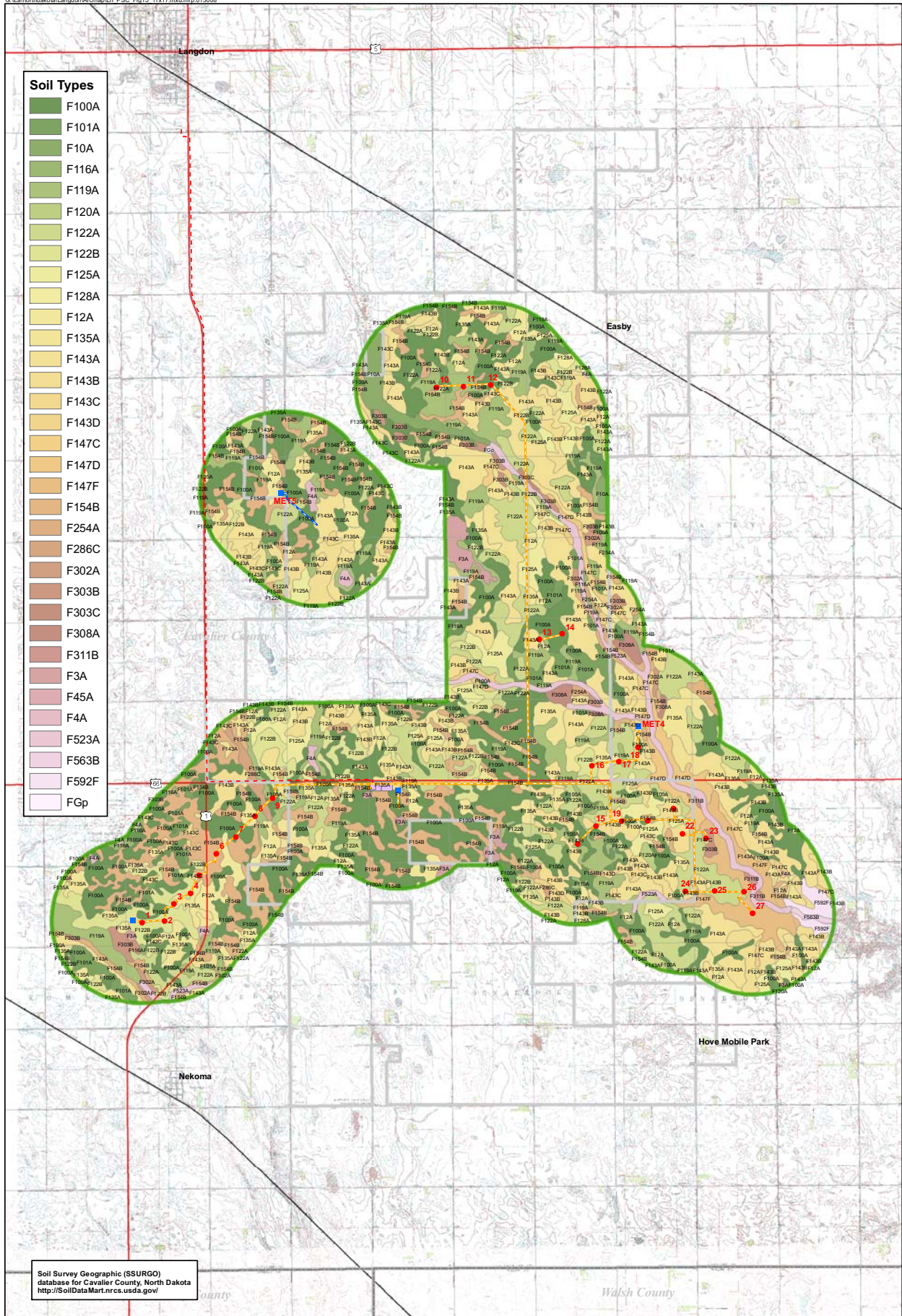
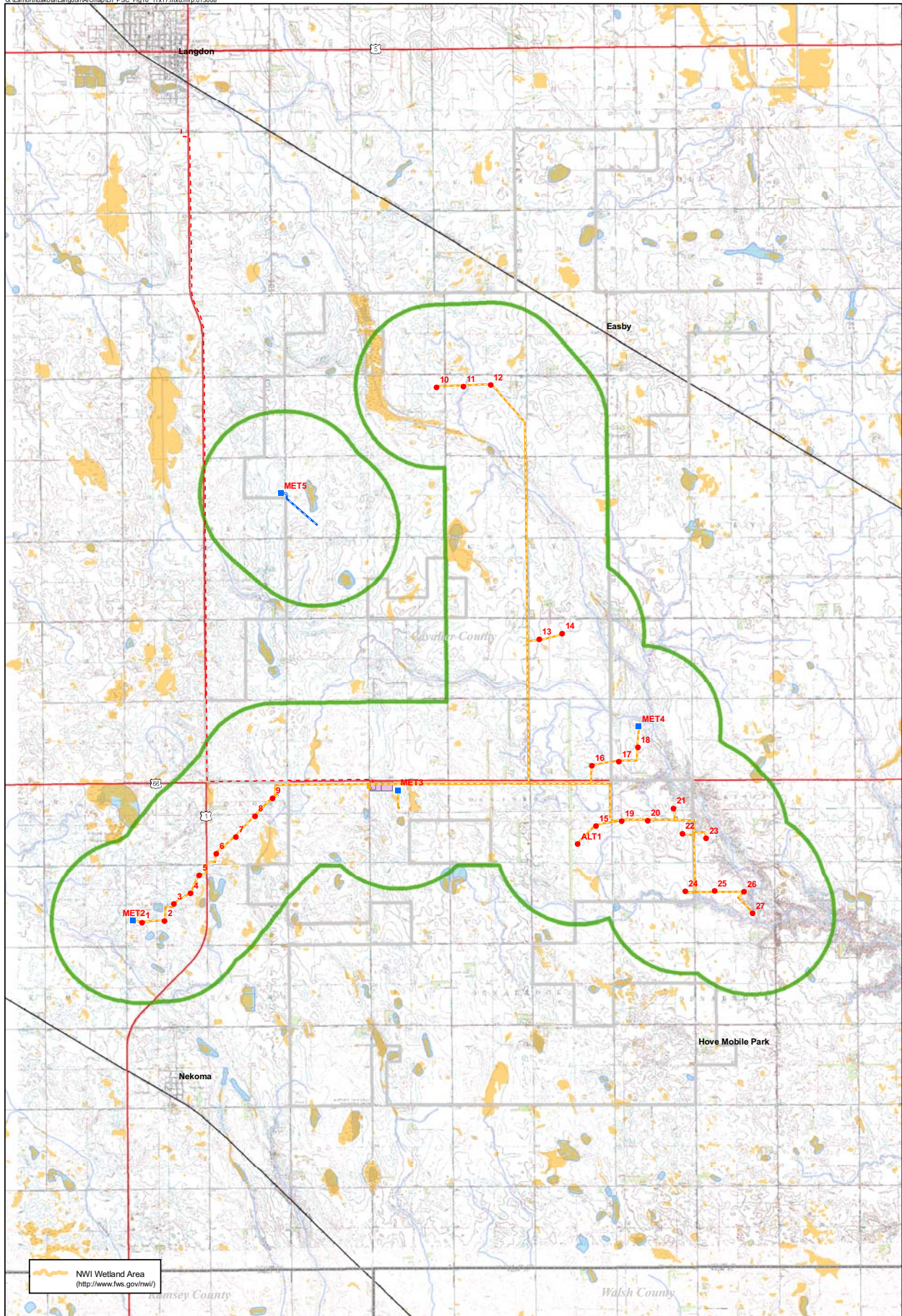
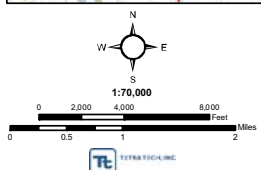


Figure 15

**State Soils Association Map
 Langdon Wind Energy Center Phase II
 Cavalier County, North Dakota**



NWI Wetland Area
(<http://www.fws.gov/nwi/>)



- PSC Supplemental Application Project Area (based on a 1 mile buffer around facilities)
 - Initial Langdon Wind PSC Application Project Area
 - County Boundary
 - Lake/Pond
 - State Highway
 - Local Road
 - Railroad
 - River
 - Turbine Location
 - Underground Collector
 - Fiberoptic Line
 - Access Road
 - MET Tower Location
- Permitted Under Langdon I:*
- Substation
 - Transmission Line

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Figure 16

**National Wetlands Inventory and Surface Waters Map
Langdon Wind Energy Center Phase II
Cavalier County, North Dakota**

APPENDIX A

**CERTIFICATE FROM THE
NORTH DAKOTA PSC FOR LANGDON I**

**STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION**

**Langdon Wind, LLC
Wind Farm – Cavalier County
Siting Application**

Case No. PU-07-26

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER

May 31, 2007

Appearances

Commissioners Susan E. Wefald and Kevin Cramer.

Brian R. Bjella, Attorney-at-Law, Fleck, Mather & Strutz, Ltd., 400 East Broadway, Suite 600, Bismarck, North Dakota 58501, on behalf of the Applicant, Langdon Wind, LLC.

Annette M. Bendish, Public Utility Analyst, Public Service Commission, State Capitol, Bismarck, North Dakota 58505, on behalf of the Public Service Commission.

Jerry Lein, Public Utility Analyst, Public Service Commission, State Capitol, Bismarck, North Dakota 58505, on behalf of the Public Service Commission.

Allen C. Hoberg, Administrative Law Judge and Director, Office of Administrative Hearings, 1701 North Ninth Street, Bismarck, North Dakota 58501-1882, as Procedural Hearing Officer.

Preliminary Statement

On January 23, 2007, FPL Energy, LLC (FPL) filed a Letter of Intent (LOI) to submit an application for a Certificate of Site Compatibility to develop a wind energy facility, referred to as the Langdon Wind Energy Center in Cavalier County, North Dakota. FPL requested that the Commission shorten the prescribed one-year notice period between when the LOI is filed and when the Certificate of Site Compatibility is filed.

On February 7, 2007, the Commission shortened the one-year notice period to one day.

On March 21, 2007, Langdon Wind, LLC (Langdon Wind) filed an application for a Certificate of Site Compatibility authorizing construction of a 159 megawatt (MW) Langdon Wind Energy Center, consisting of up to 106 wind turbine generators and associated facilities in Cavalier County.

On April 2, 2007, FPL filed a letter with the Commission requesting that this case be transferred to Langdon Wind, a newly formed and wholly-owned subsidiary of FPL. Langdon Wind was registered to do business in the State of North Dakota effective February 1, 2007.

On April 4, 2007, the Commission deemed the application complete and issued a Notice of Filing and Notice of Hearing, scheduling a public hearing to begin May 7, 2007, at 10:00 a.m. CDT in the North Meeting Room in the Cavalier County Courthouse, 901 Third Street, Langdon, North Dakota 58429. The Notice identified the following issues to be considered:

1. Will the location, construction and operation of the proposed facilities produce minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota?
2. Are the proposed facilities compatible with the environmental preservation and the efficient use of resources?
3. Will the proposed facility location minimize adverse human and environmental impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion?

On May 7, 2007, the hearing was held as scheduled. The Commission has since received certain late filed exhibits as ordered at the hearing.

Having allowed all interested persons an opportunity to be heard, and having heard, reviewed, and considered all testimony and evidence presented, the Commission makes the following:

Findings of Fact

1. Langdon Wind proposes to construct and operate a wind energy facility known as the Langdon Wind Energy Center in Cavalier County, North Dakota, with a project area bordering approximately one-half mile southeast of the City of Langdon. The proposed capacity of the wind energy facility is 159 megawatts, comprised of up to 106 turbines.
2. FPL and its subsidiary companies have developed renewable energy electric generation projects throughout the United States, and collectively own and operate over 4,000 MW of renewable energy generation capacity including 162 MW in North Dakota Edgeley/Kulm, Wilton, and Oliver Wind Projects.
3. Construction of the Langdon Wind Energy Center is expected to take approximately seven months, at an estimated cost of \$250 million.

4. North Dakota Century Code § 49-22-16(3) provides that an applicant for a certificate of site compatibility from the Commission shall obtain all permits that may be required to construct and operate the energy conversion facility. Late filed Exhibit No. 1 is a list of all the permits or approvals that must be obtained for the Langdon Wind Energy Center, and the status of each of those permits or approvals.

5. The project site is approximately 30,400 acres (47.5 square miles). The wind turbines will be placed throughout the project site. However, the approximate area of direct land use for the turbines and associated facilities will be about 120 acres.

6. Associated facilities to be constructed within the project area include the project collection substation, access roads, an operations and maintenance building, along with underground or overhead collection and feeder lines.

7. The project will have a name plate (gross) capacity of up to 159 MW. Assuming net capacity factors of between 40 and 45 percent, the projected average annual energy output is estimated between 460,000 and 630,000 MW hours.

8. Langdon Wind plans to use General Electric 1.5 MW turbines. These are utility-grade wind turbines and have a nominal name plate rating of 1,500 kW. Each turbine will have an 80 meter (262 feet) hub height and a rotor diameter of 77 meters (253 feet). The 1.5 MW turbine begins operation at wind speeds of 3.5 meters per second (7.8 miles per hour) and reaches its rated capacity of 1.5 MW at a wind speed of 14.5 meters per second (32.4 miles per hour).

9. Each turbine is designed to operate at wind speeds of up to 25 meters per second (56 miles per hour), and can withstand sustained wind speeds of over 45 meters per second (100 miles per hour).

10. Each tower is secured by a concrete foundation. Turbine lighting is limited to warning lights required by the Federal Aviation Administration. A control panel inside the base of each turbine tower houses communication and electronic circuitry. Each turbine is equipped with a wind speed and direction sensor that communicates with the turbine's control system to signal when sufficient winds are present for operation. Electricity generated by each turbine is brought to a pad-mounted transformer where the voltage is stepped up to power collection line voltage of 34.5 kV. This electricity is collected by sets of underground or overhead power collection lines.

11. A feeder system delivers the electricity to the project collection substation. At the project collection substation the power will be transformed to 115 kV for transmission to the regional electric transmission grid.

12. The electricity to be produced from the Langdon Wind Energy Center will be purchased by Minnkota Power Cooperative and Otter Tail Power Company. The generated electricity will be delivered to the regional grid at Minnkota Power's existing Langdon substation.

13. Otter Tail Power Company has an option to install wind turbines at the Langdon Wind Energy Center. As of the date of the hearing, Otter Tail Power Company had not exercised this option.

14. Wind data was provided by an existing meteorological tower located near the project site installed by the Cavalier County Jobs Development Authority. In addition, Langdon Wind installed two 50-meter meteorological towers in May, 2006, within and adjacent to the site. This data, along with the May 2004, Department of Energy wind map for the State of North Dakota indicated that wind resources within the project vicinity are Class IV winds or greater. Class IV winds have an average annual wind speed of 13 miles per hours. The data from the meteorological tower and the DOE wind map indicated that this is an ideal site for a wind farm.

15. Langdon Wind will construct the Langdon Wind Energy Center in compliance with the National Electric Safety Code.

17. Langdon Wind contemplates commencing construction in June 2007. Construction is expected to take approximately seven months to complete. Langdon Wind anticipates testing and operation to begin in December 2007, and also anticipates beginning commercial production in December 2007.

18. Langdon Wind has obtained land options to construct an approximate 159 MW project and is in the process of converting those options to easements. Land rights to be acquired include wind easements, buffer easements, access roads, underground collection and feeder line easements, and purchase of the land for the operation and maintenance building. The area of direct land use for the project facilities is approximately 120 acres.

19. Safety factors will be incorporated into the wind turbines. Each will be equipped with a Supervisory Control and Data Acquisitions (SCADA) communication technology to control and monitor the turbine. In addition, each turbine is also equipped with a lightening protection system and is grounded and shielded to protect against lightening.

20. North Dakota Administrative Code Chapter 69-06-08, sets forth certain criteria to guide the Commission in evaluating the suitability of granting an application for the certificate of site compatibility. The criteria set forth in North Dakota Administrative Code § 69-06-08-01, are classified as Exclusion Areas, Avoidance Areas, Selection Criteria and Policy Criteria. With the exception of prime and unique farm land, an energy conversion facility must not be sited within an Exclusion Area. The exception for prime and unique farm land is if the Commission finds that the prime farm and unique farm land that will be removed from use for the life of the facility is of such small acreage as to be of negligible impact on agricultural production, then such exclusion shall not apply. An energy conversion facility must not be sited within an Avoidance Area unless the applicant shows that under the circumstances there is no reasonable alternative. In determining whether an Avoidance Area should be designated for a

facility, the Commission may consider, among other things, the proposed management of adverse impacts; the orderly siting of facilities; system reliability and integrity; the efficient use of resources; and alternative sites. In accordance with the Commission's Selection Criteria, an energy conversion facility shall be approved if it is demonstrated that no significant adverse impacts will result from the location, construction, and operation of the facility. In accordance with the Commission's Policy Criteria, preference may be given to an applicant demonstrating certain benefits of the energy conversion facility.

21. The Commission finds that the unique and prime farm land to be disturbed by this energy conversion facility is of such small acreage as to be of negligible impact on agriculture production.

22. A rare plant (*Carex backii*) is known to occur near the project area. This plant is a wetland species and will be avoided by Langdon Wind. Thus, there is no impact to this rare plant.

23. The only Avoidance Area identified within the project area are woodlands and wetlands. Langdon Wind does not expect to impact any woodlands in the construction of the project facilities. Langdon Wind completed a preconstruction inventory of wetlands in the vicinity of project facilities. The total impacts to wetlands will be less than 0.05 of an acre. Construction of the Langdon Wind project will be covered by a US Army Corps of Engineers Nationwide Permit (NWP).

24. With respect to historical resources which are not designated as Exclusion Areas, Langdon Wind has been in consultation with the North Dakota State Historic Preservation Office (SHPO). A Class I survey, including a search of SHPO site and manuscript files, was completed. In addition, pursuant to agreement with SHPO, a Class II pedestrian survey of a 200 foot wide corridor along the proposed collection lines and between the proposed turbine locations and any other linear portions of the project has also been completed by Metcalf Archeological Consultants, Inc. Two cultural resources, being a railroad and a prehistoric isolated find are within the project area. The railroad will not be impacted by the project. The isolated find consisting of two pieces of flaking debris and a biface fragment were found in a plowed field. This site is recommended as not significant or eligible for the National Register of Historic Places. As a result, the archeological consultant has recommended a finding of No Historic Properties Affected for this project. The archeological consultant will file its report with SHPO. Documentation indicating SHPO concurrence with the finding of the archeological consultant will be filed with the Commission.

25. Langdon Wind agreed to a buffer of 1100 feet from a waterfowl production area managed by the US Fish and Wildlife Service located within the project area. As demonstrated by late Filed Exhibit 2, the US Fish and Wildlife Service has concurred with this buffer distance.

26. Langdon Wind will implement its Wildlife Response Reporting System when turbine construction is completed. The reporting system includes protocols from field technicians during routine maintenance and operations to report and document any avian impacts.

27. Langdon Wind will maintain ground water protection and soil conservation practices to protect topsoil and adjacent resources and to minimize soil erosion during construction and operation of the project. Best management practices for erosion and sediment control will be installed to minimize erosion during and after construction.

28. Langdon Wind submitted substantial evidence to demonstrate that the proposed energy conversion facility would not have any significant impact on the Selection Criteria set forth in North Dakota Administrative Code § 69-06-08-01(3).

29. Langdon Wind submitted substantial evidence to demonstrate its commitment to maximize the benefits of the proposed energy conversion facility as far as is possible so as to meet the Policy Criteria set forth in North Dakota Administrative Code § 69-06-08-01(4).

30. The proposed project is not expected to have any significant adverse economic or social consequences. No significant adverse impact is foreseen on the ability of the affected area to provide community services, such as housing, health care, schools, police and fire protection, water and sewer, solid waste management, transportation, or traffic safety. The proposed project is expected to be of economic benefit to the affected area.

31. No turbines will be placed within 1400 feet of an occupied residence. As a result, average noise levels at such residences will not exceed the generally accepted 50 dB standard.

32. No impacts are expected to animal health or safety, other than the potential for small numbers of avian species and bat species collisions with turbines. Based upon a preliminary study prepared by Langdon Wind's environmental consultant, the impact is expected to be minimal. Langdon Wind will file its final avian study report with the Commission.

33. Langdon Wind has proposed setbacks of 420 feet from existing transmission lines, roads, and railroads.

34. North Dakota Century Code section 49-22-16(3) provides that no energy conversion facility site shall be designated that violates any county or city land use, zoning, or building rules, regulations or ordinances. Langdon Wind has obtained a conditional use permit from the Cavalier County Commission, granting zoning approval for the Langdon Wind Energy Center.

35. Langdon Wind has consulted with numerous other local, state, and federal agencies which are listed on pages 61-64 of its Application. Two agencies providing significant input are the North Dakota Game and Fish Department and the US Fish and Wildlife Service. The North Dakota Game and Fish Department indicated that its primary concern is with the disturbance of native prairie and avian monitoring. Native prairie will not be impacted by the wind farm project. In addition, as previously noted, Langdon Wind is conducting an avian survey. Concerns of the United States Fish and Wildlife Service focused on migratory birds, wetlands, native grasslands, woodland resources, and threatened and endangered species. No significant impacts to any of these resources are anticipated. Neither agency has objected to construction of the project.

36. Langdon Wind reports a contractual obligation to landowners to remove the wind facilities, including foundations to a depth of three feet, when the wind easement expires. Langdon Wind reserves the right to explore alternatives regarding project decommissioning at the end of the project term. Retrofitting the turbines and power systems with upgrades based on new technology may allow the wind farm to produce efficiently and successfully for many more years.

From the foregoing Findings of Fact, the Commission now makes its:

Conclusions of Law

1. The Commission has jurisdiction over this proceeding under North Dakota Century Code Chapter 49-22.
2. The energy conversion facility proposed by Langdon Wind is an energy conversion facility as defined in North Dakota Century Code § 49-22-03(11).
3. The proposed project is of such design, location and purpose that they will produce minimal adverse effects, as defined in North Dakota Century Code § 49-22-05.2.
4. The application submitted by Langdon Wind meets the site evaluation criteria required by North Dakota Century Code Chapter 49-22.
5. The location, construction, and operation of the proposed energy conversion facility will produce only minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota.
6. The proposed energy conversion facility is compatible with environmental preservation and the efficient use of resources.
7. The proposed energy conversion facility will minimize adverse human and environmental impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion.

8. The Commission has jurisdiction to ensure compliance with National Electric Safety Code standards in the construction and operation of the proposed energy conversion facility.

From the foregoing Findings of Fact and Conclusions of Law, the Commission now makes its:

Order

The Commission orders:

1. Certificate of Site Compatibility No. 6 for an energy conversion facility is issued to Langdon Wind for the construction, operation, and maintenance of a wind energy facility known as the Langdon Wind Energy Center.
2. The site described in the application borders approximately one-half mile southeast of the City of Langdon, North Dakota, and is designated as the site for construction of the energy conversion facility.
3. Within the permitted area, Langdon Wind is authorized to site and construct up to 159 MW of wind turbines in proposed and alternate locations along with electrical collection and communication lines, access roads, an operations and maintenance building, and other associated facilities as identified in the application.
4. Langdon Wind shall comply with all the rules and regulations of all other agencies having jurisdiction over any phase of the proposed project. Prior to commencing construction of any phase of the proposed project, Langdon Wind shall obtain all other necessary approvals and permits for construction of such phase, and provide copies to the Commission prior to construction of each such phase.
5. Langdon Wind shall conduct a pre-construction conference prior to the commencement of any construction, and must include a Langdon Wind representative, its construction supervisor, and a representative of the Commission staff to ensure that Langdon Wind fully understands the conditions set forth in this Order.
6. Langdon Wind shall inform the Commission of its intent to start construction on the energy conversion facility prior to the commencement of construction, and while construction is underway, Langdon Wind shall keep the Commission updated of construction activities on a weekly basis.
7. Langdon Wind shall construct and operate the energy conversion facility in the manner described in its application and at the hearing, and in accordance with all applicable safety requirements.
8. Langdon Wind shall construct the energy conversion facility in compliance with the National Electric Safety Code.

9. Langdon Wind shall promptly report to the Commission the presence in the permit area of any critical habitat of threatened or endangered species, or of bald or golden eagles that Langdon Wind becomes aware of and that were not previously reported to the Commission.

10. If any cultural resource, paleontological resource, archeological site, historical resource, or gravesite is discovered during construction of the facility, earth disturbing activities in the immediate vicinity of the discovery must be halted. The resource must be marked, preserved, and protected from any further disturbance until a professional examination can be made in consultation with the ND SHPO. A report of such examination must be filed with the Commission, and clearance to proceed must be given by the SHPO and the Commission.

11. All pre-existing roads and lanes used during construction must be restored to a condition that will accommodate their previous use, and areas used as temporary roads during construction must be restored to their original condition.

12. Construction must be suspended when weather conditions are such that construction activities will cause irreparable damage, unless adequate protection measures approved by the Commission are taken.

13. Reclamation, fertilization, and reseeding is to be done by Langdon Wind according to the Natural Resource Conservation Service recommendations for CRP, native prairie, and other non-cropped lands unless otherwise specified by the landowner and approved by the Commission.

14. Langdon Wind's obligation for reclamation and maintenance of the site shall continue throughout the life of the energy conversion facility.

15. When the energy conversion facility is retired, structures and other facilities will be removed to a depth of at least three feet, or in accordance with applicable rules, and the area restored to as near as original condition as is practicable.

16. Trees and other woody vegetation must be replaced with saplings that are two or more years old at a rate of two for every one removed. Landowners shall be given the option of having replacement trees/shrubs planted on the landowners' property or waiving the requirement in writing, and allowing Langdon Wind to plant replacement trees/shrubs elsewhere. Langdon Wind shall inspect any tree replacements once a year for three years and send a report on or before October 1 of each year to the Commission documenting work completion and condition of woodlands planting. The Commission may order additional plantings if survival rates are less than 75%.

17. Langdon Wind shall repair or replace all fences and gates removed or damaged during all phases of construction and operation of the proposed energy conversion facility.

18. Langdon Wind shall repair or replace all drainage tile, broken or damaged, during all phases of construction and operation of the proposed energy conversion facility.
19. Staging areas or equipment shall not be located on cultivated land unless otherwise negotiated with landowners.
20. Langdon Wind shall remove all waste that is a product of construction and operation, restoration and maintenance of the site, and properly dispose of it on a regular basis.
21. Langdon Wind, shall, as soon as practicable, upon the completion of the construction of each wind turbine, restore the area affected by the activities to as near as is practicable to the condition as it existed prior to the beginning of construction.
22. Langdon Wind shall provide, if requested, educational material for landowners within the site boundaries about the proposed energy conversion facility, and any restriction or possible danger concerning the proposed energy conversion facility.
23. Langdon Wind shall provide any necessary safety measures for traffic control or to restrict public access to the energy conversion facility.
24. Langdon Wind shall advise the Commission of any extraordinary events which take place at the site of the energy conversion facility, such as tower collapse, turbine failure, injured worker or private individual, the death of any threatened or endangered species or the discovery of a large number of dead birds or bats on the site within five business days of such event.
25. Langdon Wind shall implement a procedure for how complaints concerning the proposed energy conversion facility will be handled by Langdon Wind.
26. All underground electric line crossings of graded roads must be bored unless the responsible governing agency permits Langdon Wind to open cut the road.
27. Where available, at least 12 inches of topsoil over and along open cut areas, roadways, tower locations, and locations of associated facilities must be stripped and segregated from the subsoil and be replaced only after the subsoil is replaced.
28. Langdon Wind shall bury all underground collection and feeder lines to a depth of at least 48 inches to the top of the lines.
29. Langdon Wind shall work with landowners and residents in the area to mitigate any increase in television and residential radio interference that results from the construction of the energy conversion facility.

30. Langdon Wind shall provide the Commission with engineering design drawings showing surveyed structure and collection substation locations prior to construction and then shall obtain approval from the Commission or from Commission staff prior to any changes in those surveyed locations.

31. Langdon Wind shall provide the Commission with as-built drawings within 90 days after construction is complete.

32. The Certificate of Site Compatibility is subject to suspension or revocation and may, in an appropriate and proper case, be suspended or revoked for failure to comply with the Commission's order, the conditions and criteria of the certificate or subsequent modification, or failure to comply with the applicable statutes, rules, regulations, standards, and permits of other state or federal agencies.

33. Langdon Wind shall maintain records which will demonstrate that it has complied with the requirements of this order and the Certificate of Site Compatibility, and that it will preserve these records for Commission inspection at any reasonable time upon reasonable notice.

34. House Bill No. 1317 as passed by the 2007 North Dakota legislature provides that the Commission has the power to establish rules for decommissioning of wind energy conversion facilities. Langdon Wind is required to comply with all applicable rules adopted by the Commission pursuant to such legislation.

35. The authorizations granted by the Certificate of Site Compatibility for this energy conversion facility are subject to modification by order of the Commission if deemed necessary to further protect the public or the environment.

PUBLIC SERVICE COMMISSION

		
Tony Clark Commissioner	Susan E. Wefald President	Kevin Cramer Commissioner

**PUBLIC SERVICE COMMISSION
STATE OF NORTH DAKOTA**

Certificate of Site Compatibility

Certificate Number 6

This is to certify that the Commission has designated an energy conversion site for FPL Energy, LLC, which is described as follows:

**Township 161N Range 59W
Sections 26, 27, 28, 34**

**Township 160N Range 59W
Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 16, 17, 18, 19, 20, 21, 28, 29, 30,
31, 32, 33**

**Township 160N Range 60W
Sections 1, 11, 12, 13, 14, 24, 25, 26, 35, 36**

**Township 159N Range 59W
Sections 3, 4, 5, 6, 7, 8, 9, 10, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23**

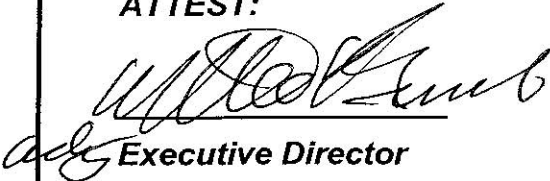
**Township 159N Range 60W
Sections 1, 11, 12, 13, 24**

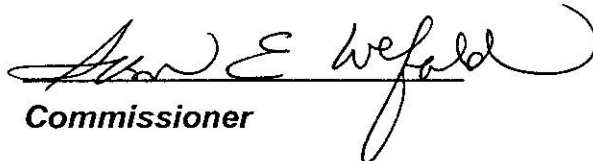
The facility may be sited in this designated location in compliance with the energy conversion facility siting criteria. This certificate is issued in accordance with the Findings of Fact, Conclusions of Law and Order of this Commission dated May 31, 2007, in Case No. PU-07-26 and is subject to the conditions and limitations noted in the Order.

Bismarck, North Dakota, May 31, 2007.

ATTEST:

PUBLIC SERVICE COMMISSION


Executive Director


Commissioner

North Dakota Public Service Commission
May 31, 2007

Langdon Wind, LLC
Wind Farm – Cavalier County
Siting Application

Case No. PU-07-26

Summary Sheet

Company:

Langdon Wind LLC., a subsidiary of FPL Energy, LLC of Juno Beach, Florida, has filed an application for a certificate of site compatibility to construct a proposed Langdon Wind Energy Center in Cavalier County, North Dakota.

Project:

The proposed project would be constructed over an area of approximately 47.5 square miles located southeast of Langdon, North Dakota. The project would consist of up to 106 wind turbine generators, one or more permanent meteorological towers, access roads, underground and overhead collection lines, a substation, and operations and maintenance facilities. The proposed project would contribute up to 159 MW of renewable energy generation to the power grid. A project map is included on the reverse side of this summary sheet.

Cost:

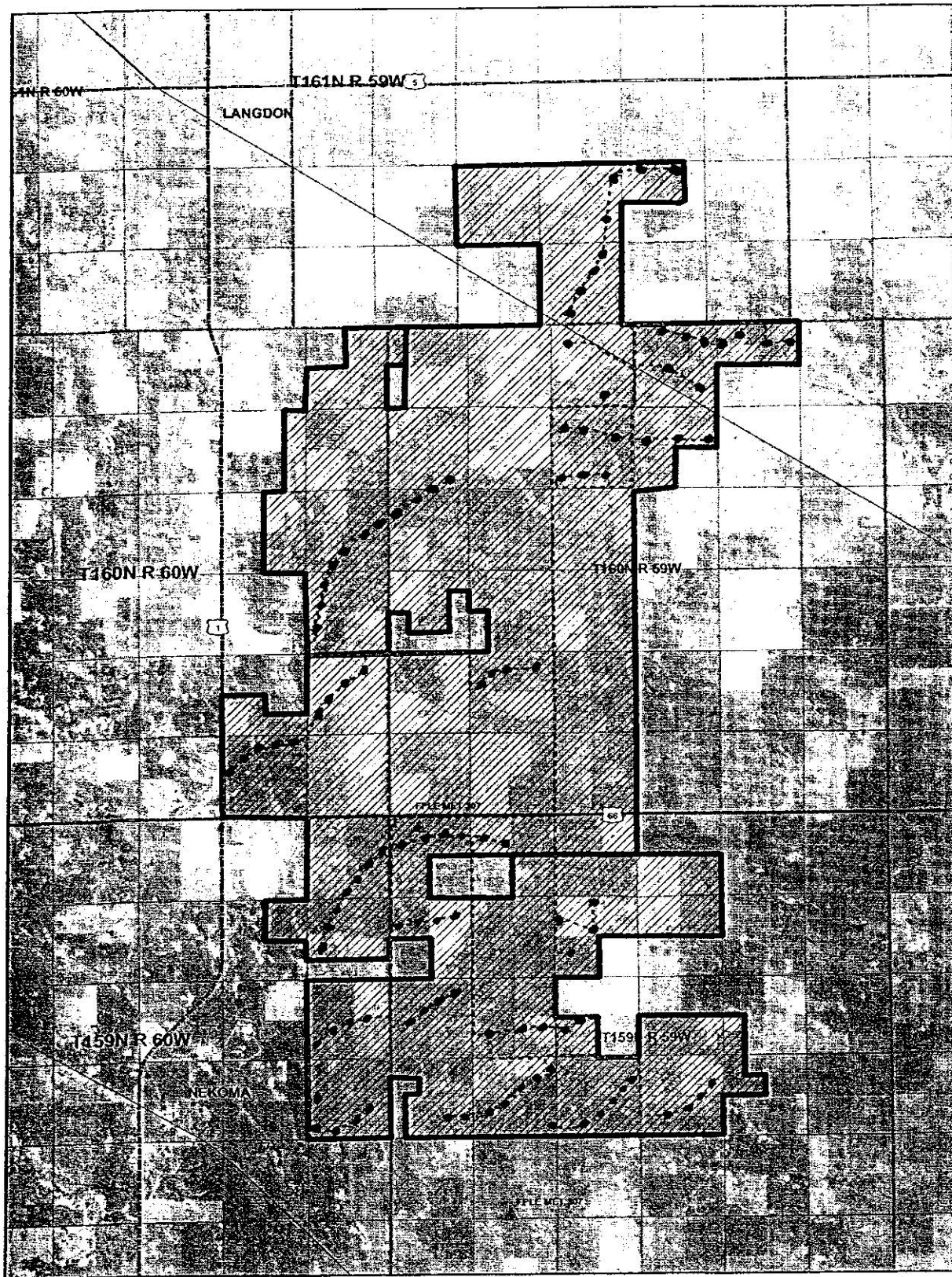
Langdon Wind estimates the cost of constructing the proposed wind farm to be approximately \$250 Million.

Schedule:

Langdon Wind hopes to begin construction in June, 2007 and anticipates completing construction within seven months to begin commercial operation by December 31, 2007.

Commission Action:

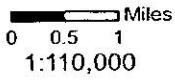
A Public Hearing was held in Langdon on May 7, 2007. Today the Commission will vote whether to issue a Certificate of Site Compatibility authorizing construction of the Langdon Wind Energy Center.



Legend

- Proposed Turbine Locations
- ▲ MET (Meteorological Tower)
- ▨ Approximate Project Area
- Public Land Survey System (PLSS) Township Section Range
- Ponds/Lakes
- Collection Lines
- == Highways
- County Roads
- Railroads
- Streams/Rivers

Tc TETRA TECH



Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota

APPROVED

DATE: 5-31-07
SPB

MOTION

May 31, 2007

**Langdon Wind, LLC
Wind Farm – Cavalier County
Siting Application**

Case No. PU-07-26

I move the Commission adopt the Findings of Fact, Conclusions of Law and Order issuing a certificate of site compatibility to Langdon Wind, LLC for its proposed 160 MW Langdon Wind Energy Center in Cavalier County, North Dakota, Case No. PU-07-26.

JRL

APPENDIX B

LANGDON WIND
A Commitment to the Future

A Commitment to the Future

Children are our future. The faces of our own employees' boys and girls are symbolic of FPL Group's commitment to sustainability as a framework for leading and managing the company's long-term success.

- A Message from the Chairman
- Profile
- Economic Accountability
- Environmental Stewardship
- Social Responsibilities

At FPL Group, one of the ways we've chosen to manage and measure our progress is by employing the concept of "sustainability." At its core, sustainability requires demonstrated attention to, and excellence in, three key areas: economic accountability, environmental stewardship and social responsibility. Following is a review of many of our strengths, activities and strategies, using the three elements of this sustainability concept as a framework.

We welcome your comments on this report and your thoughts on how we can continue our commitment to excellence in all aspects of our operation. Please e-mail your feedback.

A Message from the Chairman

The essence of a company's success is to achieve and sustain excellence in all aspects of its business. This is frequently referred to in today's corporate world as "sustainability," and it is a concept that we have strongly embraced at FPL Group for some time.

At its core, sustainability focuses on three key areas – the so-called "triple bottom line" that is the framework for reporting our performance against economic accountability, environmental stewardship and social responsibility.

More broadly, sustainability reflects our company's purpose, values and long-term approach to business. It requires us to take into account in our decision-making processes the needs of all our stakeholders – shareholders, customers, employees, business partners, governments, local communities and the public.

Under the umbrella of sustainability, we've shown that strong commitments to the environment and to the communities we serve are consistent with achieving outstanding operating and financial results.

By carefully balancing economic, environmental and social factors – and integrating them into our strategies and operations – we are working to make FPL Group a stronger, better and more responsible company.

Lew Hay, III

Chairman, President and Chief Executive Officer

Profile

FPL Group, Inc. is one of the nation's largest providers of electricity-related services and is nationally known as a high-quality, efficient and customer-driven organization. Its principal subsidiary, Florida Power & Light Company, serves more than 8 million people along the eastern seaboard and southern portion of Florida. FPL Energy, LLC, FPL Group's wholesale generation subsidiary, is a leader in producing electricity from clean and renewable fuels. Together, FPL's and FPL Energy's generating assets represent more than 30,000 megawatts of capacity. FPL FiberNet provides wholesale fiber-optic services and fiber-optic cable to Internet service providers and telecommunications companies in Florida.

Economic Accountability

FPL Group is highly regarded for its solid financial position, which is supported by a strong balance sheet, good cash flow, a balanced portfolio, excellent credit ratings and a disciplined approach to deploying capital.

Our financial strength sets us apart from many of our peers and provides a competitive advantage. With regard to the company's economic accountability, two characteristics stand out as integral to our success.

First, we have a strong commitment to integrity, personal accountability and openness, and this is supported by our outstanding record in corporate governance.

Second, there is throughout our company a deeply ingrained drive for continuous improvement and operational excellence.

**FPL Group
Continuing to Perform Well**

Today's dynamic electric industry is one of ongoing challenge and opportunity. Changes in customer preferences, regulation, industry structure and technology – to name just a few areas where transformation is occurring – call for innovative strategies, teamwork and sound execution.

Amidst this dynamic market environment, FPL Group recorded another year of outstanding performance.

- FPL Group generated an impressive 18.7 percent total shareholder return in 2004. In addition, we have outperformed our peers and industry over the last three-year and five-year periods.
- Net income, using generally accepted accounting principles, was \$87 million or \$.45*per share in 2004, compared with \$90 million or \$.50*per share in 2003. Notably, we estimate that the hurricanes had a negative 7 cents*per share impact on earnings.
- FPL Group's adjusted net income, which excludes the net unrealized mark-to-market effect associated with non-qualifying hedges and, in 2003, the cumulative effect of a change in accounting principle at FPL Energy (FIN 46), was \$90 million or \$.46*per share in 2004, compared with \$71 million or \$.45*per share in 2003. (See Financial Highlights for a reconciliation of net income to adjusted earnings and earnings per share to adjusted earnings per share).
- As anticipated, 2004 saw our free cash flow profile shift to positive. Considering the negative impact of the hurricanes of 2004, the company considers this a great achievement. Moreover, this trend was an important factor in the Board's decision to make a mid-year adjustment to our dividend. Combined with the February 2004 increase, the July 2004 increase provided a 13 percent increase in the quarterly dividend. Our dividend payout ratio and yield are now more in line with some of our peers while still providing us financial flexibility to invest in profitable growth opportunities.

Business Review and 2004 Performance

Both of our businesses have unique strengths and had outstanding years in 2004.

- Florida Power & Light Company is one of America's largest and best performing electric companies. With more than 4.2 million customers, FPL continued during 2004 to benefit from rates of growth in our customer base that are among the highest of any large electric company. Beyond restoring electric service and rebuilding portions of our electric system in the wake of Hurricanes Charley, Frances and Ivanne, FPL in 2004 continued the historical outstanding operational and cost performance that places us among the best in our industry.
- FPL Energy is a disciplined wholesale generator and a leading clean energy provider. During 2004, we continued to build on our strength as a low-cost provider, maintained operational excellence, optimized our asset portfolio, leveraged our position as the U.S. market leader by a large margin in wind power generation and continued carefully managing all forms of risk. We continued our pattern of strong earnings (despite a major contract restructuring described in more detail in the FPL Energy section), and over the last five years we have achieved average annual growth in adjusted earnings per share at FPL Energy of approximately 23 percent (see Financial and Operating Statistics for reconciliation of earnings per share to adjusted earnings per share).

Key Corporate Attributes and 2005 Outlook

A number of key attributes continue to form the cornerstones of FPL Group's success and provide reason for continued confidence in our prospects for 2005 and beyond.

- We continue to maintain financial strength, flexibility and discipline –hallmarks of this company for many years. Our credit ratings are among the best in our industry when compared to other large electric power companies.
- We have long been committed to integrity and accountability in all aspects of our business. Most recently, for example, in compliance with the Sarbanes-Oxley Act we have undergone a comprehensive assessment and testing of our internal controls to ensure their effectiveness. Taken together, in fact, our corporate governance practices continue to be rated among the best in industry by third-party observers.
- We have a demonstrated track record of strong performance. Our earnings growth has been steady, and our operating performance on a variety of metrics is among the best in our industry.
- We are a clean energy company and are committed to continued success in managing our operations with sensitivity to the environment. This could be a major competitive advantage for us in the future, especially if new environmental laws are enacted that recognize the investments FPL Group has already made in clean and renewable energy relative to many of our peers.
- Going forward, we have attractive growth prospects. We expect continued growth in customers and usage at FPL, in our U.S. market-leading wind generation business at FPL Energy and in other areas served by FPL Energy as certain wholesale power markets continue to recover.
- All this adds up to projected earnings per share in 2005, after the effect of the two-for-one stock split, of \$3.50 to \$3.60 (see **also 2005 Projected Earnings per Share Contribution**).

Note: Per share information reflects the effect of the two-for-one stock split, effective March 15, 2005, of FPL Group's common stock.

Financial Highlights

Florida Power & Light Serving a Fast-growing State

During an extraordinary year, Florida Power & Light Company demonstrated once again why it is so widely regarded as one of the nation's outstanding electric companies.

Despite an unprecedented series of devastating hurricanes that swept through its service area (see Restoring Power, Restoring Lives), FPL continued to achieve the high levels of performance that are a hallmark of the organization. At the same time, the ongoing customer growth that has set the utility apart from virtually all of its peers –and made it one of America's largest providers of electricity –continued to accelerate.

FPL added an average of 107,000 new customer accounts in 2004, the most since the late 1980s and a 2.6 percent increase over the previous year. Although the hurricanes clearly had a dampening impact on customer growth during the later part of the year, the company is optimistic that the effect will be moderate and not affect long-term growth. Florida's population continues to increase at a greater rate than any other large state.

In addition, Florida created the most jobs in the nation in 2004. Although the state's population is 6 percent of the nation's population, it created 12 percent of the new jobs during the year.

Since the beginning of 2002, the year in which FPL's current rate agreement went into effect, FPL has increased its electric generating capacity by more than 2,300 megawatts, at a cost of over \$.2 billion, and invested more than \$.9 billion in power delivery facilities. This has allowed the company to meet the energy demands of nearly 300,000 additional customer accounts while maintaining an adequate reserve margin for all FPL customers.

In 2004, expansion projects at FPL's Martin and Manatee power plants continued on track for completion later this year, adding 1,900 megawatts of generating capacity, or enough power to serve about 400,000 customers.

The company also received approvals to build a 1,150-megawatt natural gas-fired power unit at its existing Turkey Point site south of Miami. This will help FPL meet the rapidly increasing demand for electricity in Southeast Florida. Construction began in March 2005 with a projected 2007 completion. Beyond that date, growth forecasts indicate that FPL will need to add the equivalent of three 1,150-megawatt power plants over the next five years.

Growth, Higher Costs Drive FPL to Seek Increase in Base Rates

Continued and long-term growth in FPL's service area will require not only extensive investments in new generation, but in the utility's power delivery system as well. Siting new plants and gaining approvals for additional transmission routes, particularly in well-established and highly populated areas, will present challenges.

Generating resources are currently being added at three times the rate of previous years, and capital expenditures for power delivery are expected to average approximately \$00 million a year going forward. In addition, although its costs are significantly below the industry average, the company is facing higher operating costs and making significant investments to maintain its nuclear units in top shape.

FPL's revenue sharing agreement with the Florida Public Service Commission ends Dec. 31, 2005. In January 2005, the company notified the Commission that it intends to seek an increase in its retail base rates and initiate what would be a negotiated settlement—its first full base rate case since 1984. During the rate case, the PSC staff and commissioners will examine in depth FPL's operations and revenue needs. A final

decision on FPL's request for a base rate increase is expected in November 2005. If approved, it would be the first increase in FPL's base rates in more than 20 years.

The current residential base rate is 16 percent lower than when base rates were last increased in 1985. Since that time, FPL has added approximately 1.6 million customers and spent more than \$7 billion in capital investments. Since 1999, base rates have been reduced twice, providing savings to customers totaling nearly \$ billion, including revenue sharing refunds. The reductions were possible due largely to FPL's increased productivity and more efficient operations, which has allowed the utility to establish itself as a low-cost provider of high quality electric service.

Represents compound annual growth rate through periods shown. Industry source: Energy Information Administration

FPL's successful cost-management efforts have enabled it to maintain costs well below the industry average. In 2004, even as expenses continued to rise in such areas as insurance and security requirements, the company's operating and maintenance (O&M) costs of 1.24 cents per retail kilowatt-hour were slightly lower than the previous year and were approximately 31 percent below the industry average. Over the next several years, however, FPL expects increased upward pressures on O&M expenses, along with smaller incremental gains in productivity, while customer growth and energy usage continue to rise.

As a result, after many years, FPL believes an increase in retail base rates now is necessary to ensure that it can continue to provide reliable, cost-effective electric service at levels its customers have come to expect and that are consistent with the company's past record of performance.

FPL Energy A Leading Clean Energy Provider

FPL Energy, the wholesale generating subsidiary of FPL Group with a growing presence in 24 states and more than 11,500 megawatts of generation assets in operation, experienced an exceptional year in 2004. By continuing to maximize the value of existing assets and capitalizing on its U.S. market-leading wind portfolio, the company further strengthened its position as one of the nation's leading low-cost wholesale energy providers.

Despite less than favorable conditions in the wholesale energy sector, FPL Energy has achieved average annual growth in its contribution to adjusted earnings per share of approximately 23 percent over the past five years. (See Financial and Operating Statistics for reconciliation of earnings per share to adjusted earnings per share.) During this time, the company has successfully added to its asset base and expanded its capabilities, while at the same time effectively managing risk.

In 2004, FPL Energy benefited from the integration of approximately 1,000 megawatts of wind projects placed into service in 2003. Other factors contributing to the company's performance included improved wholesale market conditions in New England and the absence of an outage at Seabrook. Losses from restructuring activities and higher interest expense negatively impacted FPL Energy's results.

Because of the above-listed factors, FPL Energy was able to take important strategic actions in 2004 that, while collectively having a negative impact on short-term financial results, will benefit the company and FPL Group shareholders in the longer term. As a result, the company's reported financial results obscured to some degree what was perhaps its best year ever. In addition, FPL Energy's performance was stronger than may be apparent because it was achieved despite a year of below-average wind resources, which negatively impacts the performance of its wind fleet.

Foremost among the items affecting FPL Energy's reported earnings was the restructuring of a steam contract related to the Marcus Hook power facility in Pennsylvania, which resulted in a charge against earnings of \$8 million after tax. The transaction is expected to improve both cash flow and net income going forward. The 744-megawatt plant, which entered service at the end of 2004, was the company's last fossil-fueled merchant facility under construction.

FPL Energy has a proven record of accomplishment in contract restructurings and, as market conditions change, it seeks out opportunities to modify or restructure existing power sales or fuel contracts. In 2004, the restructuring of a power and gas contract allowed FPL Energy to reduce operating costs. This is expected to provide the company with significant positive financial benefits for many years to come.

Per share information reflects the effect of the two-for-one stock split, effective March 15, 2005, of FPL Group's common stock. See Financial and Operating Statistics for reconciliation of earnings per share to adjusted earnings per share. Effective portfolio management and a continuous evaluation of assets also are important factors in FPL Energy's success. This was reflected in 2004 with the sale of the company's 50 percent interest in the 566-megawatt Bastrop Energy Center in Texas and a waste wood power facility in Virginia.

FPL Energy further solidified its position as one of America's leading clean energy providers in January 2005 with the purchase of a 45 percent ownership interest in 150 megawatts of solar power generation in California. The acquisition makes FPL Energy the largest generator of solar power in the U.S. with 310 megawatts.

Power Marketing Grows Business

Adding to its outstanding operating performance, FPL Energy continued to expand its capabilities and product offerings to customers in 2004, allowing it to open up new markets and generate new sources of revenue. One of the growth areas for power

marketing is load-following sales, in which FPL Energy is responsible for meeting the hourly variation in energy demands. After developing its load-following capability in the Northeast, FPL Energy applied its load-following expertise to the Texas market in 2004.

FPL Energy also continued to successfully hedge against commodity price fluctuations. The company's objective is to have roughly 75 percent of capacity hedged for the next 12 months. At the end of 2004, approximately 78 percent of FPL Energy's entire portfolio was hedged. More than 85 percent of the company's expected gross margin from its wholesale generation fleet is now protected against fuel and power market volatility.

FPL Energy's keys to success for 2005 and beyond are to continue to grow its wind business and remain a low-cost provider, while maintaining its world-class operational performance. In addition, the company remains focused on further optimizing its merchant portfolio and managing effectively, on a daily basis, the risks in its business.

Financial and Operating Statistics

Financial Statements

Underlying the business operations at FPL Group is a solid financial position. The company maintains a strong balance sheet, good cash flow and a disciplined approach to deploying capital.

Credit Ratings

FPL Group's credit ratings are among the best in its industry when compared to other large electric power companies.

Management's Report on Internal Controls over Financial Reporting

Governance

Our corporate governance practices continue to be rated among the best in the industry by third-party observers:

Institutional Shareholder Services, a leading independent appraiser of corporate governance, ranked FPL Group in the top 20 percent both in our industry and in the S&P 500.

Another rating organization, GovernanceMetrics International, ranked FPL Group well above average in corporate governance with a score of 9.0 out of 10 possible points, again placing us well above average as compared to other U.S. companies and better than most energy producers. Our goal is to raise the bar even further.

- Chairman's Statement
- Principles and Guidelines

- Officers
- Board Structure
- Directors & Officers Stock Ownership

Policies

- Bylaws
- Articles of Incorporation
- Certifications
- Code of Ethics for Senior Executives and Financial Officers
- Code of Business Conduct and Ethics
- Securities Trading by Company Personnel
- Stock Ownership by Officers

Committee Charters

- Audit
- Compensation
- Governance & Nominating
- Finance & Investment

Investors

- Financial News
- Presentations
- Financial Reports
- Quarterly Reports
- SEC Filings
- Dividend History
- Fundamentals
- Event Calendar
- Analyst Coverage
- Printed Materials

Sarbanes-Oxley Act

A major aspect of corporate governance activities involves implementing the Sarbanes-Oxley Act. This legislation is part of the government's response to the scandals and mismanagement uncovered at Enron, World Com and other companies over the past few years.

Although FPL Group voluntarily adhered to the spirit of Sarbanes-Oxley long before it and other new federal policies requiring specific compliance actions went into effect, the company nonetheless took action as required by the new laws.

Under what is known as Section 404 of the Act, we performed a very careful and comprehensive examination of our underlying controls processes and objectives and completed documentation of our processes. This initiative confirmed our belief that we have excellent management controls in place at FPL Group.

Section 302 of Sarbanes-Oxley deals with personal accountability and holds senior officers responsible for the completeness and accuracy of financial information. Since 2002, FPL Group's chairman and the chief financial officer have personally certified the completeness and accuracy of our annual and quarterly reports. Additionally, each of our business unit leaders signs the same certifications.

Commitment to Quality

FPL Group is widely regarded as a high performance organization with a commitment to quality and continuous improvement that is deeply ingrained in our company's culture. As a result, we are among the top performers in key industry metrics.

This is reflected by our superior results in such divergent and critical areas as power plant availability, electricity reliability, operating and maintenance costs, and employee safety.

For example, FPL Group's best practices' approach has led to its industry-leading positions in power plant availability – among the highest in the industry; our fossil-fuel plant availability stood at 93.7 percent in 2004, our wind facilities at more than 97 percent, and our nuclear facilities at 99 percent, well above the industry average – and cost containment – operating and maintenance expenses as measured in dollars per customer remained at 42 percent below the industry average. This expertise is shared among FPL Group facilities in Florida (where they are part of a regulated utility) and facilities operated by FPL Energy in other parts of the country.

In addition, since launching an aggressive program in 1997 to improve electric reliability, FPL has achieved outstanding results. The annual average amount of time customers are without power has been reduced by nearly 50 percent, and the frequency and duration of outages have declined as well. Excluding hurricane-related outages, the average number of minutes that FPL customers were without power during 2004 was about half that of the most recent industry average.

By regularly benchmarking our processes and performances against the best of our peers, we are able to identify opportunities in these and other important areas for additional improvements and to further improve our bottom line.

The company's quality roots date back to the early 1980s and the establishment of quality improvement teams. In the mid-80s, a total quality management system based on the TQM practiced in Japan was implemented company wide. Because of this innovative program, FPL was awarded the prestigious Deming Prize in 1989, the first company outside of Japan ever to be so honored by the Union of Japanese Scientists and Engineers.

Learn more about FPL Group's quality commitment by visiting the topics in the list below.

- Current Quality Practices
- Quality Awards and Recognition
- The James L. Broadhead Award
- Benchmarking Opportunities

Clean energy is a focus of our business strategy. The vast majority of the power we generate is derived from clean and renewable fuels. In fact, we're the world leader in wind power, and we continue to invest in the development of new sources of energy designed to safeguard the environment for years to come.

Environmental Stewardship

We believe that meeting our customers' demand for electricity must go hand-in-hand with preserving, protecting and enhancing the environment.

As a result, our company is committed to complying with the spirit and intent, as well as the letter of all environmental laws, regulations and standards.

We incorporate environmental protection and stewardship as an integral part of the design, construction, operation and maintenance of our facilities. We also conduct periodic self-evaluations and report performance. In addition, we offer a variety of programs that encourage the wise use of energy to minimize the impact on the environment.

Environmental Policies

As part of our environmental policy:

- The Board of Directors reviews company environmental strategies and performance.
- Environmental performance is a key component in our operating divisions' business plans.
- Environmental audits of our facilities and operations are conducted regularly.
- Environmental factors make up a significant portion of our "due diligence" research when considering asset acquisitions.
- Employees are trained in many aspects of environmental awareness and management.
- Employee performance evaluations consider whether environmental targets have been completed successfully.

We continually work to achieve more efficient operations and improved performance with less impact on the environment. This includes managing water wisely as a valued natural resource, seeking ways to improve operations to minimize their impacts on

wildlife near our facilities, and properly disposing of waste and recycling materials required for company operations.

Fuel Mix/Renewable Resources

FPL Group is committed to promoting the generation of clean energy through the use of clean-burning fuels and renewable resources, while helping to minimize fuel costs.

Florida Power & Light One of the Nation's Cleanest Utilities

At FPL, more than half of our electricity comes from nuclear plants free from greenhouse gas emissions and clean-burning natural gas plants, making us one of the cleanest electric utilities in the country.

FPL projects the need for 5,348 megawatts of net new capacity to be added by the end of 2014 to meet the growing power needs of existing customers as well as an average of more than 80,000 projected new customer accounts annually. Within the next seven years, much of this new generation will come from state-of-the-art, combined-cycle technology. Further out, plans call for consideration of other fuel and energy sources and other cost-effective generating technologies to strengthen our fuel diversity.

FPL Energy A Leader in Clean Power

More than 90 percent of the electricity generated by FPL Energy comes from clean-burning natural gas, nuclear power, and renewable sources including wind, hydro and solar. The company further solidified its position as one of America's leading clean energy providers in January of 2005 with the purchase of a 45 percent ownership interest in 150 megawatts of solar power generation in California. The acquisition makes FPL Energy the largest generator of solar power in the country with 310 megawatts.

As the world leader in wind power, FPL Energy owns and operates wind facilities in 15 states with a capacity of nearly 3,000 megawatts of electricity, or about 40 percent of the U.S. wind energy market. At the end of 2004, wind power accounted for nearly one-fourth of FPL Energy's generating capacity.

Since 2000, FPL Energy has expanded its wind market share by adding an annual average of 545 megawatts, and the company is targeting between 250 and 750 megawatts of new wind generation in 2005.

In addition to FPL Energy's wind development activities in 2004, major projects were undertaken to improve the efficiency of the company's wind assets and to optimize their value. In addition to repowering, the projects included using surplus turbines and repositioning turbines to allow for greater long-term output.

Clean Air and Emissions Reductions

We recognize that climate change is a significant issue in the United States. As such, FPL Group is a clean energy company committed to managing our operations with sensitivity to the environment. Over the past decade, FPL Group has voluntarily made significant reductions in power plant emissions. Today our emissions rates of carbon dioxide, nitrogen oxide and sulfur dioxide are among the lowest of companies our size in the electric power industry. In addition, FPL Group has been successful in reducing toxic chemical releases from our power plants. Attached are Chemical Releases (TRI) reported to the Environmental Protection Agency by FPL.

As the first electric company to join the Environmental Protection Agency's Climate Leaders' program in 2003, FPL Group is committed to further improving its environmental performance. To that end, we committed to achieving an 18 percent reduction in emissions rates of greenhouse gases between 2003 and 2008 compared to a 2001 baseline. The company has already achieved, and in fact, surpassed its goal and anticipates filing an early achievement with Climate Leaders.

Climate Leaders is a voluntary industry and government partnership that encourages companies to develop long-term climate change strategies. Among the industry participants are such prominent companies as Johnson & Johnson, IBM, Pfizer, 3M and General Motors.

FPL Group also is a participant in the World Wildlife Fund's "PowerSwitch!Pioneers" program, which is designed to reduce greenhouse gas emissions through the use of cleaner fuels and more efficient electricity generation. FPL Group's goal is to achieve a 15 percent improvement in the efficiency of our power plants by 2020, resulting in reduced emissions of CO₂. The efficiency improvements will be made in part by switching generation from oil to natural gas and continuing to invest in wind power and other renewable energy sources.

Power Plant Operations

FPL has long been committed to providing power in an environmentally responsible manner even as the demand for electricity in our service area has increased many-fold. As one of the nation's leaders in "repowering" – that is, converting older oil-burning power plants to modern natural gas operations – we've greatly increased the efficiency of many of our plants while reducing emissions.

In addition, FPL has recently entered into agreements with the Florida Department of Environmental Protection (DEP) to install pollution prevention technology that will substantially reduce particulate emissions at one plant and ozone forming emissions at a second plant.

Alternative Energy

To help meet its increasing energy demands, FPL is continually seeking to develop alternative and environmentally friendly technologies.

Presently, Florida depends on renewable or “green” energy for about 1 percent of its electricity needs. Because of FPL’s efforts, this percentage may eventually grow. The company believes that greater use of conservation and cost-effective renewable resources is good for our nation and that the ongoing evaluation of emerging clean energy technologies is a worthy pursuit.

Not only does FPL have research and development programs that evaluate emerging energy technologies including renewable energy, the company currently uses renewable resources as part of its energy mix. For example, most of FPL’s biomass resources are in Florida, where electricity is purchased from power plants that produce energy using fuel from:

- solid waste
- landfill gas
- waste paper and
- sugar cane wastes.

Research and Development Programs

In addition, FPL has research and development programs that evaluate emerging energy technologies including renewable energy. Here are some examples:

- FPL has been involved in solar photovoltaic research and development projects since the late 1970s. Among the company’s pioneering efforts in this area is a 10-kilowatt photovoltaic (PV) system at its Martin power plant. The system is a type of solar power that generates electricity at customers’ homes or businesses, and is tied directly into FPL’s power grid. FPL also is currently helping to fund a number of PV pilot projects at homes and Florida schools. One program is looking at a technology that replaces existing roofing materials such as shingles with photovoltaic materials. This program, which is focused on test installations at two universities and five homes, is aligned with the federal government’s Million Solar Roofs’ initiative. In addition to these projects, FPL generally supports a number of research and development initiatives of the Florida Solar Energy Center.
- FPL supports other developing cleaner energy technologies, including industry research and development on fuel cells and microturbines. Fuel cells are electrochemical devices that depend on chemical reactions rather than combustion to produce thermal energy and electricity. They operate more efficiently than an internal combustion engine, with fewer emissions. FPL has joined the Florida Department of Environmental Protection in a research project that puts a fuel cell to work at Hugh Taylor Birch State Park in Broward County. A microturbine – a

- small combustion turbine that operates on clean-burning natural gas – is being tested by FPL in the Daytona Beach area at the Tomoka Correctional Institution.
- FPL customers who wish to support financially the development of renewable sources of energy generation in Florida and nationwide may now do so through a “green power” program called Sunshine Energy®. By participating in the program, each FPL customer can prevent more than 10,000 pounds of carbon dioxide emissions nationwide – as much CO₂ as a car produces in more than 11,000 miles of driving. In addition, for every 10,000 customers who enroll in Sunshine Energy, 150 kilowatts of solar capacity will be added in Florida.
 - FPL is at the forefront of a national industry program to develop hybrid line trucks that are capable of running in pure electric or conventional mode, or a combination of both. This year, FPL is testing three prototype diesel-electric bucket trucks that could impact its fleet services for years to come. The trucks can produce up to 25 kilowatts of electricity, and are expected to achieve greater fuel economy than standard gasoline-powered trucks in FPL’s fleet. The biodiesel-electric engine also burns more cleanly than hybrid gasoline-electric engines.

Customer Energy Conservation Programs

FPL is an industry leader in providing conservation and energy management programs, and over the past two decades more than 1.7 million customers have participated in our energy-savings efforts. This has helped reduce energy demands by more than 4,300 megawatts and allowed the company to delay building the equivalent of 10 medium-sized power plants.

FPL offers its customers programs that provide year-round, energy-saving services such as duct tests, free home energy surveys and cash incentive programs to upgrade insulation and central air conditioning. The company also offers business customers incentives for installation of energy-efficient cooling/heating and lighting systems, roofs, insulation and window treatments. In addition, FPL provides optional “load management” programs that help reduce power usage by predictable and specific levels during times when energy demands are highest. These programs allow participating customers to receive lower electric bills for allowing FPL to reduce their electric use occasionally.

In particular, our rebate and incentive programs are aimed at reducing energy demands for:

- **Residential customers**
- **Business customers**

Recycling

Our commitment is to cost effectively recover and market surplus assets, maximizing their value while protecting the environment. FPL Group’s Corporate Recycling & Services department manages the recycling, reuse, refurbishment and reduction of 100

types of waste products at more than 65 facilities. Created in 1981, FPL has its own recycling center to process scrap wire and cable. As one of the first utilities in the United States to establish a recycling department, FPL continually consults with other utilities and salvage operations to offer an environmentally conscious, proactive and cost-effective alternative to the ever-increasing landfill problem.

Preserving and Protecting the Environment

We incorporate environmental protection and stewardship into the design, construction, operation and maintenance of our facilities. FPL Group's commitment to preserve and protect the environment is reflected in both its day-to-day operations and its large number of special environmental programs.

- Water is a key ingredient in the generation of electricity, and a valued natural resource. This is especially evident at FPL Energy's hydroelectric facilities in Maine, where we manage water levels for fish spawning, loon nesting and public water access as part of our efforts to meet the habitat needs of fish and bird species, as well as to provide opportunities for whitewater recreation, boaters and anglers.
- FPL Energy's Seabrook nuclear station supports the New Hampshire Estuary Project, an organization working to improve the water quality in the Hampton/Seabrook Estuary. The plant is located on marshlands adjacent to the Atlantic Ocean.
- FPL Energy's Bellingham Energy Center in Massachusetts and the Doswell Energy Center in Virginia are known as "zero discharge" facilities. This means we re-use all industrial wastewater, preserving the quality of our rivers, lakes and streams.
- With all our wind projects, we care about the potential impacts that wind facilities might have on birds and bats. Although wind turbines present small relative risk to flying animals, our personnel take actions to assess and reduce when possible – the risk to these creatures. In addition, our interest in our wind facilities' impact on birds and bats does not end after project siting and construction, but continues into the operational phase of the projects through involvement in research efforts.
- In Florida, FPL is especially sensitive to the state's unique ecosystems. Programs have been in place for many years to protect the numerous species of plants and animals that are found near the company's power plants. These include such endangered or threatened species as the American crocodile, Florida manatee, southern bald eagle, wood stork, sea turtle and Florida panther.
- Sea turtles -- As part of our commitment in support of protecting and rehabilitating sea turtles, FPL donated \$50,000 to the Loggerhead Marinelife Center in Juno Beach. The Center helps to educate the public on the importance of protecting and preserving these remarkable animals, and FPL is proud to be a partner with this prestigious group. In addition, FPL maintains an extensive sea turtle monitoring and research program at our St. Lucie nuclear power plant.
- Manatee Island -- FPL also made the unusual donation of an island to the U.S. Fish and Wildlife Service. Manatee Island is an 18-acre refuge for migratory and

- native birds that also serves as a winter landmark for West Indian manatees seeking the warm waters near the Fort Myers plant. The island is the first addition to the Caloosahatchee National Wildlife Refuge, which was established in 1920 as a preserve and breeding ground for native birds.
- Everglades Mitigation Bank -- FPL's 13,455-acre Everglades Mitigation Bank is a critical link to the success of restoring the Everglades ecosystem to its natural condition. Strategically located between Everglades National Park and Biscayne National Park in south Miami-Dade County, the Everglades Mitigation Bank is home to dozens of protected species of wildlife designated as endangered, threatened or as species of special concern. It also contains several unique ecosystems. Mitigation banking generally involves the creation, enhancement and preservation of wetlands on a large tract at one location to provide mitigation 'credits' for numerous smaller projects where wetlands will be impacted. FPL's Mitigation Bank has earned the support of various state and local environmental organizations, including the Audubon of Florida, Tropical Audubon (Miami-Dade County), Friends of the Everglades and Wilderness Society. In addition, the Edison Electric Institute presented its national Land Management Award to FPL for its environmental stewardship and management of wetlands, including the Everglades Mitigation Bank.

Awards

FPL Group's commitment to the environment – as well as overall sustainability – is reflected in the number of awards we've received.

- In June, FPL received the 2005 Hurricane Heroic Award from the Council for a Sustainable Florida. FPL was cited for implementing its highly efficient storm restoration plan to achieve unprecedented results in restoring power and restoring lives in the wake of the 2004 hurricane season. The council deemed getting the power back on as soon as possible important to the economic viability of the community, as well as the protection of Florida's fragile environment and vital citrus industry. FPL also was recognized for its commitment to social responsibility as it raised nearly \$.4 million toward hurricane relief.
- In January 2005, FPL Group was named one of the Global 100 Most Sustainable Corporations in the World by Corporate Knights, Inc., a Canadian media company. Chosen from a universe of 2,000 of the world's largest corporations, FPL Group was cited for the honor after achieving a sustainability performance that places it within the top five percent of its sector.
- As one of America's cleanest energy providers, the emissions rates of our power plants are among the lowest in the electric industry. Our environmental achievements were reflected by our No. 1 environmental ranking – for three consecutive years – in the Innovest Strategic Value Advisors report, which compares the environmental performance of 26 U.S. electric utilities. Innovest is an internationally recognized independent investment research firm specializing in environmental finance and investment opportunities.

- FPL Group scored the No. 1 ranking in the United States and No. 2 globally in a World Wildlife Fund report in 2004 that analyzed 72 of the world's leading power companies on current use of available technologies to reduce carbon dioxide emissions, as well as clear commitments made for future improvements.
- FPL was named a Tree Line USA utility for the third year in 2004 by the National Arbor Day Foundation. FPL was honored for our quality tree care program, annual worker training in quality tree care practices, as well as a tree planting and public education program.
- FPL Group was presented with the 2003 Edison Award, the electric power industry's highest honor. In announcing the award, EEI said, "FPL Group's winning strategy clearly demonstrates that environmental excellence and outstanding financial performance can go hand in hand. FPL Group's success is emblematic of the ingenuity and vision that are the hallmarks of our industry. Its leadership and boldness, and the ability to see what lies ahead in a constantly changing industry, are what set them apart."
- Platts, the energy information and market services unit of The McGraw-Hill Companies, presented FPL Group with a 2003 Global Energy Award as "Renewable Company of the Year" for our clean energy portfolio.

Social Responsibilities

FPL Group and our employees are working to build better communities where we work and live. Our commitment to safety, caring and education is extended to our workforce and beyond to the customers we serve. Never do we take our social responsibility more seriously than during times of crisis, such as in the wake of the hurricanes of 2004. FPL recognizes that the success of our company depends on the prosperity of the communities where we operate. Among FPL Group's social responsibilities are safety and well being, diversity and equal opportunity employment, and being a good and caring neighbor to the communities we serve.

Community Care

We believe that we have a responsibility as a corporate citizen and good neighbor to improve the quality of life in our communities. We do this by identifying important community needs and offering the strengths of our company and the talent of our employees in meeting those needs.

One of our primary concerns is the safety of our customers and the public. We promote general electrical safety through a variety of public channels, including broadcast and television messages and the company's monthly "Energy News" newsletter to customers. The Florida Power & Light Company Web site also provides important safety tips, as does FPL For Kids Web site for children. FPL also uses a flatbed-mounted demonstration called Sparky to drive home the importance of safety around FPL facilities to firefighters, police officers, building inspectors and emergency personnel.

Also important to FPL Group are the opportunities we provide in the communities we serve. Our minority business program gives qualified small, disadvantaged and women-owned businesses the chance to market their products and services to the company and to become more competitive when seeking business relationships with FPL Group. In 2004, FPL spent \$38 million with 375 diversity suppliers.

Employee Policies

FPL Group is one of 12 companies nationwide named to the Companies That Care Honor Roll, which recognizes organizations that demonstrate outstanding and measurable commitment to their communities, both within the workplace and beyond. The company received this special designation from The Center for Companies That Care, a national, not-for-profit organization. FPL Group was placed on the honor roll following a rigorous evaluation process conducted by an independent panel of business and academic professionals. Of 10 characteristics considered in the center's evaluation, FPL Group scored particularly high in cultivating the full potential of all employees and enabling the well-being of individuals and their families through compensation, benefits, policies and practices.

Providing Excellent Employee Benefits

FPL Group is committed to providing our employees with excellent employment opportunities and benefit programs that promote a sense of security and a work-life balance. Our company carefully examines plans and programs that result in the best value coverage for our employees and their families. FPL Group's contributions to our employees' benefits generally account for more than 30 percent of total compensation.

A wide variety of benefit plans are available.

Building Workforce Relations

Approximately one-third of FPL's employees are represented by the International Brotherhood of Electrical Workers (IBEW). For years, the company has worked to build and strengthen relationships with union members through:

- Collaborative decision-making among company and union leaders
- Joint safety advisory groups
- Business unit operational reviews and updates
- Business unit labor management meetings
- Executive labor management meetings
- Communications briefings

Keeping Employees Safe a Priority

FPL Group treats safety as a value. We're committed to providing a safe and healthy work environment for all employees and require that safety should not be compromised for any other business priority. We also expect companies providing services to FPL Group to have the same high standards of safety and health as we do.

The company takes responsibility to provide the facilities, equipment, tools, procedures, safety programs and training for employees to work injury free. Our employees have the responsibility to work safely for their own benefit as well as their co-workers. This responsibility includes following appropriate safety rules and planning each work activity using appropriate risk assessment, good judgment and skills, along with a sincere dedication to work safely.

No other business objective has a higher priority than safety, and in recent years we have significantly reduced the number of serious injuries on the job. As an example, from 2000 through April of 2004, the FPL Occupational Safety and Health Administration (OSHA) injury rate declined by 65 percent from just under 3.5 injuries to 1.2 injuries per 200,000 hours worked. If FPL were to calculate lost time (which the company does not because not every OSHA rate translates into lost time) the rates would be:

- 2001 2.86%
- 2002 2.94%
- 2003 2.17%
- 2004 1.92%

Helping Employees Get and Stay Healthy

As part of an integrated and balanced approach to the health and well-being of employees and members of their families, the FPL-Well program offers a wide scope of health and wellness-related services. In 2005, the company was awarded the Best Employees for Healthy Lifestyles Platinum Award from the National Business Group on Health in recognition of our efforts to create, promote and support healthy lifestyles at FPL.

FPL's fitness centers include two state-of-the-art facilities at its Juno Beach and Miami headquarters that offer cardio and strength equipment, fitness testing and group exercise classes. The facilities' health centers offer medical services and other health-related services to both employees and their dependents. Periodic special promotions feature such issues as nutrition and weight management, stress management and smoking cessation.

Assisting Employees in Times of Need

The company also offers a confidential Employee Assistance Program (EAP) that provides help to employees working through personal problems. The EAP is separate

from, but coordinates with, the mental health and substance abuse benefits the company offers to its medical plan participants.

In 2003, FPL established Operation Homefront to provide support for FPL employees and their extended families directly affected by the war in Iraq. A support group is available with informal sessions led by a professional psychologist for those who have loved ones in the war or anyone who is affected by the war in other ways.

Offering Equal Opportunity and Education

We have long believed that the maximum utilization of human resources and equal employment opportunity are mutually dependent. Not only are discriminatory practices unlawful, but that they are unjust and economically wasteful as well. Therefore, all of our corporate activities reflect the full acceptance of our responsibilities as an Equal Opportunity Employer (EEO). Our EEO program addresses specific equal employment opportunity issues and ensures that equal opportunities are made available to all employees.

In addition, FPL takes affirmative action to employ and to advance in employment qualified disabled individuals, qualified disabled veterans, and qualified veterans of the Vietnam era.

As part of a renewed focus on employee growth and development, the company established FPL Group University in 2003. The University includes curriculum in the areas of quality, leadership development, business and commercial skills and professional effectiveness. FPL Group University features five colleges entailing power generation, power systems, customer service and sales, nuclear power and information management.

Community Programs

FPL is involved in numerous community-based programs that strive to improve the quality of life in FPL communities. We offer an array of information to schools, community groups and individuals about how we do business, electrical safety and environmental issues.

The company supports education at all levels. The focus of the programs supported by the company varies at different grades. FPL also supports education through school mentoring.

Our outreach at the elementary and middle school levels is primarily directed toward teaching children about energy, electrical safety and energy conservation. Examples of our educational programs include:

- Energy Encounter (more than 30 interactive exhibits pertaining to energy and environmental education)
- Classroom presentations

- Teacher workshops
- Special events for families
- Scout activities
 - FPL's Electrifying Experience demonstration
 - FPL's Energy Whys demonstration
 - Turtle walks

College and university level support focuses on institutions that prepare our future workforce and provide the expertise in research and development and employee development necessary to maintain FPL as a high performance organization.

Outreach

Through its subsidiaries, FPL Group provides electricity to thousands of communities in over two dozen states. As part of our social responsibility, we are committed to being a good neighbor. This entails anticipating and understanding our customers' needs, building long-term relationships in the neighborhoods and communities of which we are a part, and being open-minded and receptive to new ideas.

As part of our community outreach program, we solicit the views and opinions of community members before we undertake major electric system expansion or upgrade projects.

As part of our approval processes, we are committed to involving the community in our planning so that we can learn more about community interests and priorities and take them into consideration in our planning along with the technical requirements of providing electricity.

Corporate Citizenship

FPL is involved in the community in many ways including contributions, management involvement, community programs and employee volunteerism. In 2004, FPL Group donated \$.5 million in charitable and civic contributions and sponsorships. Highlights include:

- BuildSmart for Humanity – FPL has joined BuildSmart for Humanity in a regional partnership to sponsor Habitat homes in counties affected by the hurricanes of 2004. FPL is investing more than half a million dollars into the program in 2005 to build six homes. More homes will be built in 2006 and 2007. FPL also will incorporate BuildSmart® energy conservation features into more than 300 Habitat for Humanity homes in communities we serve.
- Race for the Cure – FPL has been a lead sponsor of the Race for the Cure to fight breast cancer for several years, and has pledged to continue its commitment into the future. Seventy-five percent of the money raised from the race goes to breast cancer treatment and education programs in Palm Beach, Martin and St. Lucie

counties. The remaining 25 percent goes to the Susan G. Komen Breast Cancer Foundation for national breast cancer research studies.

- United Way – The company is a major corporate donor to the United Way, annually contributing approximately \$15,000. In 2004, FPL Group's annual United Way campaigns raised more than \$3 million in pledges from employees.
- Community Volunteer Corps – Through this employee-run group, a strong network of employee volunteers gave 15,000 hours of their time to participate in a wide variety of neighborhood and community projects such as cleaning shorelines, renovating playgrounds, volunteering for Earth Day projects, mentoring and holiday food drives. The group operates independently of any corporate partnership or financial support. FPL's internal Web site also offers employees the opportunity to help through VolunteerMatch.org.
- American Red Cross Real Heroes – FPL is the major sponsor of the American Red Cross' Real Heroes Awards even t to honor local heroes who have demonstrated extraordinary courage.
- Sunfest – FPL provides an environmental sponsorship at Sunfest, Florida's largest music, art and waterfront festival held annually in West Palm Beach. Company volunteers also work in booths designed to promote hurricane and conservation awareness.
- Care to Share program – This program invites FPL customers to join the company in contributing to a fund that helps people having difficulty paying for electric service.
- ASSIST – This FPL referral program seeks help from government and private organizations for families finding it difficult or impossible to pay their electric bills.
- AWARE program – Through Always Watching for At Risk Elders, FPL's field employees identify and help customers who show signs of needing assistance.
- Medically Essential Service program – FPL's program assists people with special medical needs who may depend on electricity for their well-being.
- Employee blood drives – Company-sponsored blood drives are held approximately every eight weeks at many company locations.
- Support for overseas troops – FPL's Community Volunteer Corps has been collecting supplies for FPL reservists and encouraging employees to send cards and letters to their co-workers fighting in Iraq.

Investments

Through the FPL Group Foundation, we provide civic and charitable contributions that focus on education, the environment, human services and community development. The foundation matches employee contributions to education dollar for dollar and supports scholarships for employees' children who qualify as national merit finalists. Other examples of these community investments include:

Education

- Florida A&M Foundation
- Junior Achievement
- Florida International University
- Collier County Education Foundation
- University of Florida Foundation

Environment

- Audubon Society of Florida
- Florida Wildlife Federation
- Hobe Sound Nature Center
- Marine Life Center of Ino

Human services

- Big Brothers & Big Sisters of Palm Beach
- Florida Council on Aging
- Habitat for Humanity
- United Way (26 counties)

Community development

- Economic Development Councils
- Local Initiative Support Corporation
- Manatee Community Foundation
- Urban League
- Ks Voting

Energy Conservation

For many years, FPL's industry-leading energy management and conservation programs have helped defer the building of new power plants. The company provides incentives to customers who are willing to take advantage of FPL's products, services and programs designed to lower energy usage. Overall, FPL energy conservation programs have saved enough electricity to postpone the need for 10 additional medium-sized power plants in Florida. Energy advice and programs are offered to both:

- **Residential customers**
- **Business customers**

BuildSmart®- FPL's program for energy-efficient new home construction offers customers the option to upgrade to energy-efficient air conditioning, attic insulation and other energy conservation measures to keep their new home's energy bills lower. The

program makes it possible for homeowners to reduce monthly electric bills by up to 30 percent when compared to similar homes not upgraded to BuildSmart standards. The Department of Energy and the Environmental Protection Agency have selected FPL's BuildSmart program to receive the ENERGY STAR® Outstanding Achievement Award for 2004.

Responsibility

In our mission to be a good neighbor to the communities we serve, we take our responsibility to provide safe, continuous and reliable electric service very seriously. We're also taking the actions necessary to meet our customers' growing demand for electricity.

Because the generation and flow of electricity is so vital to our nation's health and well-being, electric companies must be able to effectively deal with unforeseen events such as major storms, oil spills or capacity shortfalls.

FPL Group's ability to respond quickly during times of crises is well documented, never more so than during the 2004 hurricane season. The company has instituted a comprehensive business continuity plan to further enhance our restoration capabilities. The plan provides processes and specific actions to ensure that the company's employees are safe and accounted for, that key business functions are maintained, and that inconvenience to customers is minimized should a crisis of any type occur.

Hurricane Restoration Completed in Record Time

When three devastating hurricanes swept through our service area within a six-week period last year, FPL's entire system was put to the test. No electricity provider in America has ever had to face what we experienced.

Hurricanes Charley, Frances and Ivanne forced us to mobilize more field crews over a more concentrated time period than any energy company in history. At one point, nearly 17,000 people were working on the relief effort with crews brought in from 39 states and Canada helping FPL restore electric service to nearly 5.4 million homes and businesses.

The restoration of power to millions of customers in record times for such extraordinary circumstances did not go unnoticed. Despite the frustration of being without power for extended periods of time, many customers levied high praise upon FPL employees for their selfless and dedicated service through countless letters and e-mails.

\$1.4 Million Raised for Victims

In addition to working around the clock to restore power, FPL also helped rebuild the lives of thousands of Floridians by offering a \$50,000 matching grant to the American Red Cross. FPL employees and customers almost doubled that target by donating \$90,000. FPL provided a matching gift of \$77,000 to the Florida Hurricane Relief

Fund, to which FPL customers also donated \$100,000. Combined, FPL helped raise nearly \$.4 million toward hurricane relief.

EI Emergency Response Award

FPL was presented the Emergency Response Award by the Edison Electric Institute, the leading trade association of the electric power industry, for outstanding efforts to restore electric service in the wake of the unprecedented 2004 hurricane season.

Planning for Future Electricity Needs

Florida is the nation's fourth largest state and is growing at a faster rate than any other large state. Responding to the state's growth is a major challenge for Florida Power & Light Company, which is adding new accounts at the rate of more than 100,000 per year and currently services more than 4.2 million accounts.

In recent years FPL has added significantly to its generation and power infrastructure, increasing its generating capacity to nearly 19,000 megawatts. This has allowed us to meet our growing customer demands while maintaining a reserve margin of 20 percent.

On an average residential customer basis, use of electricity by FPL customers has increased by 28 percent since 1985.

From 1985 to 2002, the company added 4,000 megawatts of generation. In contrast, from 2003 to 2007, the company has or will invest more than \$1 billion in adding another 4,000 megawatts, growing its capacity at a pace three times the rate of the previous 17 years. In addition, FPL is investing \$200 million between 2004 and 2007 in maintaining its nuclear units in top shape to ensure continuation of that supply of low-cost electricity. From 2003 through 2007, FPL, in order to maintain its reliable service, expects to invest

more than \$1 billion in poles, wires and other electrical equipment necessary to deliver power to customers.

Since launching an aggressive program in 1997 to improve electric reliability, FPL has achieved outstanding results. The annual average amount of time customers are without power has been reduced by nearly 50 percent, and the frequency and duration of outages had declined as well. Excluding hurricane-related outages, the average number of minutes that FPL customers were without power during 2004 was about half that of the most recent industry average.

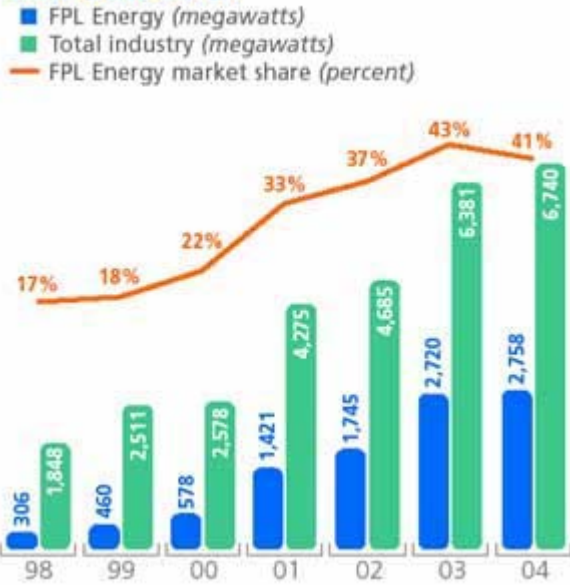
The company also has focused on improving customer satisfaction, and this was reflected by high scores in residential and business surveys conducted in 2004. The J.D. Power and Associates' Electric Utility Customer Satisfaction Study™ of the nation's largest electric utilities placed FPL tied for second in the southern region in overall customer satisfaction. This marked the fifth consecutive year that the company ranked above the industry average. FPL also scored well in the J.D. Power and Associates' customer

satisfaction survey of mid-size businesses, improving to fourth best in the southern region.

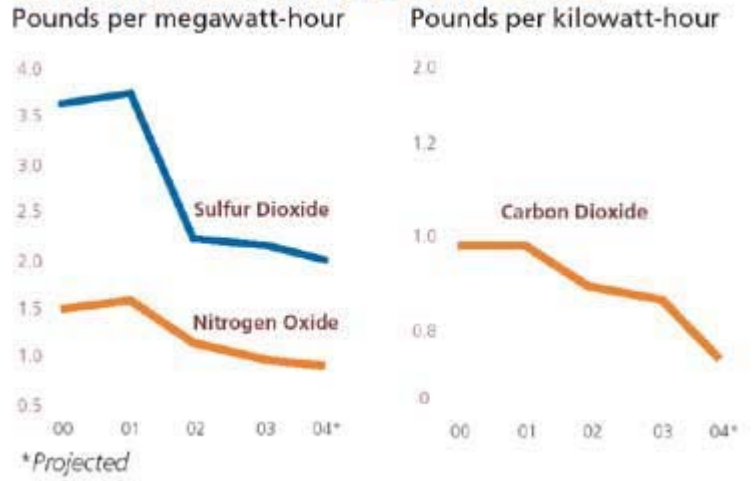
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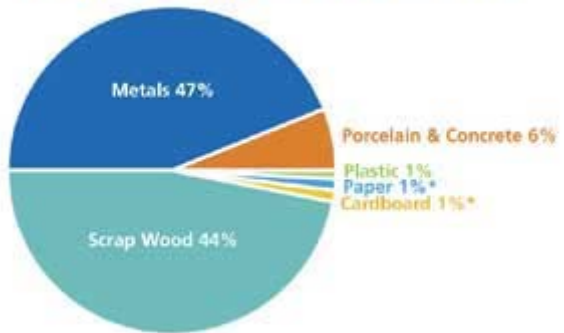
SIGNIFICANT MARKET SHARE IN U.S. WIND GENERATION



REDUCING EMISSIONS RATES AT FPL GROUP



TYPE OF MATERIAL RECYCLED 2000–2004

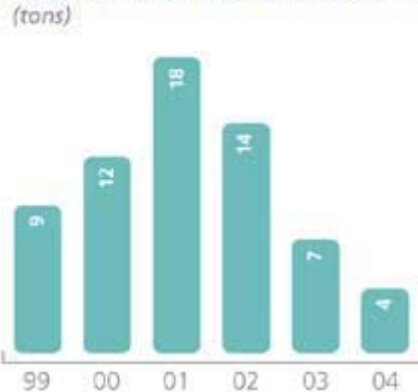


* A large quantity of paper and cardboard are recycled by local vendors

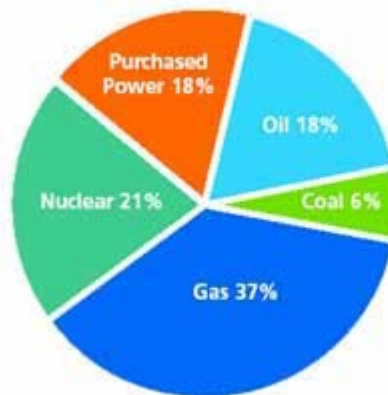
TOTAL MATERIAL RECYCLED 2000–2004



HAZARDOUS WASTE GENERATED 1999–2004



DIVERSIFIED ENERGY MIX
Based on megawatt-hours produced in 2004

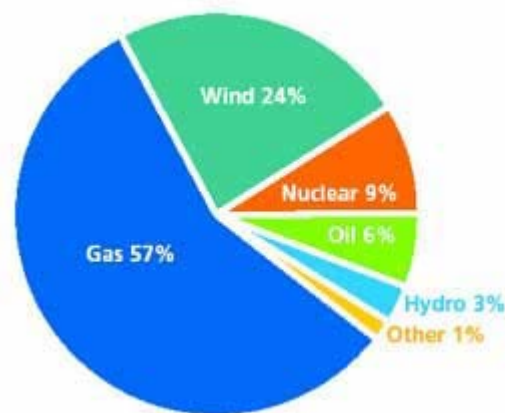


FPL Energy: A Leading Clean Energy Provider

With power plants in 24 states, FPL Energy is a leader in producing electricity from clean and renewable fuels (blue areas denote states with FPL Energy projects and offices).



DIVERSIFIED PORTFOLIO PROVIDES BALANCE
11,520 net megawatts in operation at 12/31/04

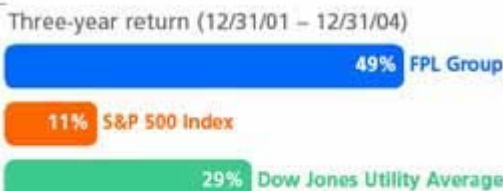


FPL: Serving A Fast-Growing State

Florida Power & Light Company serves more than 4.2 million customer accounts in 35 counties.



FPL GROUP COMPARATIVE TOTAL SHAREHOLDER RETURN

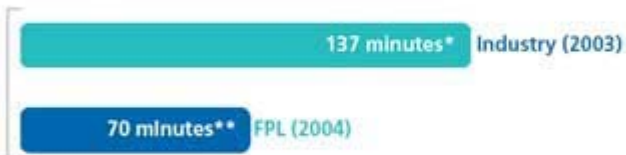


STEADILY GROWING DIVIDEND

Dividends per share*

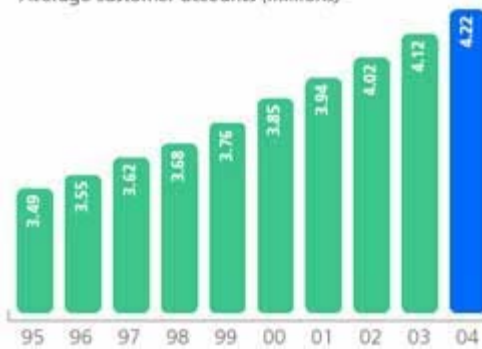


TIME CUSTOMERS WERE WITHOUT POWER



*Industry source: 2003 Edison Electric Institute survey
**Excluding the impact of the three hurricanes that hit FPL's service territory.

STEADY CUSTOMER GROWTH
Average customer accounts (millions)



APPENDIX C
DESIGN DATA REPORT



**Langdon II
Cavalier County, North Dakota**

Design Data Report

Project Overview

- 40.5 MW expansion of existing Langdon Wind Energy Center
- Up to 27 additional wind turbines
- Wind turbine generator model(s) to be used pending micrositing and wind resource optimization, but project generically based on use of General Electric 1.5 MW series
- PSC to receive final layout after turbine micrositing, but prior to construction

Wind Turbine Generator

General Electric 1.5 MW Series Technical Data	
Model Types	1.5se/1.5s/1.5sle/1.5xle
Rotor Diameter	70.5 m – 82.5 m
Swept Area	3,904 m ² – 5,346 m ²
Rotorspeed	10.2 rpm – 22.0 rpm
Blade Material	Fiberglass and epoxy or polyester resin
Pitch System	Independent blade pitch control
Approximate Minimum Wind Speed Necessary for Operation	3.5 m/s – 4.0 m/s
Approximate Wind Speed Necessary To Achieve Rated Electrical Output	14.5 m/s
Approximate Maximum 3-second Wind Gust Allowed During Operation	25 m/s
Maximum Wind Speed	> 45 m/s
Modular Tower System	2 conical & 1 cylindrical sections
Obstruction Marking and Lighting	Turbine and tower finish color RAL 7035 (light grey). Aviation lighting as required by FAA Determination.
Foundations	Spread footing or P&H post-tensioned piers
Generator Type	Doubly-fed asynchronous Generator with slip rings
Rated Power	1,500 kW
Generator Rated Voltage	575 V

Balance of Plant Facilities

Wind Farm Power Collector System	
Construction Type	Two (2) circuits of primarily underground direct-buried cable
Collector System Voltage	34.5 kV
Step-up Transformer at Tower Base	34.5 kV/575 V
Collection System Design Standards	National Electric Safety Code (NESC) / FPL Energy (FPLE)
Substation Expansion	
Approximate Substation Expansion Area	3 Ac
Main Transformer Rating	115/34.5 kV, 27/36/45 MVA
Major Equipment	One main transformer, 115 kV motor operated air break switch, 115 kV gas-insulated breaker, 115 kV manual air break switch, 34.5 kV switchgear building or 34.5 kV open-air breaker with control house, telemetry and metering to interconnecting utility
Substation Design Standards	NESC/FPLE, Telemetry and metering in accordance with Interconnecting Utility requirements
Interconnecting Utility	Minnkota Power Cooperative

APPENDIX D

STUDIES, ASSESSMENTS *and* PERMITS

APPENDIX D.1

Licensed Microwave Search & Worst Case Fresnel Zone



Executive Summary – Wind Power GeoPlanner™

Licensed Microwave Search & Worst Case Fresnel Zone

Comsearch performed an analysis to evaluate the potential effects of the planned Cavalier County Wind Energy Center in Cavalier County, North Dakota on existing non-Federal Government microwave telecom systems.

Microwave Search Results: Comsearch's Wind Power GeoPlanner™ provides a graphical representation of affected microwave paths and provides supporting technical parameters. The microwave path data is overlaid on topographic basemaps. Comsearch identified 3 microwave paths that intersect the project area (see Figure 1 and Table 1 below).

Comsearch then calculated a Worst Case Fresnel Zone (WCFZ) for each microwave path in the project area. The mid-point of a full microwave path is the location where the widest (or worst case) Fresnel zone occurs. Fresnel zones are calculated for each path using the following formula.

$$Rn \cong 17.3 \sqrt{\frac{n}{FGHz} \left(\frac{d1d2}{d1 + d2} \right)}$$

The calculated WCFZ radius, giving the linear path an area or swath, buffers each microwave path in the project area. The distance unit is in meters and can be found in the column attribute "WCFZ." In general, this is the XY area where the planned wind turbines should be avoided, if possible. These areas are shown in Figure 2.

Please note that because the turbine locations were not provided, we could not determine if any potential obstruction cases exist between the planned wind turbines and the microwave systems. If the latitude and longitude values for turbine locations are provided, Comsearch can identify specific microwave telecom paths and turbines where a potential XY conflict exists. Additionally, when wind turbines need to be located inside a WCFZ, Comsearch can provide a detailed clearance study, which considers the vertical Z-height clearance objectives.

Map Projection: The ESRI® Shapefiles contained in the enclosed GeoPlanner CD are in NAD 83 UTM Zone 14 projected coordinate system.

Comsearch Contact:

Denise Finney, Account Manager
Phone: (703) 726-5650 Fax: (703) 726-5599
Email: dfinney@comsearch.com

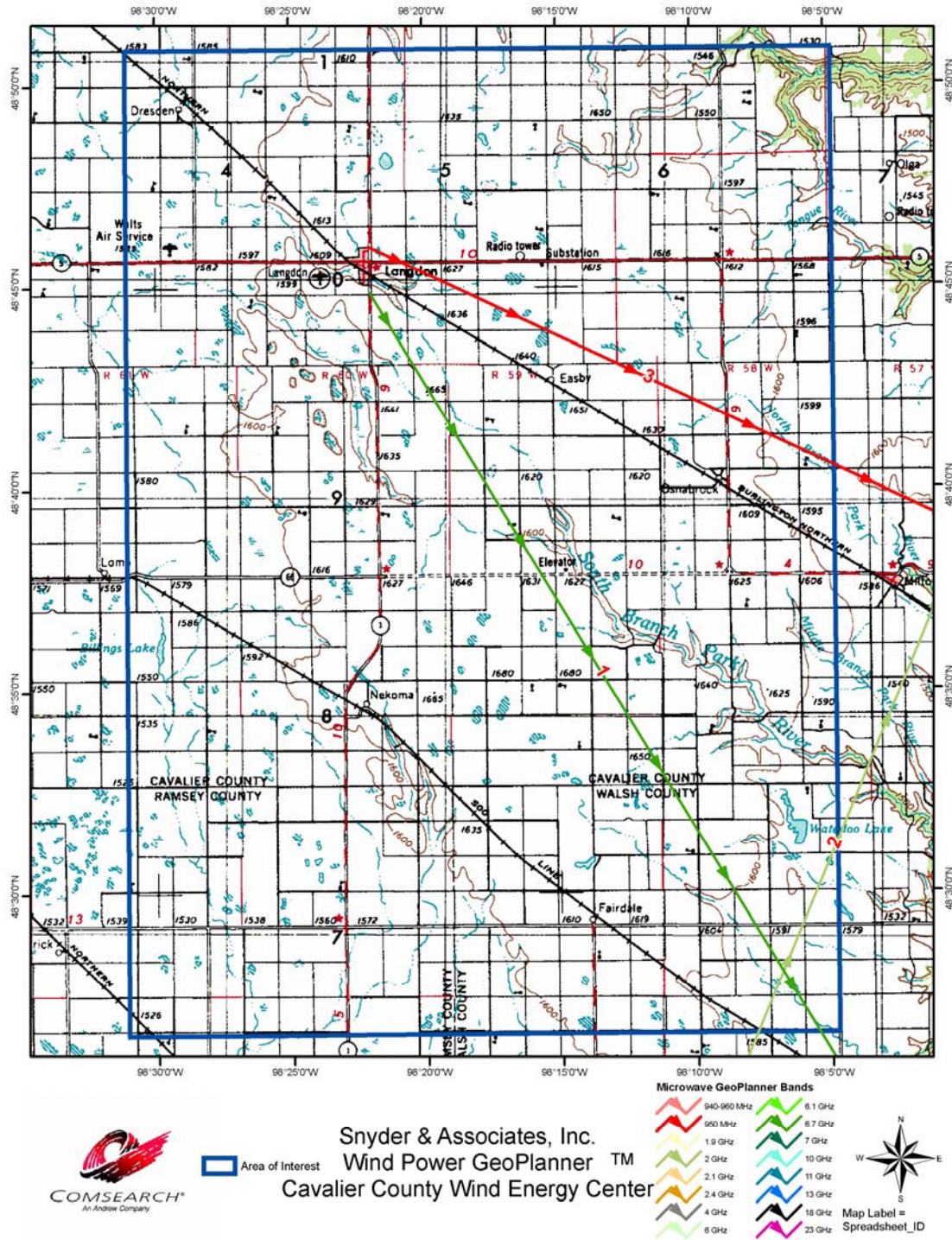


Figure 1 – Wind Power GeoPlanner™

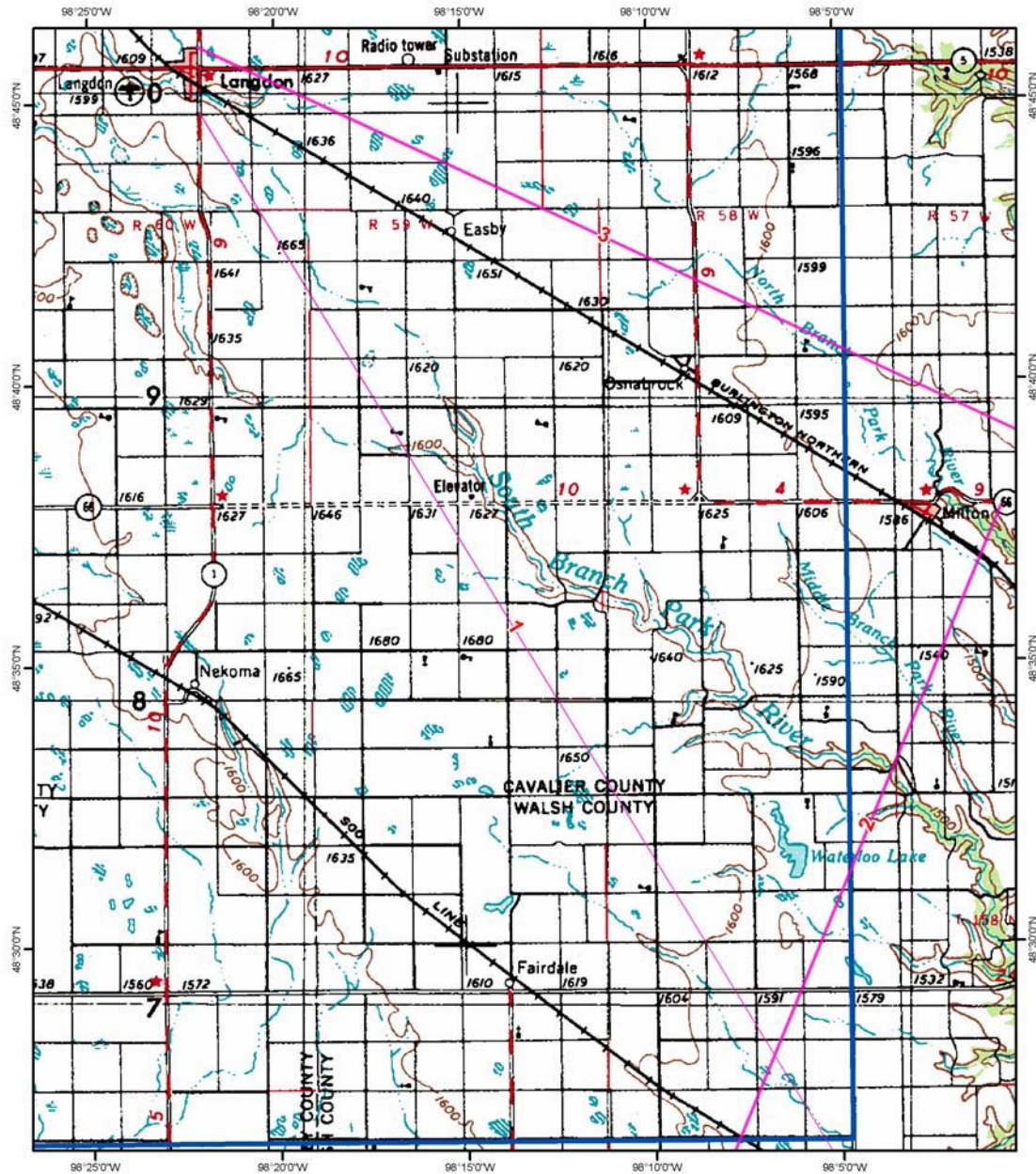
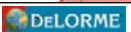
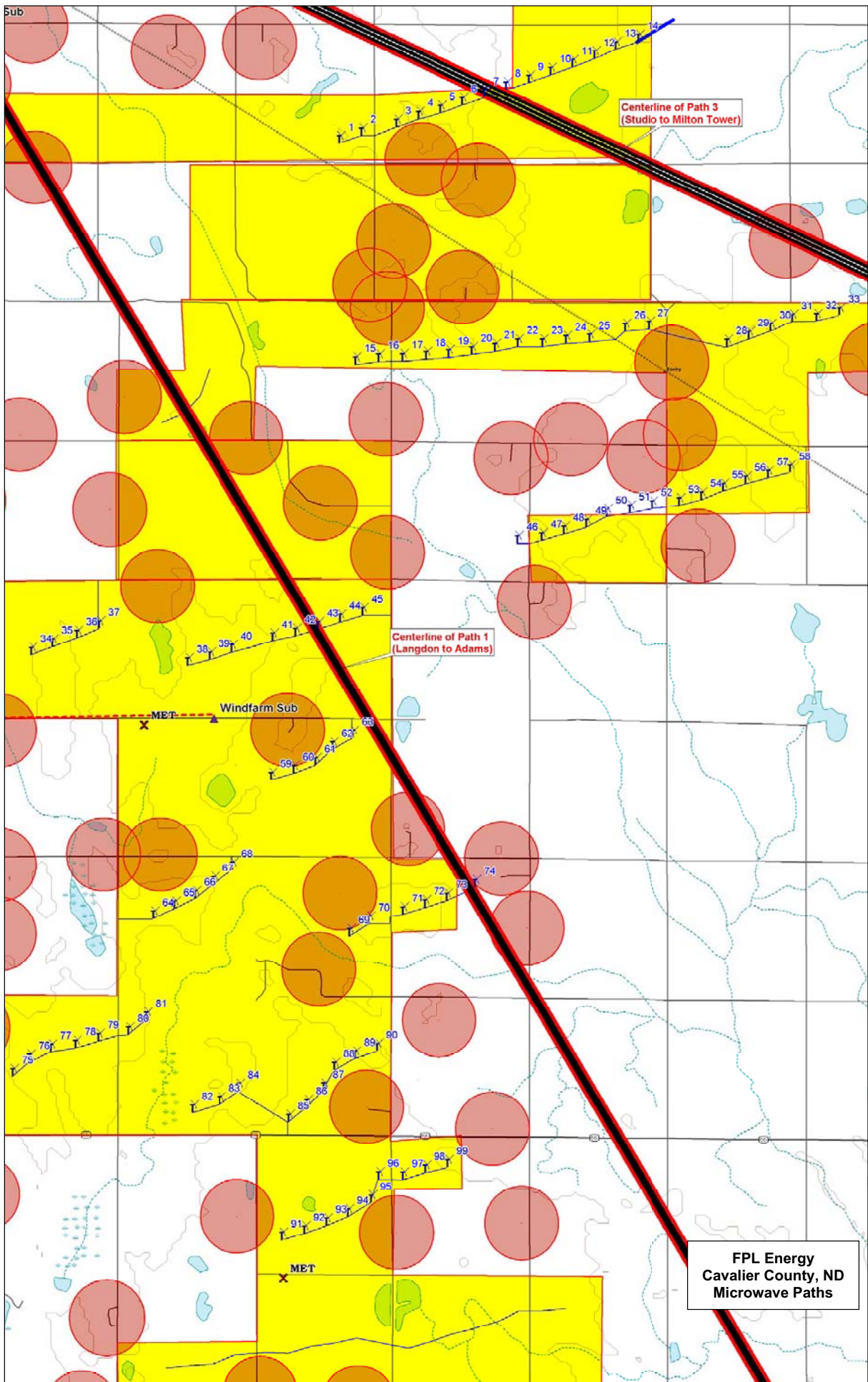


Figure 2 – Wind Power GeoPlanner™ & WCF



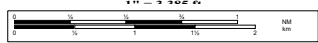
ID	Name Site 1	Name Site 2	Call Sign Site 1	Call Sign Site 2	BAND NAME	Licensee	WCFZ (m)
1	LANGDON	ADAMS	KPN81	KZC46	Upper 6 GHz	MINNKOTA POWER COOPERATIVE INC	21.96
2	LAKOTA	MILTON	WPOQ913	RXONLY	2 GHz	CATAMOUNT BROADCASTING OF FARGO LLC	50.60
3	STUDIO	MILTON TOWER	WQFA924	RXONLY	950 MHz	KGPC COMPANY	49.93

Table 1 – Microwave GeoPlanner Links Considered in Analysis
(See enclosed mw_geopl.xls for more detailed information and GP_dict_matrix_description.xls for field description)



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Zoom Level: 12-5 Datum: WGS84

Scale 1 = 40,676
1" = 3,389 ft



APPENDIX D.2

Spring Avian Survey, Langdon Wind Resource Area Cavalier County, North Dakota

**SPRING AVIAN SURVEY
LANGDON WIND RESOURCE AREA
CAVALIER COUNTY,
NORTH DAKOTA**



PREPARED FOR



Prepared by



TETRA TECH EC, INC.

July 2007

Executive Summary

Langdon Wind, LLC (Langdon Wind) contracted with Tetra Tech EC (TtEC) to perform spring avian surveys to quantify local avian use and to identify potential avian impacts associated with the construction and/or the operation of the proposed Langdon Wind Resource Area (WRA). TtEC performed a Spring Avian Point Count Survey at the proposed Langdon Wind WRA. Twenty point stations were surveyed throughout the study area to best cover the proposed 106 turbine array.

A total of 84,886 birds were counted, including 51 known and eight unknown species, indicating that the overall avian use at Langdon is high. However, these high numbers are related to a major migration event which was documented during the first week of the survey. Of the total 84,886 birds counted during this survey, 61,391 (72.3%) were seen over the first observation point survey (which consisted of two days). Two species (unidentified sparrow and snow goose) made up 97.3% of that first week total and 70.3% of the entire survey total. Many of these species have low exposure risk according to the risk exposure index as they primarily fly below the anticipated rotor swept area (RSA).

Raptor use at the Langdon Wind WRA (0.4 birds/20 min) was low and ranked lowest out of fourteen published point count studies for raptor use when compared to rates observed at existing wind facilities. Additionally, overall exposure risk for the site when compared with other wind energy sites is relatively low. The Northern harrier, the major contributor to overall raptor use, was observed in 14.5% of all surveys. Although northern harriers were the most common raptor species, their exposure risk (0.026) is relatively low due to the fact that most harriers were observed flying below the RSA. The remaining raptor species including a bald eagle, a golden eagle, red-tailed hawks, American kestrels, and sharp-shinned hawks all exhibited low exposure risk (≤ 0.01), as a result of both low overall raptor use and that fact that the majority of individuals were flying below the RSA.

Mortality events are most likely to occur when birds fly within RSAs. Overall, the majority of birds observed flew below the RSA (83.8%); fewer flew above the RSA (10.2%) or within the RSA (6.0%). As a group, raptors were observed primarily below the RSA (72.9%); fewer flew within the RSA (18.8%) or above the RSA (8.3%).

An index of relative risk of turbine collision, which takes into account both flight height and abundance, was calculated for each species. Risk was highest for snow geese (2.28), and to a lesser extent, migrating flocks of Canada geese (0.37), tundra swans (0.36), and northern pintails (0.27). Flight heights of many species did not overlap the RSA, which results in a low overall mortality risk due to collisions.

Special status species observed on the Langdon Wind WRA included a single bald eagle and a single golden eagle. Both species of eagle are state listed species of concern protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act and the bald eagle was formerly federally listed as a threatened species. Finally, State Species of Conservation Priority observed on site included: northern harriers, black terns, sharp-tailed grouse, and Franklin's gull.

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INTRODUCTION

Langdon Wind, LLC (Langdon Wind) is planning to develop a wind energy conversion facility in Cavalier County, North Dakota. The Langdon Wind Resource Area (WRA) encompasses approximately 30,400 acres on private land three miles southeast of the town of Langdon (Figure 1). The WRA is located in a rural farming area and is comprised almost entirely of cultivated farm fields interspersed with small farmsteads and several small wetland areas found predominantly in the southern portion of the WRA. Langdon Wind is committed to environmental stewardship and therefore contracted Tetra Tech EC (TtEC) to conduct spring avian surveys to quantify local avian use and to identify potential avian impacts associated with the construction and/or the operation of the proposed wind facility at the Langdon Wind WRA.

The ecoregions near the WRA are characterized by flat to gently rolling landscapes comprised of a thick mantle of glacial till. The subhumid conditions foster a grassland transitional area between the tall and shortgrass prairie. Because of the productive soil and near level topography, this ecoregion is almost entirely cultivated, with many wetlands drained or simply tilled and planted. However, temporary and seasonal wetlands create favorable conditions for duck nesting and migration within the WRA and vicinity.

The WRA is utilized by migratory species, including grassland birds and waterfowl, during the spring migration period. Kelly's Slough, a United States Fish and Wildlife Service (USFWS) refuge and major staging area for migrating shorebirds, is located approximately 100 miles southeast of the WRA. Based on historical field research and observations, shorebirds may also migrate north through Kelly's Slough in May.

METHODS

Field Methods

Fixed-point Surveys

Avian point count surveys were conducted to evaluate avian use and behavior during the spring migration season at the WRA (**Appendix A**). Survey dates and locations of survey points were selected to occur during spring avian migration, to cover a diversity of habitats, and to ensure the best possible viewshed. Surveys were conducted weekly between March 26 and May 31, 2007 (**Table 1**) at 20 points distributed throughout the WRA (**Figure 2**). Surveys were conducted during daylight hours under variable weather conditions.

Data were collected on all birds observed within an 800-meter radius circle centered on the point station. Surveys at each point lasted for 20 minutes, during which the observer continuously scanned for birds and recorded both visual and auditory observations (**Table 2**). Behaviors recorded included perching, flying, and singing. Flight heights and distances from the observer were estimated by experienced field ornithologists who used existing telephone poles, local transmission lines, and topographic maps for reference. A sample data sheet is shown in **Appendix B**.

Incidental Observations

Incidental observations were those recorded outside of the official 20-minute survey period. Incidental observations included observations that occurred 1) during travel between points, 2) before or after the official 20-minute survey period, and 3) outside the 800-meter radius circle. These observations were recorded on separate data sheets to provide additional information on avian use of the WRA.

Data Quality Assurance/Quality Control

QA/QC measures were implemented during all stages of data collection, analysis, and report preparation. To ensure legibility and completeness of data sheets, each observer reviewed, and clarified if needed, all data sheets before data entry into a spreadsheet for data storage and analysis.

Analysis

Avian Use of the WRA

Avian use of the WRA was derived by calculating the average number of birds observed per point. To evaluate the diversity and composition of avian species using the WRA, the number of individuals of each species was summarized. In addition, the number of observations is also presented, where an observation can be either an individual bird or a discrete flock of birds. This information helps evaluate if a high use number is driven by a single event (e.g., flock of birds moving through the rotor swept area).

Flight Behavior

Flight behavior was evaluated by calculating the proportion of flying birds that were observed below, within, or above the turbine rotor swept area (RSA). At the initiation of this project the General Electric 1.5 Megawatt turbine was anticipated to be used. As a consequence, a rotor swept area (RSA) between 41.5 and 118.5 meters above ground was used, the largest blades being considered by Langdon Wind at the time of the analysis. Birds that were observed flying, but for which there were no flight height data (<2% of our observations), were not included in this analysis. A bird was considered to have flown within the RSA if any of its recorded heights overlapped the RSA. That is, if a bird flew at heights that correspond to the RSA at any time during the survey, it was considered to have occurred within the RSA.

Risk Index

To estimate the exposure risk of collision for each species, the following equation was applied:

$$R = A * P_f * P_t$$

where R is the exposure risk, A is the mean number of birds/20 min, P_f is the proportion of all activity observations of species *i* that were observed flying; and P_t is the proportion of species *i* that were observed flying within the turbine RSA. This exposure risk of a species assists in conducting a comparison of species risk at the Langdon Wind Resource Area.

RESULTS

Langdon Wind WRA

A total of 15.5 square miles of the Langdon Wind WRA were surveyed during spring point count surveys, covering approximately 33% of the total WRA.

Species Composition

A total of 84,886 birds of 51 identified and eight unidentified resident and migrant species were recorded during 200 fixed-point count surveys (**Table 3**). The most frequently observed birds were red-winged blackbirds, (found in 54.5% of surveys), horned larks (53.5% of surveys), unidentified sparrows (52% of surveys), Canada goose (26.5% of surveys), mallards (20.5% of surveys) and killdeer (19% of surveys). Each remaining species comprised 18 percent or less of the total number of birds observed (**Table 5**).

Due to characteristics of flight and movements during their migration, the majority of sparrows seen in this survey were extremely difficult to accurately identify. After reviewing observers field notes, range maps, habitat preferences, time of migration and discussing these with Jill Shaffer of the US Geological Services Northern Prairie Wildlife Research Center (USGS; Personal communication, 2007) the most likely sparrow species or combination of sparrow and passerine species observed were: American tree sparrow (*Spizella arborea*), song sparrow (*Melospica melodia*), white-throated sparrow (*Zonotrichia albicollis*), horned lark (*Eremophila alpestris*), Lapland larkspur (*Calcarius lapponicus*), or chestnut-collared longspur (*Calcarius ornatus*).

Avian Use

Overall mean bird use within the Langdon Wind WRA was 424.4 birds/20 min, ranging from zero to 41,025 birds per 20 minute point count. Among taxonomic groups, mean use was highest for passerines (343.5 birds/20 min). The top species, an unidentified sparrow (288.0 birds/20 min) accounted for more than eighty percent of these individuals (**Table 4**). Other species with relatively high use included red-winged blackbird (24.5 birds/20 min), and snow bunting (23.2 birds/20 min). Mean use for each other passerine species was 3.0 birds/20 min or fewer.

Of the remaining taxonomic groups, waterbirds (waterbirds imply shorebirds, wading birds, gulls and waterfowl) had the second highest mean use (80.5 birds/20 min) and was dominated by snow goose (66.4 birds/20 min). Shorebirds by themselves had a total mean use of 0.5 birds/20min. Mean use for each other waterbird species was 6.6 birds/20 min per species or fewer. Raptor mean use was 0.4 birds/20 min with northern harrier (0.2 birds/20 min) having the largest contribution. Mean use for each other raptor species was 0.1 birds/20 min per species or fewer and includes bald eagles, golden eagles, red-tailed hawks, American kestrels, sharp-shinned hawks and an unidentified raptor.

Frequency of Occurrence

Red-winged blackbirds, horned larks and unidentified sparrows were detected at the majority of observation point surveys (54.5%, 53.5% and 52.0% of surveys, respectively). Canada

geese were detected in just over a quarter of the surveys (26.5% of surveys). Mallards and unidentified ducks were seen in 20.5% and 17.5% of surveys. All other birds were detected in 15.0% of the surveys or less (**Table 5**).

Flight Height and Exposure Risk

During spring avian use surveys, behavioral data were collected for 98% of all birds observed during point count surveys. Of flying birds with height data, 84% occurred below the anticipated RSA, 10% flew above the anticipated RSA, and 6% were within the anticipated RSA; (**Table 6**). For raptor species, which comprise less than 0.1% of the total species, 72.9% flew below the RSA, 18.8% of flew within the RSA, and 8.3% above the RSA.

Exposure risk was determined by multiplying mean use, by the proportion of birds observed flying, and the proportion of birds that occurred within the anticipated RSA. Snow geese had the greatest exposure risk (2.277), followed by the Canada goose (0.370) and tundra swan (0.355). The highest exposure risk for raptors was the northern harrier (0.026) followed by the red-tailed hawk (0.002) (**Table 7**).

Flight Direction

In general birds appeared to be flying in a northerly direction (25.9% flying north, 4.6% northeast, and 8.2% flying northwest (**Table 8**). Some of these movements, however, represent ordinary activity by resident species, such as foraging, (e.g., red-winged blackbirds) occurring throughout the site. The preponderance of the species recorded included multiple flocks of red-wing blackbird, unidentified sparrows, snow geese, Canada geese and various duck species. Birds flew in all of the remaining cardinal directions (e.g., east, south, west) around 12% of the time with birds flying in various directions (i.e. a hawk soaring around in circles) 10.3% of the time (**Table 8**).

Incidental Surveys

Five species were documented as incidentals during the spring surveys that were not seen during the point count surveys (**Table 9**). These additional species include yellow warbler, unidentified diver, semipalmated plover, lesser yellowlegs, and blue jay.

Biologist also looked for active stick nests throughout the survey to determine if any raptors were nesting near proposed turbine locations. Two red-tailed hawks were observed utilizing a stick nest near observation point 16 during the third and fourth survey. Although red-tailed hawks were seen again within the 800 meter radius, they were not seen within the immediate vicinity of the nest after week four.

DISCUSSION AND RECOMMENDATIONS:

Raptor Use and Exposure Risk

Raptors, because of their propensity to fly at heights similar to those encompassed by turbine rotor sweep areas, are a group of special interest. Raptor use at the Langdon Wind WRA (0.4 birds/20 min) was low and ranked lowest out of fourteen published point count studies for

raptor use when compared to rates observed at existing wind facilities (**Table 10**). Because studies of avian use do not share identical methodologies (e.g., length of survey period), comparisons should be used to provide useful generalities only.

Northern harrier, the major contributor to overall raptor use, was regularly seen throughout the WRA (observed in 14.5% of all surveys). Although northern harriers were the most common raptor species, their exposure risk (0.026) is relatively low due to the fact that most harriers were observed flying below the RSA. The remaining raptor species all exhibited low exposure risk (≤ 1.0), as a result of both low overall raptor use and that fact that the majority of individuals were flying below the RSA.

Three raptor species have been identified as special status species. A single bald eagle, a formerly federally-listed threatened species and a state listed species of concern was seen in the study area. A USFWS news release on June 28, 2007 announced the removal of the bald eagle from the Federal List of Endangered and Threatened Wildlife and Plants effective 30 days after publication in the Federal Register. This official publication is dated July 9, 2007. In addition, one golden eagle, a state listed species of concern was seen in the study area. Both species of eagle continue to be protected under the Bald and Golden Eagle Protection Act as well as the Migratory Bird Treaty Act. Finally, northern harriers, a regularly seen species, are also listed as a species of concern.

Non-raptor Use and Exposure Risk

Overall avian use at Langdon is high. Use by non-raptor birds collectively at the Langdon Wind WRA (424.2 birds/20 minute; **Table 4**) was the second highest of other previously recorded rates reported from ten existing wind facilities throughout the country (**Table 10**). These high numbers do not reflect regularly high use in the area, but were related to a major migration event which was documented during a two day survey of all 20 observation points the first week of the survey. Of the total 84,886 birds counted during this survey, 61,391 (72.3%) were seen during the first week. Two species (unidentified sparrow and snow goose) made up 97.3% of that first week total and 70.3% of the entire survey total. Without this migration event in the first two day survey, the total avian use would be reduced from 424.2 birds/20 minutes to 117.5 birds/20 minutes, a 72% decrease in observations.

High avian use at the Langdon Wind WRA can also be attributed to high numbers of red-winged blackbirds (24.5 birds/20 min), as was also found at the site with the highest avian use, Montezuma Hills (**Table 10**). This was the third most common species seen during the survey (unidentified sparrow and snow goose were first and second, respectively) making up 5.6% of the total surveyed birds. Land use within the WRA is predominantly row crop agriculture of canola and sunflower, which commonly attracts blackbirds traveling in flocks that contain large numbers of birds. Within the United States, blackbirds are very abundant, exhibiting broad stable populations, and often managed as a pest species in agricultural settings (Yasukawa and Searcy 1995), consequently, fluctuation in their local populations elicit very little concern from wildlife agencies. Additionally, in a post-construction fatality monitoring survey conducted at the Montezuma Hills wind facility, where blackbird use has been shown to be high (474 birds/30 min), only two red-winged blackbirds fatalities were recorded during the year long survey (Kerlinger et al. 2005).

Of the three most common species surveyed, only the snow goose estimates reflected measurable risk (2.277). This risk value was lower than might be anticipated because although mean use was high (66.4 birds/20 min), only 4.3% of snow geese surveyed were flying within the RSA. Unidentified sparrows and red-winged blackbirds both have minimal exposure risk because although mean use was high (24.5 birds/20 min), these individuals stayed below the RSA (**Table 7**). Additional species potentially at risk for this study site are waterfowl including; Canada goose (0.370) Tundra swan (0.355) and northern pintail (0.271).

Shorebird use (0.5 birds per 20 min) of the project area is relatively low when compared to shorebird abundance seen at the Kelly's Slough National Wildlife refuge located approximately 100 miles southeast of the Langdon WRA. The study at Kelly's Slough (Carey, 2003) resulted in an average of 18 different species and 1,832 individual birds being surveyed during the month of June (2000-2002). Only, five (5) different species of shorebirds were seen during observation point surveys at the Langdon WRA with a total of 150 individual birds. Of these five species seen, only two (killdeer and an unidentified shorebird) were seen flying with both of the individual birds flying below the RSA (**Table 7**). The Langdon WRA exposure risk for all shorebirds surveyed during this study is less than 0.01.

None of the passerine species surveyed during this study exhibit an exposure risk higher than 0.003. Post-construction fatality monitoring surveys of several passerine species (American pipit, American robin, common grackle, and Lapland longspur), as well as many species with similar flight characteristics, suggest these passerines avoid collisions with turbines (Kerlinger et al. 2005; Johnson et al. 2005a).

The remaining species, many of which were local residents, showed low exposure risk according to the risk exposure index, because they primarily flew below the anticipated RSA. Although the exposure index does provide a relative ranking as to what species may be most at risk, an index value of zero indicates low, rather than no risk associated with the construction and operation of wind turbines at the Langdon Wind WRA.

Three of the non-raptor species seen during the point counts are listed as Species of Conservation Priority. These include sharp-tailed grouse (1 individual), black-tern (20 individuals), and Franklin's gull (7 individuals).

Potential Impacts to Avian Species

The impacts to avian species that could result from the construction and operation of the Langdon Wind WRA are direct mortality and injury from collisions with turbines or guy wires (Kerlinger 2004), permanent or temporary habitat loss, and displacement of birds from habitats near turbines. Raptor mortality at newer generation wind projects has been very low. The Langdon Wind WRA, located in northeastern North Dakota, is similar in habitat (cultivated agricultural fields) to other operating wind facilities, such as Vansycle (OR) and the Buffalo Ridge (MN) WRAs, where post construction monitoring has occurred (Erikson et al. 2000, 2002). At these sites, only one raptor mortality was recorded over a four-year study at the Buffalo Ridge WRA, and no raptor mortalities were documented at the Vansycle

WRA during a one-year study (Erickson et al. 2001). Raptor use at these sites was significantly higher than that observed at the Langdon Wind WRA, and may not be indicative of wind projects in North Dakota.

Much of the Langdon Wind WRA is already disturbed, consisting predominantly of agricultural and pasture lands; however, the WRA does provide birds and other wildlife with cover and opportunities for nesting, perching, and foraging in wooded areas associated with drainages, shelterbelts, and surrounding scattered residences. Permanent habitat loss caused by the construction of the Langdon wind facility will likely consist of the removal of approximately 100 acres of rangeland and cropland, depending on the total number of turbines and associated access roads. Overall this is a very small proportion of the WRA (< 1%). Short-term disturbance associated with construction activities could temporarily displace birds from these areas and may result in the abandonment of nests; however, many species will have fledged by the time construction begins. Long-term noise and disturbance associated with turbine operation may also reduce habitat quality and result in the permanent displacement of birds from the WRA.

Avian displacement associated with wind power development has been documented at other wind plants, much of which is attributed to the direct loss of habitat or reduced habitat quality within 50 meters of the turbine pad (WEST and NWCC 2004). For example, at the Buffalo Ridge WRA, densities of male songbirds were significantly lower in Conservation Reserve Program (CRP) grasslands containing turbines than in CRP grasslands without turbines, which has been attributed to avoidance of turbine noise and maintenance activities, and reduced habitat quality due to the presence of access roads and large gravel pads surrounding the turbines (Leddy et al. 1999). Likewise, at the Buffalo Ridge site in Minnesota, the abundance of shorebirds, waterbirds, upland gamebirds, woodpeckers, and several groups of passerines was found to be lower in areas with turbines than without (Johnson et al. 2000a). However, data from Johnson et al. (2000a) suggest that the extent of reduced use is primarily limited to areas only within 100 meters of turbines.

Recommendations

Based on overall pattern of bird use, lack of high-value habitat and recent discussions with USFWS and NDG&F, there are no recommendations for future studies at the Langdon Wind Energy Center.

FPL Energy's post-construction monitoring plan includes the Wildlife Response Reporting System (WRRS). During routine maintenance operations FPL Energy field technicians are required to walk three concentric circles around the base of each turbine and report and document avian mortalities. These records will be kept for review and monitoring purposes.

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TABLES

Table 1. 2007 spring point count survey dates at the Langdon Wind Resource Area.

Date	
March 26th	May 2nd
April 5th	May 11th
April 11th	May 17th
April 17th	May 24th
April 25th	May 31st

Table 2. Data recorded during fixed point count surveys.

Variables Measured	Variables Measured	Variables Measured
date	observer	distance from observation point (first and closest)
start time/end time of the observation period	wind speed (low, high)	behavior
point number	species (or best possible identification)	flight height (in meters when first observed, low, and high)
visibility (good, fair poor)	# individuals	flight direction to (8 cardinal directions)
wind direction (8 cardinal directions)	sex/age class, when known	habitat

Table 3. Avian species observed during spring point count surveys at the Langdon Wind Resource Area, 2007.

Species	# of Total Birds	# of Observations	Percent Composition (% of total birds observed)
unidentified sparrow	57609	104	67.9
snow goose	13287	11	15.6
red-winged blackbird	4905	109	5.8
snow bunting	4642	12	5.5
Canada goose	1321	53	1.6
yellow-headed blackbird	590	29	0.7
unidentified duck	376	35	0.4
horned lark	366	107	0.4
mallard	305	41	0.4
European starling	267	3	0.3
northern pintail	199	21	0.2
unidentified swallow	172	6	0.2
tundra swan	168	8	0.2
ruddy duck	129	5	0.1
killdeer	74	38	0.1
brown-headed cowbird	56	16	0.1
northern shovelers	41	9	<0.1
northern harrier	31	29	<0.1
common raven	30	20	<0.1
rock dove	29	8	<0.1
blue wing teal	24	4	< 0.1
red-tailed hawk	24	20	< 0.1
gadwall	23	7	< 0.1
black tern	20	3	< 0.1
redhead	20	4	< 0.1
cliff swallow	17	12	< 0.1
American coot	16	5	< 0.1
American golden plover	13	1	< 0.1
rusty blackbird	13	2	< 0.1
canvasback	12	3	< 0.1
unidentified raptor	10	8	< 0.1
unidentified gull	9	4	< 0.1
Franklin's gull	7	1	< 0.1
hooded merganser	6	1	< 0.1
unidentified tern	4	1	< 0.1
unidentified goose	6	6	< 0.1
eastern kingbird	6	1	< 0.1
western meadowlark	5	4	< 0.1
black-bellied plover	5	2	< 0.1
blue jay	4	1	< 0.1
bobolink	4	3	< 0.1
bufflehead	4	1	< 0.1
common merganser	4	1	< 0.1
sharp-shinned hawk	4	4	< 0.1
unidentified shorebird	4	1	< 0.1
white-throated sparrow	4	4	< 0.1
grey partridge	3	2	< 0.1

Table 3. Avian species observed during spring point count surveys at the Langdon Wind Resource Area, 2007.

Species	# of Total Birds	# of Observations	Percent Composition (% of total birds observed)
mourning dove	3	2	< 0.1
American kestrel	2	2	< 0.1
northern flicker	2	2	< 0.1
ruffed grouse	2	1	< 0.1
Wilson's phalarope	2	1	< 0.1
American robin	1	1	< 0.1
bald eagle	1	1	< 0.1
black-billed magpie	1	1	< 0.1
great blue heron	1	1	< 0.1
golden eagle	1	1	< 0.1
willet	1	1	< 0.1
sharp-tailed grouse	1	1	< 0.1
Grand Total	84886	803	100%

Table 4. Mean use by taxonomic group for birds observed within 800 m of observers during spring point count surveys at the Langdon Wind Resource Area, 2007.

Taxonomic Group	Species	Mean Use (# birds/20 minutes)
Corvid	blue jay	0.02
	common raven	0.15
	group total	0.17
Gamebird	grey partridge	0.02
	ruffed grouse	0.01
	sharp-tailed grouse	<0.01
	group total	0.04
Heron/Stork/Egret	great blue heron	<0.01
	group total	<0.01
Passerine	red-winged blackbird	24.52
	barn swallow	0.27
	black-billed magpie	<0.01
	bobolink	0.02
	European starling	1.33
	American robin	<0.01
	horned lark	1.83
	cliff swallow	0.08
	brown-headed cowbird	0.28
	eastern kingbird	0.03
	rusty blackbird	0.06
	white-throated sparrow	0.02
	yellow-headed blackbird	2.95
	unidentified sparrow	288.04
	western meadowlark	0.02
	unidentified swallow	0.86
	snow bunting	23.21
group total	343.54	
Pigeons/Doves	rock dove	0.01
	mourning dove	0.01
	group total	0.02
Raptor	bald eagle	<0.01
	golden eagle	<0.01
	northern harrier	0.15
	red-tailed hawk	0.12
	American kestrel	0.01
	sharp-shinned hawk	0.02
	unidentified raptor	0.05
group total	0.37	
Shorebird	killdeer	0.37
	black tern	0.10
	unidentified tern	0.02
	Franklin's gull	0.03

Table 4. Mean use by taxonomic group for birds observed within 800 m of observers during spring point count surveys at the Langdon Wind Resource Area, 2007.		
Taxonomic Group	Species	Mean Use (# birds/20 minutes)
	unidentified gull	0.04
	golden plover	0.06
	unidentified shorebird	0.02
	willet	<0.01
	Wilson's phalarope	0.01
	black-bellied plover	0.02
	group total	0.68
Waterbird	blue-winged teal	0.12
	bufflehead	0.02
	canvasback	0.06
	common merganser	0.02
	American coot	0.08
	northern shoveler	0.20
	northern pintail	0.99
	redhead	0.10
	ruddy duck	0.64
	unidentified duck	1.88
	hooded merganser	0.03
	unidentified goose	0.03
	tundra swan	0.84
	snow goose	66.43
	gadwall	0.11
	mallard	1.52
	Canada goose	6.60
group total	79.67	
Woodpecker	northern flicker	0.01
	Group Total	0.01
All Species	Grand Total	424.56

Table 5. Frequency of occurrence for species documented during spring point count surveys at the Langdon Wind Resource Area, 2007.

Taxonomic Group	Species	Frequency of occurrence (% surveys where detected)
Corvid	blue jay	0.5
	common raven	10.0
Gamebird	grey partridge	0.1
	ruffed grouse	0.5
	sharp-tailed grouse	0.5
Heron/Stork/Egret	great blue heron	0.5
Passerine	red-winged blackbird	54.5
	barn swallow	9.0
	black-billed magpie	0.5
	bobolink	1.5
	European starling	1.5
	American robin	0.5
	horned lark	53.5
	cliff swallow	6.0
	brown-headed cowbird	8.0
	eastern kingbird	0.5
	rusty blackbird	1.0
	white-throated sparrow	2.0
	yellow-headed blackbird	14.5
	unidentified sparrow	52.0
	western meadowlark	2.0
	unidentified swallow	3.0
snow bunting	6.0	
Pigeons/Doves	rock dove	4.0
	mourning dove	1.0
Raptor	bald eagle	0.5
	golden eagle	0.5
	northern harrier	14.5
	red-tailed hawk	10.0
	American kestrel	1.0
	sharp-shinned hawk	2.0
	unidentified raptor	4.0
Shorebird/Gull	killdeer	19.0
	black tern	1.5
	unidentified tern	0.5
	Franklin's gull	0.5
	unidentified gull	2.0
	golden plover	0.5
	unidentified shorebird	0.5
	willet	0.5
	Wilson's phalarope	0.5
black-bellied plover	1.0	

Table 5. Frequency of occurrence for species documented during spring point count surveys at the Langdon Wind Resource Area, 2007.

Taxonomic Group	Species	Frequency of occurrence (% surveys where detected)
Waterbird	blue-winged teal	2.0
	bufflehead	0.5
	canvasback	1.5
	common merganser	0.5
	American coot	2.5
	northern shoveler	4.5
	northern pintail	10.5
	redhead	2.0
	ruddy duck	2.5
	unidentified duck	17.5
	hooded merganser	0.5
	unidentified goose	3.0
	tundra swan	4.0
	snow goose	5.5
	gadwall	3.5
	mallard	20.5
Canada goose	26.5	
Woodpecker	northern flicker	1.0

Table 6. Summary of avian flight height in relation to the turbine rotor swept area (RSA) during spring point count surveys at the Langdon Wind Resource Area, 2007

	Observations		Individuals	
	#	%	#	%
All Birds				
<41.5 meters (below RSA)	351	83.8	59338	83.9
41.5-118.5 meters (within RSA)	25	6.0	908	1.3
>118.5 meters (above RSA)	43	10.2	10465	14.8
Total	419	100	70711	100
Raptors				
<41.5 meters (below RSA)	35	72.9	38	76.0
41.5-118.5 meters (within RSA)	9	18.8	7	14.0
>118.5 meters (above RSA)	4	8.3	5	10.0
Total	48	100	50	100

Table 7. Avian flight height characteristics in relation to the turbine rotor swept area (RSA) for species at risk of collision at the Langdon Wind Resource Area, 2007.

Species	Exposure Risk ¹	Mean Use (# birds/20 minute survey)	% Flying	% Below RSA ²	% In RSA	% Above RSA
snow goose	2.277	66.43	79.7	20.3	4.3	75.4
Canada goose	0.370	6.6	48.8	60.9	11.5	27.6
tundra swan	0.355	0.84	100	48.8	42.3	8.9
northern pintail	0.271	0.99	67.3	47.7	40.7	11.6
northern harrier	0.026	0.15	90.3	80.7	19.3	0
unidentified duck	0.023	1.88	22.9	90.4	5.3	4.3
great blue heron	0.010	0.01	100	0	100	0
unidentified raptor	0.009	0.05	90	60	20	20
mallard	0.004	1.52	11.1	94.7	2.6	2.6
red-tailed hawk	0.002	0.12	37.5	83.3	4.2	12.5
common raven	0.000	0.15	33.3	100	0	0
golden eagle	0.000	0.01	100	100	0	0
red-winged blackbird	0.000	24.52	7.4	99.9	0	0.1
bald eagle	0.000	0.01	100	100	0	0
American robin	0.000	0.01	0	100	0	0
European starling	0.000	1.33	6.4	100	0	0
brown-headed cowbird	0.000	0.28	8.9	100	0	0
horned lark	0.000	1.83	6.3	100	0	0
blue-winged teal	0.000	0.12	4.2	4.2	0	0
mourning dove	0.000	0.01	33.3	100	0	0
rock dove	0.000	0.14	17.2	100	0	0
redhead	0.000	0.1	50	50	0	50
northern flicker	0.000	0.01	100	100	0	0
unidentified goose	0.000	0.03	16.7	100	0	0
American kestrel	0.000	0.01	50	100	0	0
sharp-shinned hawk	0.000	0.02	25	100	0	0
black tern	0.000	0.1	65	65	0	0
unidentified tern	0.000	0.02	100	100	0	0
killdeer	0.000	0.37	33.8	100	0	0
unidentified gull	0.000	0.04	33.3	88.9	0	11.1
unidentified shorebird	0.000	0.02	25	25	0	0

Table 7. Avian flight height characteristics in relation to the turbine rotor swept area (RSA) for species at risk of collision at the Langdon Wind Resource Area, 2007.

Species	Exposure Risk ¹	Mean Use (# birds/20 minute survey)	% Flying	% Below RSA ²	% In RSA	% Above RSA
barn swallow	0.000	0.27	63.6	100	0	0
back-billed magpie	0.000	0.01	100	100	0	0
bobolink	0.000	0.02	25	100	0	0
western meadowlark	0.000	25.00	60	100	0	0
cliff swallow	0.000	0.08	94.1	94.1	0	0
brown-headed cowbird	0.000	0.28	8.9	100	0	0
grey partridge	0.000	0.02	100	100	0	0
yellow-headed blackbird	0.000	2.95	0.2	100	0	0
unidentified sparrow	0.000	288	91.9	100	0	0
unidentified swallow	0.000	0.86	65.7	100	0	0
snow bunting	0.000	23.21	95	100	0	0
sharp-tailed grouse	0.000	0.01	100	100	0	0

¹ Exposure risk = % birds flying x % flying within the RSA x mean use
² Turbine rotor swept area =32-130 m above ground level (based on a turbine with an 80 m hub height and 96 m diameter blades)

Table 8. Flight directions of birds observed during spring point count surveys at the Langdon Wind Resource Area 2007.

Species	# Birds Included	# of Observations	Percent of Flights Toward Various Flight Directions								
			N	NE	E	SE	S	SW	W	NW	Variable
unidentified sparrow	52959	76	23.7	11.8	21.0	5.3	6.6		11.9	7.9	11.8
snow goose	10592	9	11.1			11.1	11.1	11.1	33.3	11.1	11.1
snow bunting	4888	14	42.9		7.1	14.3	7.1		14.3	14.3	
Canada goose	645	46	37.0	4.3	6.5	4.3	21.7	6.5	17.4	6.5	2.2
horned lark	531	33	30.3	6.1	21.2	6.1	27.3	6.1	6.1	12.1	
red-winged blackbird	361	46	21.7	4.3	19.6	4.3	15.8	6.1	19.6	4.3	4.3
tundra swan	168	15	33.3			13.3	20.0		20.0	6.7	
northern pintail	134	15	20.0	6.7	6.7	6.7	33.3	13.3	6.7	13.3	
unidentified swallow	113	4					25.0		25.0	25.0	25.0
unidentified duck	86	22	18.2	4.5	9.1	9.1	18.2	13.6	18.2		
barn swallow	35	11			9.1		27.3		9.1		54.5
mallard	34	16	25.0		12.5	6.2	37.5		12.5	12.5	6.2
northern harrier	28	26	23.1	3.8	3.8		19.2		7.7	3.8	34.6
killdeer	25	17	41.2		5.9	11.8	29.4		11.8		
European starling	17	2					50.0		50.0		
cliff swallow	16	9	11.1	11.1		11.1	11.1		33.3	11.1	32.2
black tern	13	3				33.3	33.3	33.3			
redhead	10	1			100.0						
common raven	10	9	22.2		11.1			11.1	33.3	11.1	11.1
unidentified raptor	9	8	12.5			25.0	12.5				50.0
red-tailed hawk	9	10	40.0				10.0				50.0
brown-headed cowbird	5	4	50.0						25.0	25.0	
rock dove	5	3	66.7		33.3						
unidentified tern	4	1								100.0	
unidentified gull	3	3	33.3		66.7						
western meadowlark	3	2	50.0		50.0						
grey partridge	3	2					50.0			50.0	
northern flicker	2	2	50.0						50.0		
bald eagle	1	1	100.0								
golden eagle	1	1	100.0								
blue-winged teal	1	1						100.0			
mourning dove	1	1							100.0		

Table 8. Flight directions of birds observed during spring point count surveys at the Langdon Wind Resource Area 2007.

Species	# Birds Included	# of Observations	Percent of Flights Toward Various Flight Directions									
			N	NE	E	SE	S	SW	W	NW	Variable	
unidentified goose	1	1							100.0			
American kestrel	1	1			100							
sharp-shinned hawk	1	1										
great blue heron	1	1			100.0							
unidentified shorebird	1	1										
back-billed magpie	1	1								100.0		
bobolink	1	1						100.0				
yellow-headed blackbird	1	1								100.0		
sharp-tailed grouse	1	1								100.0		
Percent of Total Birds Flying in Each Direction			25.9	4.6	12.8	8.5	14.4	3.8	11.5	8.2	10.3	
Grand Total	70711	417										

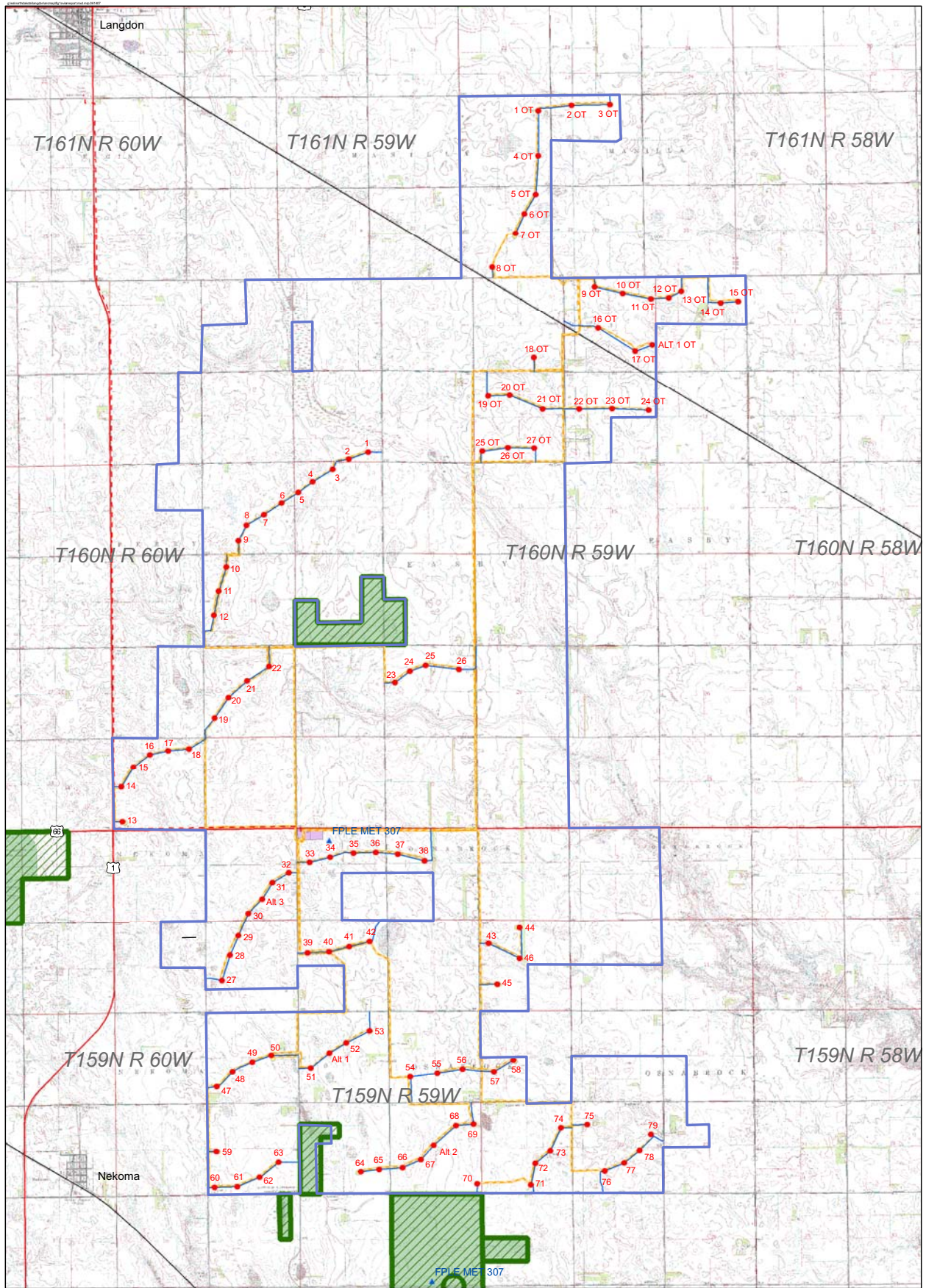
Table 9. Incidental observations of birds not seen at observation points within the Langdon Wind Resource Area, 2007.

Species	Number
semipalmated plover	11
lesser yellowlegs	8
unidentified diver	2
blue jay	1
yellow warbler	1
Total	23

Table 10. Comparison of mean use at the Langdon Wind Resource Area to existing WRA (estimates standardized to #/20-minute survey).

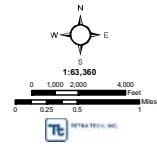
Project site	Mean Use(spring surveys unless otherwise indicated)		Estimate Basis	Reference
	Raptors	Other Birds		
Montezuma Hills, CA	6.72 (annual average)	474 (mostly unidentified blackbirds)	1.5* use/20 min	Kerlinger et al. (2005)
Altamont Pass WEC, CA	3.20 (annual average)	N/A	1.5*use/20 min	Orloff and Flannery (1992)
Cotterel Mountain, ID	2.54	14.29	1.5*use/20 min	BLM (2005)
Klickitat County PEIS study area, WA	1.43	23.01	1.5*Use/20 min	Johnson et al. (2007)
Windy Point, WA	1.19	25.75	1.5*Use/20 min	Johnson et al. (2007)
Buffalo Ridge WEC, MN	0.96-1.26 (various areas)	N/A	1.5*use/20 min	Erickson et al. (2002)
Stateline Wind Project, OR-WA	0.88	10.64	1.5*use/20 min	West, Inc. (2004)
Foote Creek WEC, WY	0.73	N/A	0.75*use/40 min	Johnson et al. (2000b)
Klondike, OR	0.70	N/A	1.5*use/20 min	Erickson et al. (2002)
Wild Horse, WA	0.68(Fall-summer)	8.63	Use/30 min	Erickson et al. (2003)
Condon, OR	0.52	7.14	1.5*use/20 min	URS Corporation et al. (2001)
Biglow Canyon, OR project site and reference area	0.47	15.18	Use/30 min	WEST, Inc. (2005)
	0.54	10.09		
Maiden, WA	0.44	6.83	Use/30 min	Young et al. (2002)
Langdon Wind Energy Center, ND	0.36	424.1	use/20 min	This Study

FIGURES



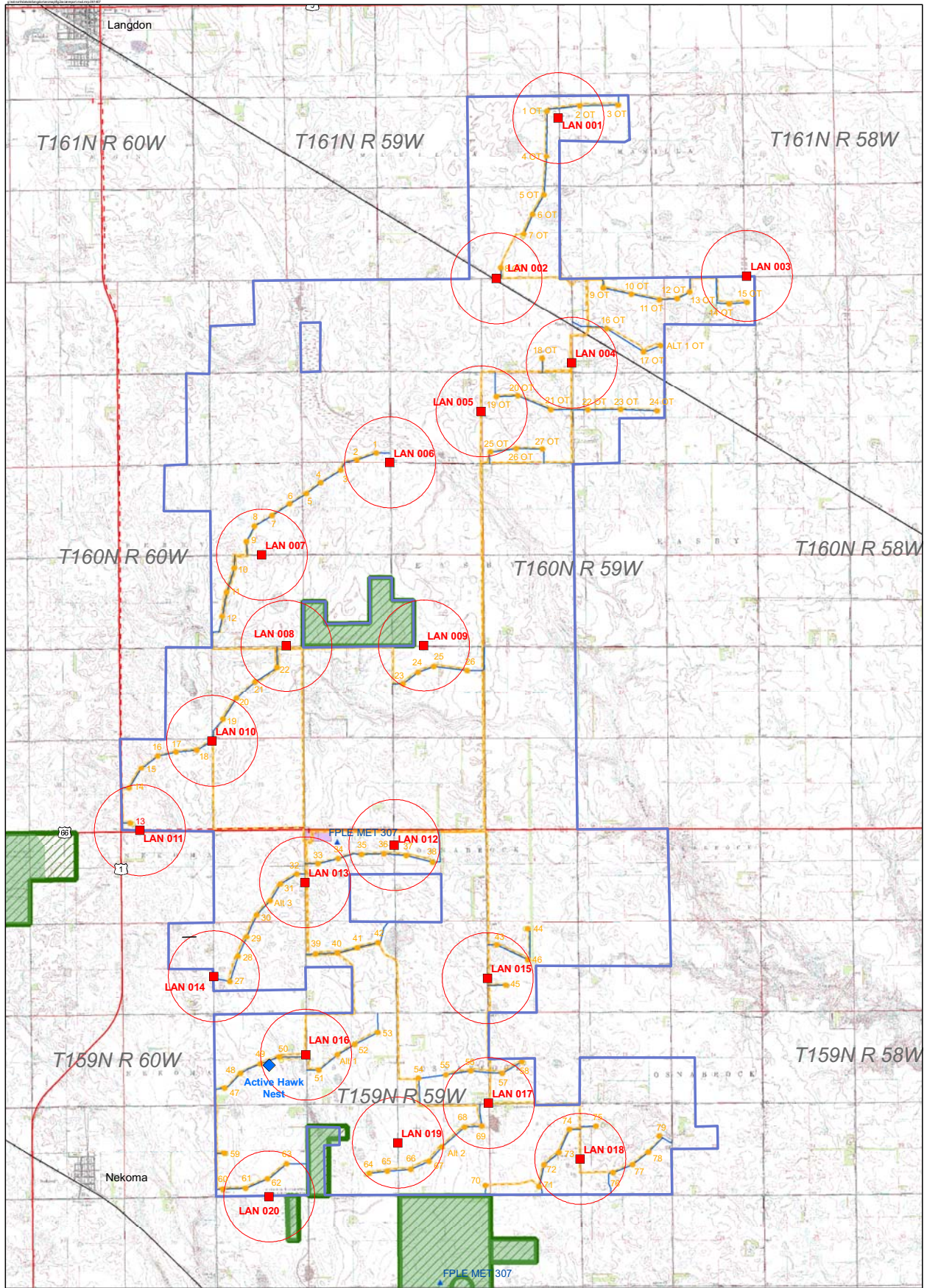
Grid: NAD 83 UTM Zone 14N meters

June 2007



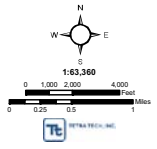
- Turbine Locations 050807
- ▲ MET Locations 041607
- Service Roads 050807
- Collectors 050807
- - - Transmission Line 050807
- Substation O&M Laydown 050807
- Turnaround (250' dia.)
- Approximate Project Area
- Waterfowl Production Areas
- Wetland Easements

Figure 1
Project Area Location Map
 Langdon Wind Energy Center
 Cavalier County, North Dakota



Grid NAD 83 UTM Zone 14N meters

June 2007



- Turbine Locations 050807
- ▲ MET Locations 041607
- Avian Point Count Location
- ◆ Active Hawk Nest
- 800 Meter Survey Plot
- Service Roads 050807
- - - Collectors 050807
- - - Transmission Line 050807
- Substation O&M Layout 050807
- Turnaround (250' dia.)
- Langdon WPA-WE Areas
- Wetland Easements

Figure 2
Avian Survey Location Map
 Langdon Wind Energy Center
 Cavalier County, North Dakota

APPENDIX A
AVIAN POINT COUNT SURVEY PROTOCOL

AVIAN POINT COUNT SURVEY PROTOCOL APPENDIX A

PROTOCOL

The following sections present the methodology for conducting pre-construction avian point count surveys.

1.1 Observation Points

Avian observation points were selected based on the proposed number and spacing of wind turbines and habitat (i.e., visibility). Point count surveys of large circular plots were conducted to provide baseline information on both resident and migratory avian species within the WRA during the spring. Survey points were located near turbine strings (if their locations were known), and distributed throughout the Wind Resource Area, but also covered nearby wetlands and open water areas that could attract waterfowl, water-associated birds, eagles, and cranes. The radius of each circular plot was 800 meters. Birds observed beyond 800 meters were recorded, but not included in the site use calculations for comparison to other sites.

1.2 Sampling Frequency, Duration, and Intensity

A qualified biologist conducted observations for 20 minutes at each observation point; all birds observed were recorded. Species observed, number of birds (single or in a flock), flight height range, flight direction, habitat, distance from observer at closest approach, and activity was recorded to determine how species were using the Wind Resource Area. This sampling strategy gives an assessment of the overall use of the Wind Resource Area by birds, as well as details on the specific locations of birds relative to topographic features and turbine locations. Environmental conditions (weather/visibility, temperature, precipitation, and wind speed) were recorded at each observation point.

Bird flight heights were summarized by percent of observations to quantify the location of birds in the Wind Resource Area relative rotor swept area.

Wildlife observed while on the Wind Resource Area but not during a 30-minute observation session was recorded as incidental observations, and used to supplement the data.

APPENDIX B
EXAMPLE DATA SHEET

Avian Point Count Data Sheet

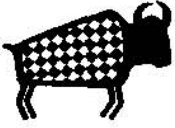
Avian Observation Data Sheet (Fixed Point and Instantaneous Count)

Date (mmddyy) _____		Observer (init.) _____		Start Time _____	End Time _____	Point No. _____
Weather Visibility (circle one):		Good Fair Poor		Precipitation (circle): It rain, heavy rain, snow		Page ___ of ___
Wind: Direction From: (circle one):		N NE E SE S SW W NW n/a		Speed Low High	(kph/mph) (circle one)	
Precipitation (circle one)		none light rain rain snow sleet hail other				

Obs #	Species Code	Sex	Age	# of ind.	Dist. (m) from obs. 1st closest	Activity			Flight Dirn (to)	Flight Height (m)			Habitat			Ins. Count (5, 10, 15, 20 min)	Aud?	10-min obs per.	Notes
	Time					PE	SO	FL		1st	low	high	BR	F	SG				
1						PE	SO	FL				BR	F	SG	5 10 15 20 25 30		1 2 3		
		CS	HU	OT				AG	DI	OT									
2						PE	SO	FL				BR	F	SG	5 10 15 20 25 30		1 2 3		
		CS	HU	OT				AG	DI	OT									
3						PE	SO	FL				BR	F	SG	5 10 15 20 25 30		1 2 3		
		CS	HU	OT				AG	DI	OT									
4						PE	SO	FL				BR	F	SG	5 10 15 20 25 30		1 2 3		
		CS	HU	OT				AG	DI	OT									
5						PE	SO	FL				BR	F	SG	5 10 15 20 25 30		1 2 3		
		CS	HU	OT				AG	DI	OT									
6						PE	SO	FL				BR	F	SG	5 10 15 20 25 30		1 2 3		
		CS	HU	OT				AG	DI	OT									
7						PE	SO	FL				BR	F	SG	5 10 15 20 25 30		1 2 3		
		CS	HU	OT				AG	DI	OT									
8						PE	SO	FL				BR	F	SG	5 10 15 20 25 30		1 2 3		
		CS	HU	OT				AG	DI	OT									
9						PE	SO	FL				BR	F	SG	5 10 15 20 25 30		1 2 3		
		CS	HU	OT				AG	DI	OT									
10						PE	SO	FL				BR	F	SG	5 10 15 20 25 30		1 2 3		
		CS	HU	OT				AG	DI	OT									

APPENDIX D.3

Langdon Wind Farm File Search



MAC

Metcalf Archaeological Consultants, Inc.

Tracey Martorano, P.E.
Tetra Tech EC, Inc.
133 Federal Street, 6th Floor
Boston, MA 02110

January 4, 2006

RE: Langdon Windfarm Files Search

Ms. Martorano,

Metcalf Archaeological Consultants conducted a search of the State Historical Society of North Dakota's site and manuscript files for the proposed Langdon wind turbine farm for Tetra Tech EC, Inc. on behalf of FPL Energy. The results of that search are provided on the accompanying tables and maps.

The search revealed that there have been few investigations in the area. There have been nine inventories, seven archaeological and two architectural. The two architectural surveys included a church survey which addressed only architectural sites and the Langdon Urban Survey which dealt only with architectural properties within the city of Langdon. Of the seven archaeological surveys, two were conducted for proposed waterlines and five for highway-related improvements. The archaeological surveys are linear in nature and often included disturbed highway right-of-way ditches. Due to the limited nature of the surveys conducted, it is not surprising there are no archaeological sites and only a single prehistoric isolated find on file for the project area. Among the approximately 150 historic sites, most are architectural (businesses and residences) in the city of Langdon. In addition there are five site leads for abandoned post offices, of which most lack maps or other more precise locational data.

The lack of sites is at least partly a reflection of the limited archaeological surveys conducted in the area. There have not been enough surveys in the area to allow for site prediction. However, the South Branch of the Park River is the only good source of potable water in the area, and most prehistoric sites should be concentrated along the margins of that river. Our best estimation is that there will be far fewer sites to avoid in Cavalier County than at the Oliver County wind turbine locations. As this project apparently has Public Service Commission/North Dakota State Historic Preservation Office oversight a Class III inventory of the proposed turbine blocks, access roads, collector lines and transmission lines would most likely be recommended. We would suggest following essentially the same scope of work as was followed for the Oliver II Windfarm (i.e., 200' corridors, 500' X 500' blocks, and 600'x 700' blocks at array ends).

We hope this search is helpful in your planning for the proposed wind farm. Should you have any questions or comments please do not hesitate to call our Bismarck office.

Ed Stine
Staff Archaeologist

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Eagle, CO 81631
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FAX: (701) 258-7156
P.O. Box 2154
Bismarck, ND 58502
e-mail: macnodak@metcalfarchaeology.com

Cavalier County Windfarm Files Search

Township/Range-Sec	SITS #	NRHP Status	Site Type & Description	Recorder, Date	MS #
Not Eligible=NE; Unevaluated Eligibility=U; Potentially Eligible=PE					
158/58-6	no sites				4928
158/59-1	no sites				4928
158/59-2	no sites				4928
158/59-3	32WAx148	U	Historical-Kinloss Post Office	REAP, 1978	4928
158/59-4	no sites				4928
158/59-5	no sites				4928
158/59-6	no sites				4928
158/60-1	no sites				4928
158/60-2	no sites				4928
159/58-6	no sites				4556, 8428
159-58-7	no sites/no surveys				
159/58-18	no sites/no surveys				
159/58-19	no sites/no surveys				
159/58-30	no sites/no surveys				
159/58-31	32CVx4	U	Historical-Gertrude Post Office	REAP, 1978	4928
159/59-1	32CV76	NE	Architectural-grain bin	Persinger, 1988	4556, 8428
	32CVx66	NE	Archaeological-projectile point	Persinger, 1988	

Cavalier County Windfarm Files Search

Township/Range-Sec	SITS #	NRHP Status	Site Type & Description	Recorder, Date	MS #
Not Eligible=NE; Unevaluated Eligibility=U; Potentially Eligible=PE					
159/59-2	32CV111	NE	Architectural-bridge	Hufstetler et al, 2000	4556, 8428
159/59-3	32CV111	NE	Architectural-bridge	Hufstetler et al, 2000	8428
159/59-4	no sites				8428
159/59-5	no sites				4556, 8428
159/59-6	no sites				4556, 8428
159/59-7	no sites				4556, 4928
159/59-8	no sites/no surveys				
159/59-9	no sites/no surveys				
159/59-10	no sites/no surveys				
159/59-11	no sites/no surveys				
159/59-12	no sites				8160
159/59-13	no sites/no surveys				
159/59-14	no sites/no surveys				
159/59-15	no sites/no surveys				
159/59-16	no sites/no surveys				
159/59-17	no sites/no surveys				
159/59-18	no sites/no surveys				

Cavalier County Windfarm Files Search

Township/Range-Sec	SITS #	NRHP Status	Site Type & Description	Recorder, Date	MS #
Not Eligible=NE; Unevaluated Eligibility=U; Potentially Eligible=PE					
159/59-19	no sites/no surveys				
159/59-20	no sites/no surveys				
159/59-21	no sites/no surveys				
159/59-22	no sites/no surveys				
159/59-23	32CV16	NE	Architectural-Lutheran Church Steeple	Vyzralek, 1985	5945
	32CVx5	U	Architectural-Soper Post Office	REAP, 1978	
159/59-24	no sites/no surveys				
159/59-25	no sites/no surveys				
159/59-26	no sites/no surveys				
159/59-27	no sites/no surveys				
159/59-28	no sites/no surveys				
159/59-29	no sites/no surveys				
159/59-30	no sites/no surveys				
159/59-31	no sites/no surveys				
159/59-32	no sites/no surveys				
159/59-33	no sites/no surveys				
159/59-34	no sites/no surveys				

Cavalier County Windfarm Files Search					
Township/Range-Sec	SITS #	NRHP Status	Site Type & Description	Recorder, Date	MS #
Not Eligible=NE; Unevaluated Eligibility=U; Potentially Eligible=PE					
159/59-35	no sites/no surveys				
159/59-36	no sites/no surveys				
159/60-1	no sites				8428
159/60-2	no sites				4928, 8428, 9597
159/60-3	no sites				4928, 9597
159/60-10	no sites				4928, 9597
159/60-11	no sites				4928, 9597
159/60-12	no sites/no surveys				
159/60-13	no sites/no surveys				
159/60-14	32CVx6	U	Historical-Polar Post Office	Benson, 1980	4928
159/60-15	32CV113	PE	Architectural-Army Safeguard Complex	Schleisman, 2002	4928, 9597
159/60-23	no sites/no surveys				
159/60-24	no sites/no surveys				
159/60-25	no sites/no surveys				
159/60-26	no sites				4928
159/60-35	no sites/no surveys				

Cavalier County Windfarm Files Search

Township/Range-Sec	SITS #	NRHP Status	Site Type & Description	Recorder, Date	MS #
Not Eligible=NE; Unevaluated Eligibility=U; Potentially Eligible=PE					
159/60-36	no sites/no surveys				
160/58-6	no sites				4556
160/58-7	no sites/no surveys				
160/58-18	no sites/no surveys				
160/58-19	no sites				4556
160/58-30	no sites/no surveys				
160/58-31	no sites				8428
160/59-1	no sites/no surveys				
160/59-2	no sites/no surveys				
160/59-3	32CVx15	U	Historical-Easby Post Office, cultural material scatter, depression, and foundation	Benson, 1980	4556
160/59-4	32CVx15	U	Historical-Easby Prost Office, cultural material scatter, depression, and foundation	Benson, 1980	
160/59-5	no sites/no surveys				
160/59-6	no sites/no surveys				
160/59-7	no sites				4556
160/59-8	no sites				4556
160/59-9	no sites				4556

Cavalier County Windfarm Files Search

Township/Range-Sec	SITS #	NRHP Status	Site Type & Description	Recorder, Date	MS #
Not Eligible=NE; Unevaluated Eligibility=U; Potentially Eligible=PE					
160/59-10	no sites				4556
160/59-11	no sites				4556
160/59-12	no sites/no surveys				
160/59-13	no sites/no surveys				
160/59-14	no sites/no surveys				
160/59-15	no sites				4556
160/59-16	no sites/no surveys				
160/59-17	no sites/no surveys				
160/59-18	no sites/no surveys				
160/59-19	no sites/no surveys				
160/59-20	no sites				4556
160/59-21	no sites/no surveys				
160/59-22	no sites				4556
160/59-23	no sites				4556
160/59-24	no sites				4556
160/59-25	no sites/no surveys				
160/59-26	no sites/no surveys				

Cavalier County Windfarm Files Search					
Township/Range-Sec	SITS #	NRHP Status	Site Type & Description	Recorder, Date	MS #
Not Eligible=NE; Unevaluated Eligibility=U; Potentially Eligible=PE					
160/59-27	no sites				4556
160/59-28	no sites				4556
160/59-29	no sites				4556
160/59-30	no sites/no surveys				
160/59-31	no sites				8428
160/59-32	32CV75	NE	Architectural-building	Persinger, 1988	4556, 8428
160/59-33	no sites				4556, 8428
160/59-34	no sites				8428
160/59-35	no sites				8428
160/59-36	no sites				8428
160/60-1	no sites				4556
160/60-2	no sites				4556, 4928, 9597
160/60-3	no sites				4556, 4928, 9597
160/60-4	no sites				4556
160/60-9	no sites/no surveys				
160/60-10	no sites/no surveys				

Cavalier County Windfarm Files Search					
Township/Range-Sec	SITS #	NRHP Status	Site Type & Description	Recorder, Date	MS #
Not Eligible=NE; Unevaluated Eligibility=U; Potentially Eligible=PE					
160/60-11	no sites/no surveys				
160/60-12	32CV74	NE	Architectural-granary	Persinger, 1988	
160/60-13	no sites/no surveys				
160/60-14	no sites/no surveys				
160/60-15	no sites/no surveys				
160/60-16	no sites/no surveys				
160/60-21	no sites/no surveys				
160/60-22	no sites				4928, 9597
160/60-23	no sites				4928, 9597
160/60-24	no sites				4928
160/60-25	no sites/no surveys				
160/60-26	no sites				4928, 9597
160/60-27	no sites				4928, 9597
160/60-28	no sites/no surveys				
160/60-34	no sites				4928, 9597
160/60-35	no sites				8428, 9597
160/60-36	no sites				8428

Cavalier County Windfarm Files Search

Township/Range-Sec	SITS #	NRHP Status	Site Type & Description	Recorder, Date	MS #
Not Eligible=NE; Unevaluated Eligibility=U; Potentially Eligible=PE					
161/58-29			no sites/no surveys		
161/58-30			no sites/no surveys		
161/58-31			no sites/no surveys		
161/58-32			no sites/no surveys		
161/59-19			no sites		4556, 9596
161/59-20			no sites		9596
161/59-21			no sites		9596
161/59-22			no sites		9596
161/59-23			no sites		9596
161/59-24			no sites		9596
161/59-25			no sites/no surveys		
161/59-26			no sites/no surveys		
161/59-27			no sites/no surveys		
161/59-28			no sites/no surveys		
161/59-29			no sites		4556
161/59-30			no sites		4556
161/59-31			no sites/no surveys		

Cavalier County Windfarm Files Search

Township/Range-Sec	SITS #	NRHP Status	Site Type & Description	Recorder, Date	MS #
Not Eligible=NE; Unevaluated Eligibility=U; Potentially Eligible=PE					
161/59-32	no sites/no surveys				
161/59-33	no sites/no surveys				
161/59-34	no sites/no surveys				
161/59-35	no sites/no surveys				
161/59-36	no sites/no surveys				
161/60-22	no sites				4556, 6449, 9596
161/60-23	32CV105	NE	Architectural-culvert	Hafermehl, 2005	4283, 4928, 5945, 9596, 9597
	32CV57-32CV58, 32CV62, 32CV85,	U	Architectural-Langdon Urban Surveys		
	32CV121	U	Historical-railroad crossing, metal, wood, masonry	Bleier, 2005	
	32CV402-32CV433, 32CV438-32CV439, 32CV441, 32CV443, 32CV450, 32CV452-32CV454, 32CV456, 32CV459, 32CV487, 32CV489-32CV498, 32CV502-32CV547, 32CV558-32CV579, 32CV602-32CV619, 32CV632-32CV645, 32CV660-32CV661, 32CV692	U	Architectural-Langdon Urban Surveys		

Cavalier County Windfarm Files Search

Township/Range-Sec	SITS #	NRHP Status	Site Type & Description	Recorder, Date	MS #
Not Eligible=NE; Unevaluated Eligibility=U; Potentially Eligible=PE					
161/60-24	32CV105	NE	Architectural-culvert	Hafermehl, 2005	4928, 9596, 9597
	32CV85	U	Architectural-Langdon Urban Survey		
	32CV121	U	Historical-railroad crossing, metal, wood, masonry	Bleier, 2005	
	32CV124	U	Historical- Lebanon Cemetery, graves, wood, masonry, metal	Klinner, 2005	
	32CV434, 32CV485-32CV486, 32CV695	U	Architectural-Langdon Urban Survey		
161/60-25	no sites				4928, 9597
161/60-26	no sites				4928, 9597
161/60-27	no sites/no surveys				
161/60-34	no sites/no surveys				
161/60-35	no sites/no surveys				4928, 9597
161/60-36	no sites/no surveys				4928, 9597

Manuscript List	
MS #	Reference
4283	Granger, S. and S. Kelly 1987 Final Report of the Langdon Inventory Project North Dakota Cultural Resources Survey 1986-1987, Cavalier County, North Dakota
4556	Schweigert, K., et al. 1988 A Cultural Resource Survey of a Proposed Rural Water System in Cavalier, Walsh and Pembina Counties, North Dakota
4928	Schweigert, K. and R. Persinger 1990 Langdon Rural Water Users Phase II Cultural Resource Inventory Cavalier, Pembina, Ramsey & Walsh Counties North Dakota - Final Report Volumes II & III - Also Phase II, Parts 1 & 2
5945	Vyzralek, F. 1985 Report of an Architectural and Photographic Survey of Churches in Cavalier, Dickey, Cass, Trail, Grand Forks, Nelson, Ramsey, Walsh, and Pembina, Counties in Nine Eastern North Dakota Counties
6449	Borchert, J. 1995 North Dakota Department of Transportation Safety Project Cultural Resource Review 1992-1994
8160	Kinney, W. 2002 A Class III Cultural Resource Inventory of a Cavalier County Bridge Project. NDDOT Project No. BRO-10(013) and Addendum
8428	Nienow, J. and K. Breakey 2002 Class III Cultural Resources Inventory Between Highway 1 and Milton (SS-3-066(016)078) on Both Sides of Highway 66, Cavalier County, North Dakota
9596	Klinner, D. 2006 Highway 5 Improvements, NH-3-005(0030278 (PCN16345): A Class III Cultural Resource Inventory, Cavalier County, North Dakota
9597	Bleier, A. and L. Hafermehl 2006 Highway 1 from Nekoma to Langdon: A Class III Cultural Resource Inventory in Cavalier County, North Dakota

APPENDIX D.4

Langdon Wind Energy Center Phase II: A Class II and Class III Cultural Resource Inventory in Cavalier County, North Dakota

**Langdon Wind Energy Center Phase II:
A Class II and Class III Cultural Resource Inventory in
Cavalier County, North Dakota**

Prepared for:
Tetra Tech EC, Inc.
Boston, Massachusetts

On behalf of:
Langdon Wind, LLC

NDSHPO #07-400

Principal Investigator:
Ed Stine

Prepared by Ed Stine and Aaron Barth
Metcalf Archaeological Consultants, Inc.
Bismarck, North Dakota

November 2007

Abstract

Tetra Tech EC, Inc., on behalf of Langdon Wind LLC, contracted Metcalf Archaeological Consultants, Inc. to conduct a Class II and Class III cultural resource inventory for a proposed wind farm expansion (Langdon Wind Energy Center Phase II) in Cavalier County, North Dakota. The North Dakota Public Service Commission is the lead regulatory agency for this project.

The project is within portions of the following sections:

- T. 159 N., R. 59 W., sections 2, 3, 4, 10, 11, & 29;
- T. 159 N., R. 60 W., sections 2, 10, & 11;
- T. 160 N., R. 59 W., sections 7, 8, 28, 29, 32, 33, & 34;
- T. 160 N., R. 60 W., sections 13 & 14.

The project involved a Class III inventory of all of the proposed turbine locations and access corridors between the turbines. Two 650 foot by 650 foot MET tower blocks were also inventoried at a Class III level and a third was visited at a Class II level. This was accomplished using pedestrian transects to cover a 200 foot corridor. The 200 foot wide corridor would be expanded to a 500 foot by 500 foot block at any turbine location where, in the archaeologist's professional opinion, such expansion was warranted. Four such expansions were conducted for this project. The remainder of the project routes were covered with a Class II windshield survey. In all, 270 acres were covered by Class III inventory. Between October 17 and October 20, 2007, the inventory was conducted by Ed Stine, serving as Principal Investigator, Aaron Barth, Brett Ewald, Naomi Rintoul, and Garrett Williams.

The inventory resulted in the documentation of two prehistoric isolated finds, MAC-LWF-01 and MAC-LWF-02. The isolates consist of a Swan River flake and a grooved maul. A National Register eligible site 32CV113, the Stanley R. Mickelsen Army Safeguard Complex, is located approximately 1.1 miles to the southeast of the nearest proposed turbine. The pyramid within the National Register eligible Safeguard Complex site is 1.3 miles distant from the turbine.

The isolates are recommended as not eligible for the National Register. Any turbine or other tall structure within several miles of the pyramid would modify the viewshed of the site. The same issue arose during planning for the first phase of the Langdon Wind Energy Center and based on discussions with the Army and North Dakota State Historic Preservation personnel, Langdon Wind LLC submitted a mitigation plan to the State Historic Preservation Office and the Army which assisted in the development of an interpretive system to improve the preservation efforts of site 32CV113, the Nekoma Pyramid. The turbines for the current (Phase II) project are further removed from the pyramid than those from the first phase.

Introduction

Tetra Tech EC, Inc., on behalf of Langdon Wind LLC contracted Metcalf Archaeological Consultants, Inc. (MAC) to conduct a Class II and Class III cultural resource inventory for a proposed wind turbine farm expansion. The North Dakota Public Service Commission is the lead regulatory agency for this project. This project was inventoried to locate any cultural resources within the area of potential effect, fulfilling the policies implementing the National Historic Preservation Act (NHPA [Public Law 89-665]) as amended. An additional goal was to allow the client to plan construction so as to avoid any cultural resources or mitigate the effects on any resources.

The proposed wind farm is located east of Highway 1 between the communities of Langdon and Nekoma in Cavalier County, North Dakota. In all 14.3 miles of access road/collector line corridor between or associated with the proposed wind turbines were inventoried. A Class II windshield survey was conducted along approximately 4.9 miles (34%) of the corridor. Approximately 9.4 miles (66%) of 200 foot wide corridor was inventoried at a Class III level, with pedestrian transects spaced at 20 meter intervals. In addition two 650 foot by 650 foot blocks for proposed MET tower locations and four 500 foot by 500 foot blocks centered on the proposed turbine locations were also inventoried. In all a total of 270 acres were surveyed.

Project Location

The project is depicted on USGS 7.5' Easby (1972), Nekoma (1972), Osnabrock (1972) and Osnabrock SW (1972) quadrangle maps (Appendix A). It is located in portions of the following legal sections:

- T. 159 N., R. 59 W., sections 2, 3, 4, 10, 11, & 29;
- T. 159 N., R. 60 W., sections 2, 10, & 11;
- T. 160 N., R. 59 W., sections 7, 8, 28, 29, 32, 33, & 34;
- T. 160 N., R. 60 W., sections 13 & 14.

Project Setting

The majority of the project is located in the Northern Red River Study Unit (Unit # 9) as defined in *The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component* (SHSND 1990: 9.1-9.43). The southwest portion of the project is in the Sheyenne River Study Unit (Unit #12) but the description of the archaeology and physiography provided in Unit 9 is applicable to the project area as a whole. The project is in the Glaciated Plains within the Central Lowlands described as rolling, glaciated landscape with more than 80% gently sloping, also referred to as Drift Prairie with deep glacier deposits (Bluemle 1991: 4-5). The project area is gently rolling to flat with subdued topographical relief (Appendix B).

Portions of the project area are subject to spring flooding and a number of small swales are present across the area. The principal drainage is the South Branch Park River. The Park River is a tributary of the Pembina River which drains into the Red River near the Park River/Pembina River

confluence. The river was not flowing at the time of the inventory and it is, here in its upper reach, a seasonal drainage.

All but a small portion of the project area immediately adjacent to the South Branch Park River has either been plowed or has been impacted by road construction with ground surface visibility excellent at 40 to nearly 80%. Ground surface visibility in the native prairie, adjacent to the river was 5 to 25%. Visibility was aided by mammal back dirt piles, cattle trails and two track roads. Soils consist of fairly deep (~50 cm) black silt loam over glacial till. Because the area is virtually all in crop land there is little native vegetation remaining. Where present the prairie consisted of mixed grasses, buck brush, assorted forbs, along with marsh species of grasses in the various sloughs and large swales. Area fauna includes white tail deer, jack and cotton tail rabbits, small predators such as fox and coyote, along with numerous waterfowl and upland game birds. Prior to large scale Euro-American settlement, bison would have been plentiful and would have been regularly exploited by Native populations.

Files Search

Between December 4, 2006 and January 4, 2007, MAC conducted a Class I inventory for the project area. At that time plans were preliminary and a larger area than currently under consideration was covered (162 sections). The files search revealed one prehistoric isolated find, 32CVx66 (a projectile point) with the remaining properties consisting of bridges, churches, residences and post office site leads. The previously recorded site 32CV113, Army Safeguard Complex, is the only documented site revealed by the files search that is eligible for the National Register. While it is out of the project area proper, there will be some modification to the viewshed of the site. The location of this site as depicted in the current site form is incorrect and an updated site form has been submitted. There have been nine previous investigations in the area. An urban survey of Langdon (MS #4283) accounts for the majority of the recorded historic sites for private residences, while a church survey (MS #5945) accounts for the churches on record. A second search of the files revealed that there has been no additional investigations beyond that conducted by MAC for the Langdon Wind Energy Center (Phase I) in the spring of 2007. The complete results of the files search are depicted on the project maps in Appendix A and are provided in tabular form in Appendix C.

Field Methods

The inventory was conducted between October 17 and October 20, 2007, by Ed Stine, serving as Principal Investigator, Aaron Barth, Brett Ewald, Naomi Rintoul, and Garrett Williams. Prior to conducting the field work Ed Stine met with Paul Picha, North Dakota State Historic Preservation Office Chief archaeologist, to discuss the project. At that meeting it was agreed that the same combination Class II and Class III inventory as had been used for the Phase I inventory would be employed. The turbine locations were located using a GPS unit. The majority of the corridor was adjacent to roads or visible between turbine stakes and was easily followed in any case. The inventory was accomplished using parallel zig-zag pedestrian transects spaced at 20 meter intervals along the corridor between the proposed wind turbines. A 200 foot wide corridor was inventoried in segments totaling 9.4 miles. The Class III inventory revealed that the overall area has low potential for archaeological sites (i.e., no sites were encountered). Where roads allowed access

to access/collector/transmission line corridors a Class II windshield survey was conducted.

When an artifact was encountered the location was marked with a pin flag and the surrounding area was closely examined for the presence of additional artifacts or features. For this project a location with five or fewer artifacts and no features was identified as an isolated find. The threshold for a site was six or more artifacts or the presence of a feature. After the location was thoroughly examined the appropriate forms were filled out, the area was photographed, and the location was mapped with the aid of a GPS unit. During the inventory field notes were maintained, representative electronic photographs were taken, and maps were generated with the aid of a GPS unit. Copies of the field notes, electronic photo images, maps and forms are on file at the MAC Bismarck office.

Results

The Class III inventory covered 9.4 miles (66%) of the overall project corridor, four (500 by 500 foot) turbine blocks and two (650 by 650 foot) MET Tower blocks. In all, 270 acres were covered at a Class III level. Two prehistoric isolated finds, MAC-LWF-01 and MAC-LWF-02, were documented. An historic site, the Safeguard Complex (32CV113) is located approximately 1.1 miles southeast of the nearest proposed wind turbine and out of the project area proper. The pyramid within the complex is 1.3 miles from that proposed turbine. Background research on the site was conducted during the initial Phase I inventory and is repeated due to the site's National Register eligible status and potential viewshed issues.

MAC-LWF-01

Map: Figure 6, Appendix A page A-7

This isolated find was encountered approximately 350 meters west of turbine T26. The location is in a flat, cultivated field. Area ground surface visibility was approximately 50% at the time of the inventory. The isolate consists of one tertiary Swan River chert flake. It is not temporally diagnostic. The isolate is recommended as not eligible for the National Register of Historic Places and no avoidance is recommended.

MAC-LWF-02

Map: Figure 6, Appendix A page A-7

This isolated find consists of a grooved maul approximately 180 meters northeast of T24. The isolate is outside of the project corridor and was observed while crossing to a parked vehicle. It was recorded as a good faith effort. It is in a flat cultivated field with approximately 50% ground surface visibility. It is approximately 15 centimeters in length and is made from a dark gray granitic/basalt cobble. The isolate is recommended as not eligible for the National Register and is out of the project area at any rate. No further investigation or avoidance is recommended.

This National Register eligible site, the Safeguard Complex, is outside of the project area proper but the proposed Phase I wind farm turbines (the nearest being T47) are approximately 0.80 miles or greater to the east but within the viewshed of the pyramid, the principal component of the site. The nearest Phase II turbine is T2 and it is over one mile distant. The site location depicted in the original site form was incorrect and an updated site form reflecting a more accurate location has been filed as part of the Phase I investigations. Following is a history of the Safeguard Complex, also known as the Nekoma Missile Site Radar, based on Mills (forthcoming) and Hafermehl (1993).

As described in Chapter 8 of David Mills, “Cold War in a Cold Land: Fighting Communism on the Northern Great Plains” (Fargo, North Dakota State University: forthcoming dissertation, 2008), the Nekoma Missile Site Radar (MSR) was designed and constructed to track the targets that the Perimeter Acquisition Radar in Langdon, North Dakota, was unable to engage. In addition to its significance in American military history, the construction of this site altered the environmental, socio-economic and political norms around Nekoma.

Environmentally, a need to supply water to the construction workers and eventual military staff was realized in the early stages of the project. Ultimately, twenty-six miles of piping brought water to the site and surrounding area from the Tiber Reservoir. In the socio-economic sense, as workers poured into the area, local retailers made adjustments to best accommodate the population influx. Mills says some retailers were accused of price-gouging the workers, but Colonel Roy Beatty, the Commander of the site area, said he “detected no escalation in price trends” from local businesses. Politically, local, state and federal politicians responded to complaints and problems that the workers and residents around the site encountered. The politicians also acted as intermediaries between Washington, D.C., and the region around Nekoma.

The Safeguard Complex that the Nekoma MSR was connected with received initial operational status on April 1, 1975, and full operational status on September 28, 1975. The United States Congress deemed the Safeguard Complex obsolete after realizing that the Soviets could overwhelm the military installation with a large-scale attack. On October 2, 1975, the House voted to deactivate the system, the decision based largely on the monetary costs needed to maintain a site with limited effectiveness. By February 10, 1976, the Joint Chiefs of Staff ordered that the Safeguard Complex be terminated entirely. By the time of abandonment, the site cost approximately five billion dollars, and was operational for less than five months.

Justification of Significance

This site meets the National Register of Historic Places Criteria A and C and although the site remains less than fifty years old, it is eligible for the National Register of Historic Places under Criteria Consideration G, as a Post World War II Property defined as *A military installation [of] exceptionally important because of its contribution to the Cold War arms race.*

This unique site is associated with events that significantly contributed to the broad missile defense patterns that characterized a component in the history of the Cold War in North Dakota, America, and internationally, thus making it eligible under Criterion A. In addition to the socio-economic impact brought on by the construction of the Nekoma MSR, the site is associated with local, state and federal politicians. These individuals were significant in shaping the American past. The concrete pyramid and adjoining structures remain a distinct and highly visible characteristic of the landscape around Nekoma, especially considering the comparatively flat physiography of the northern Plains. As noted by Louis Hafermehl on August 11, 1993, since the site was the only one of its kind ever built, it is the only one which contains the physical features and traits of its type. The Missile Site Control Building (the concrete pyramid) measures approximately 123 feet and three inches in height, and has a total of four floors. Active or not, the structure and architecture itself symbolize the anti-nuclear defense technology of the 1970s making it eligible under Criterion C.

The complex has lost integrity, in varying degrees, of design, materials, and workmanship. Many (at least 15) buildings in poor condition on the complex have been destroyed, altered or removed from the location including both domestic and defense structures. All of the defense structures were stripped of the technological aspects of the defense system with the missile silos sealed and abandoned between 1975 and 1977 (ETC, 1992). The setting and location was modified somewhat by that project, however, the defense structure's placement on the ground was chosen for radar coverage concerns and not aesthetics or associations with the surrounding landscape. The feeling and association of this site, while having diminished integrity, still embody the historic sense of the Cold War era, expressed in both structure and technology.

The proposed wind turbines will be visible from the Nekoma MSR, but they will not negatively impact or affect the structural or historical integrity of the site to the degree that it would no longer be eligible for the National Register. The feeling, setting, and association integrity of this site will not be greatly diminished as the surrounding landscape did not contribute to the physical placement of the complex. The nearest Phase II turbine is 1.3 miles northwest of the pyramid and the nearest Phase I wind tower lies approximately 0.8 miles east of the pyramid. There is some reduction in the site's dominance of the skyline if one travels from the north to the south along Highway 1. The highway bends around the structure to the west creating a front focal point as one approaches the site from the north. The wind turbines will be east and north of this view when 1.5 miles north of the site and will not impact the visual effect of this imposing structure. While the turbines will be more visible as one approaches the site from the south, the site's viewshed will be modified at a distance. The closer one travels to the site, the more physically dominant the site becomes. At the closest vantage point to the site from the highway, lying west less than a quarter mile from the complex, little surrounding landscape is visible. Thus, minimal negative modification of the site's viewshed will result from this project. Since the site's eligibility pertains to its importance in historical events and structural integrity, the viewshed modification to the site will not affect its eligibility status. None-the-less there will be an effect on the viewshed. The turbines, with the blades at vertical, are 381 feet high and the pyramid is 123 feet high. A mitigation plan was developed in consultation with the Army and North Dakota State Historic Preservation Office.

Recommendations

The isolates MAC-LWF-01 and MAC-LWF-02 are recommended as not eligible for the National Register. The proposed wind farm will minimally modify the viewshed of one National Register eligible historic property, 32CV113. The principal component of site 32CV113, the pyramid, is well over one mile from the nearest Phase II turbine and while it's viewshed will be modified, the modification will not greatly reduce the feeling or association of the site. None-the-less there will be an impact. Based on discussions with the Army and NDSHPO personnel during the Phase I portion of the wind farm, Langdon Wind LLC submitted a mitigation plan to SHPO and the Army which will assist in the development of an interpretive system to improve the preservation efforts of the Nekoma Pyramid and associated Safeguard Complex (32CV113). This mitigation plan will help to resolve the potential adverse effect to the site viewshed.

References Cited or Consulted

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1991 *The Face of North Dakota Revised Edition* (Educational Series 21)
North Dakota Geological Survey, Bismarck, North Dakota

Earth Technology Corporation, The (ETC)

1992 *Historic Context for Properties, Located on the Stanley R. Mickelsen Safeguard Complex and Considered Potentially Eligible for Listing on the National Register of Historic Places.*
Prepared by Earth Technology Corporation, Huntsville, Alabama, for US Army Space and Strategic Defense Command, Huntsville, Alabama. MS#6447.

Hafermehl, Louis, “Cold War Sites – NR Eligibility of the Safeguard Site” (1993: manuscript in possession of the author).

Mills, David, “Cold War in a Cold Land: Fighting Communism on the Northern Great Plains” (Fargo, North Dakota State University: forthcoming dissertation, 2008).

State Historical Society of North Dakota (SHSND)

1990 *The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component*, Archeology and Historic Preservation Division, State Historical Society of North Dakota, Bismarck, North Dakota.

Appendix A:
Project Area Maps

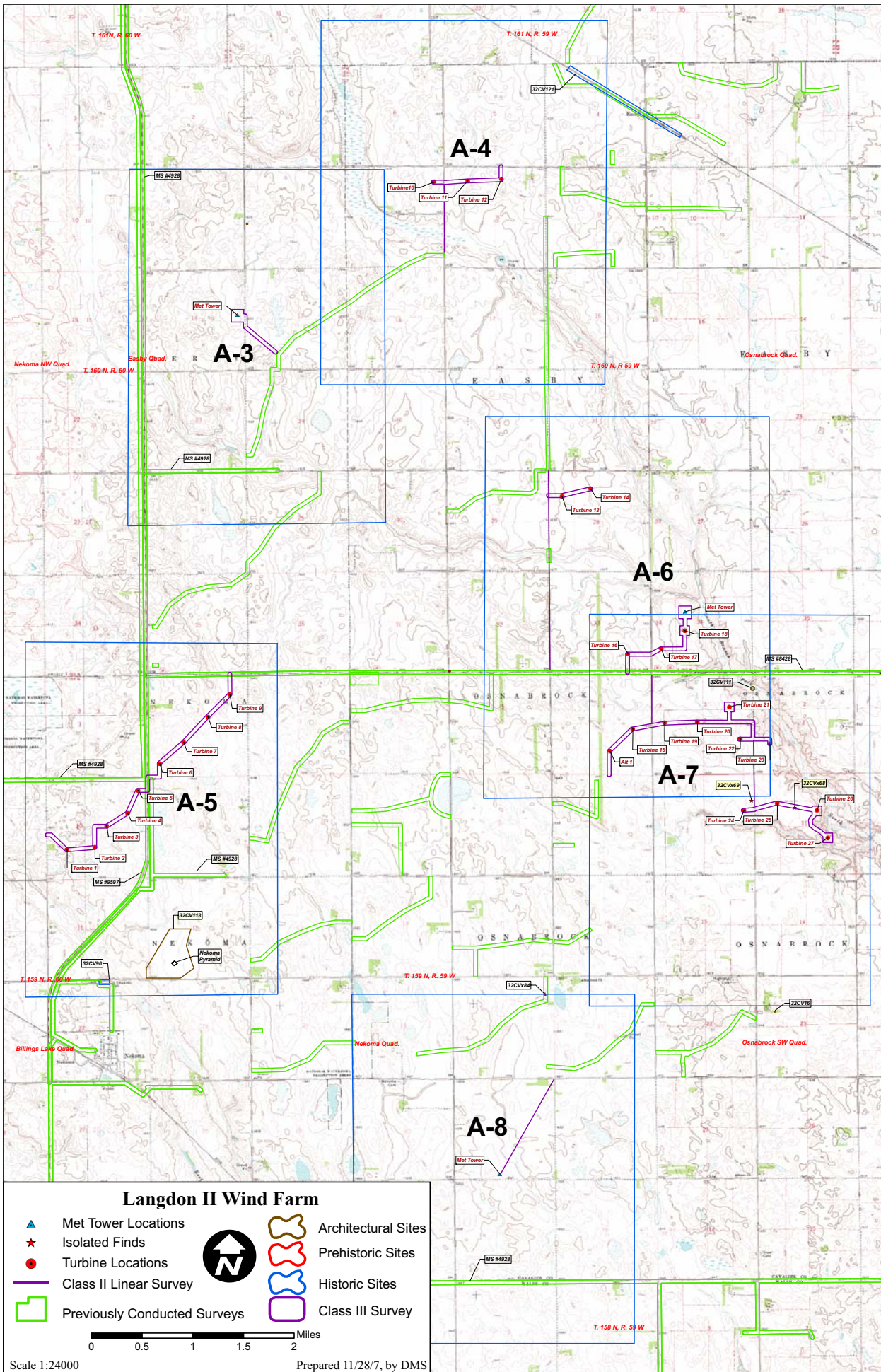


Figure 1: Overview of the proposed project areas as depicted on the USGS 7.5' Nekoma NW (1972), Easby (1972), Osnabrock (1972), Billings Lake (1972), Nekoma (1972), and Osnabrock SW (1972) quadrangle maps.

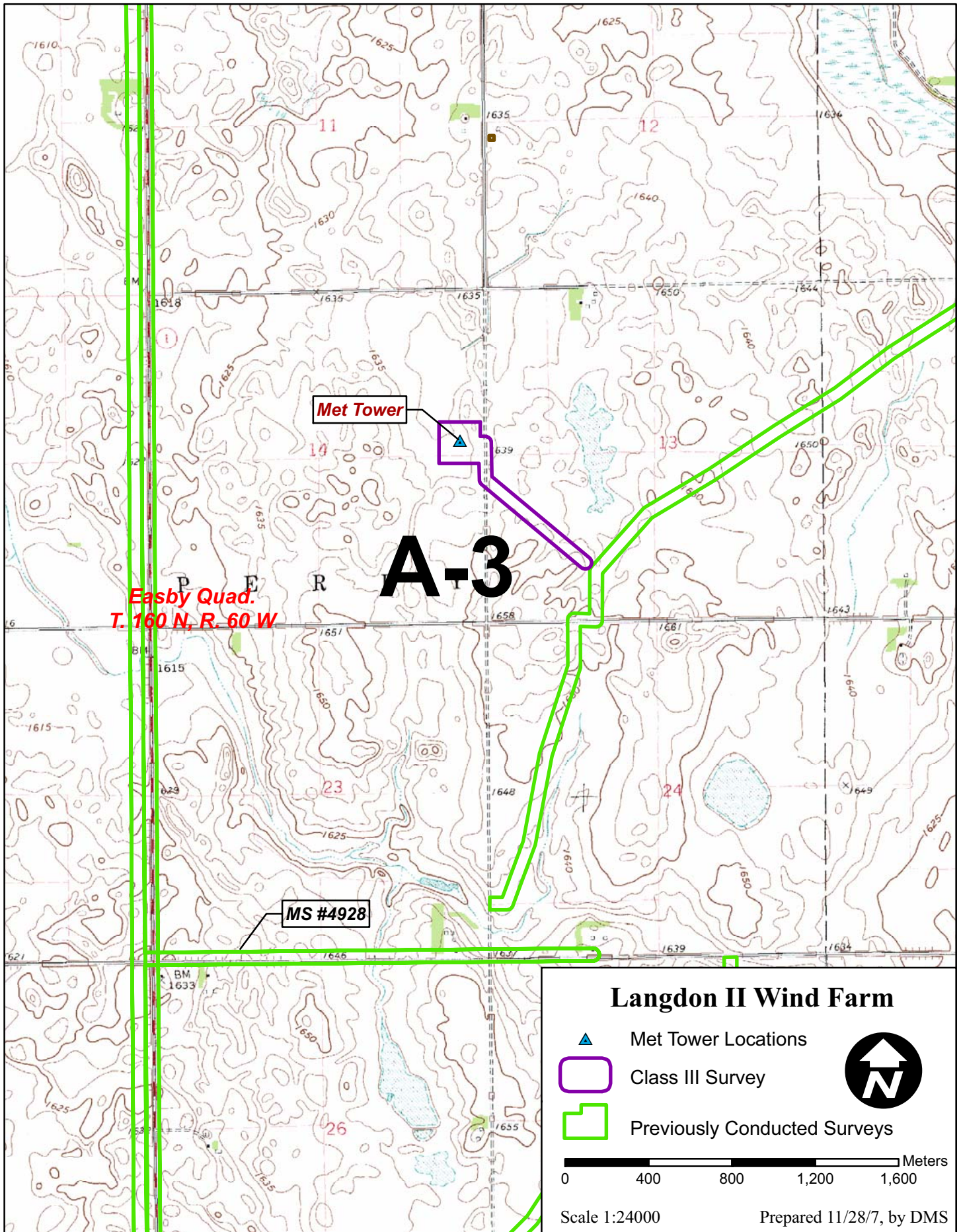


Figure 2: Overview of the proposed project area and previously conducted surveys as depicted on the USGS 7.5' Easby (1972) quadrangle map.

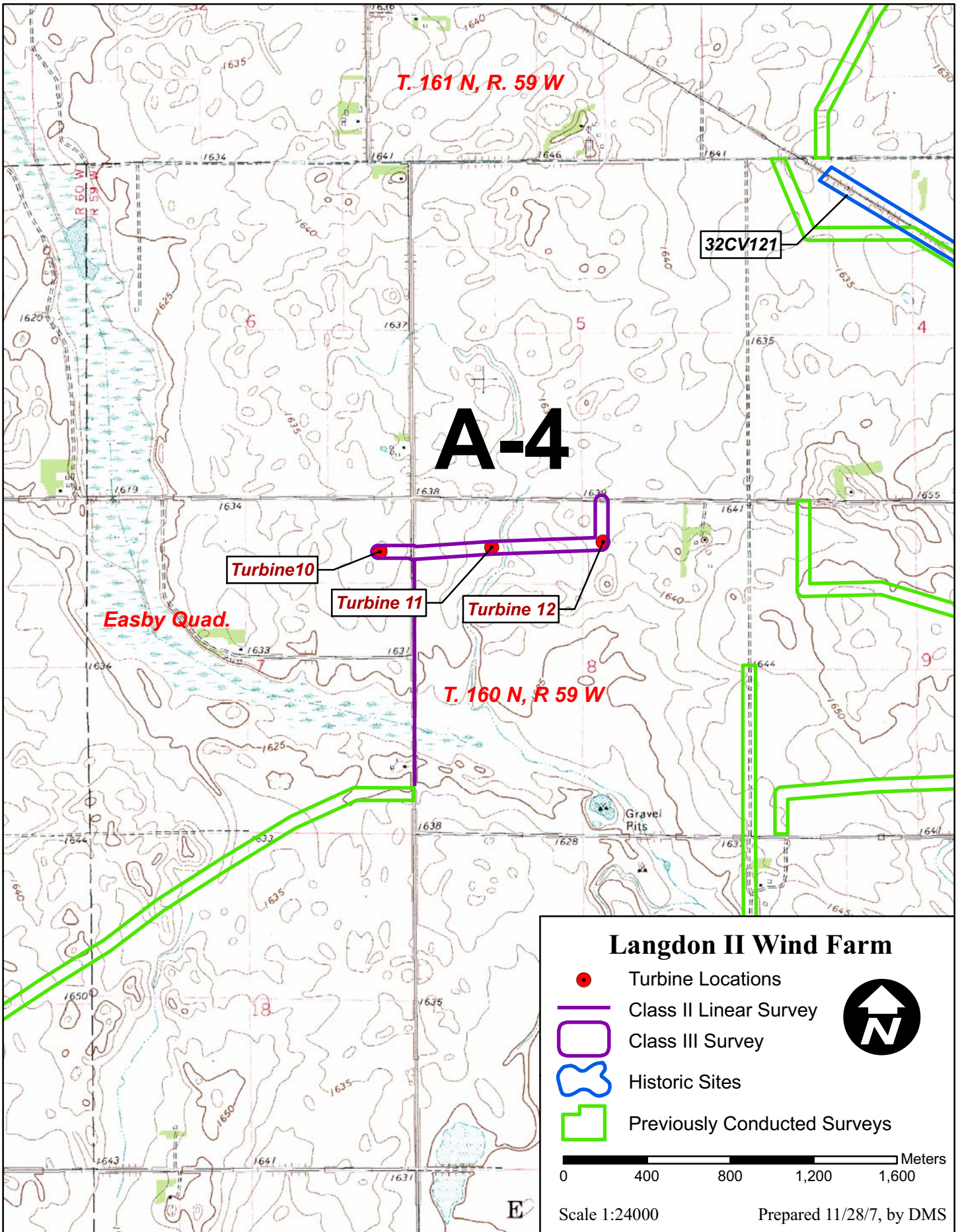


Figure 3: Overview of the proposed project area, previously recorded sites, and previously conducted surveys as depicted on the USGS 7.5' Easby (1972) quadrangle map.

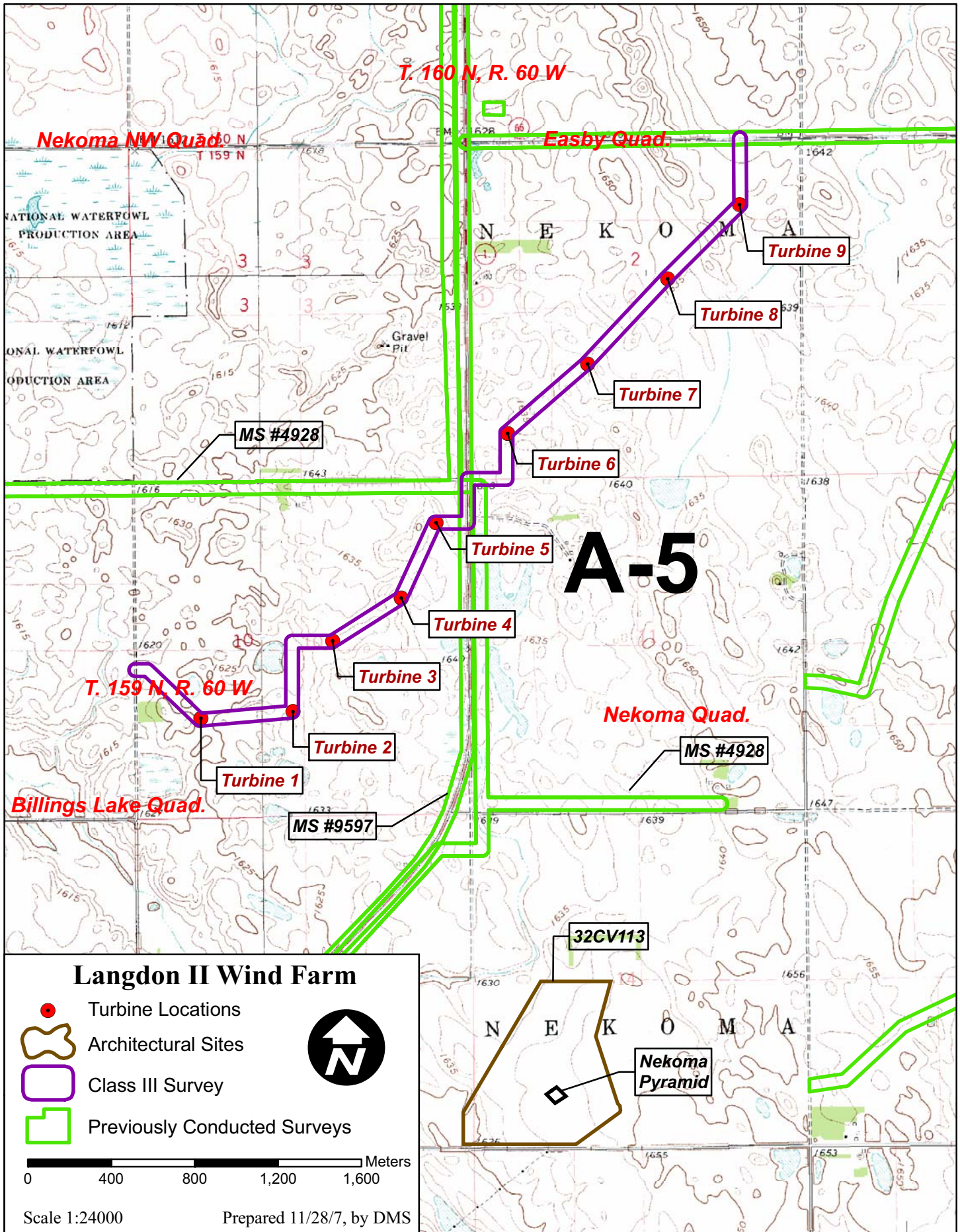


Figure 4: Overview of the proposed project area, previously recorded sites, and previously conducted surveys as depicted on the USGS 7.5' Easby (1972), Billings Lake (1972), and Nekoma (1972) quadrangle map.

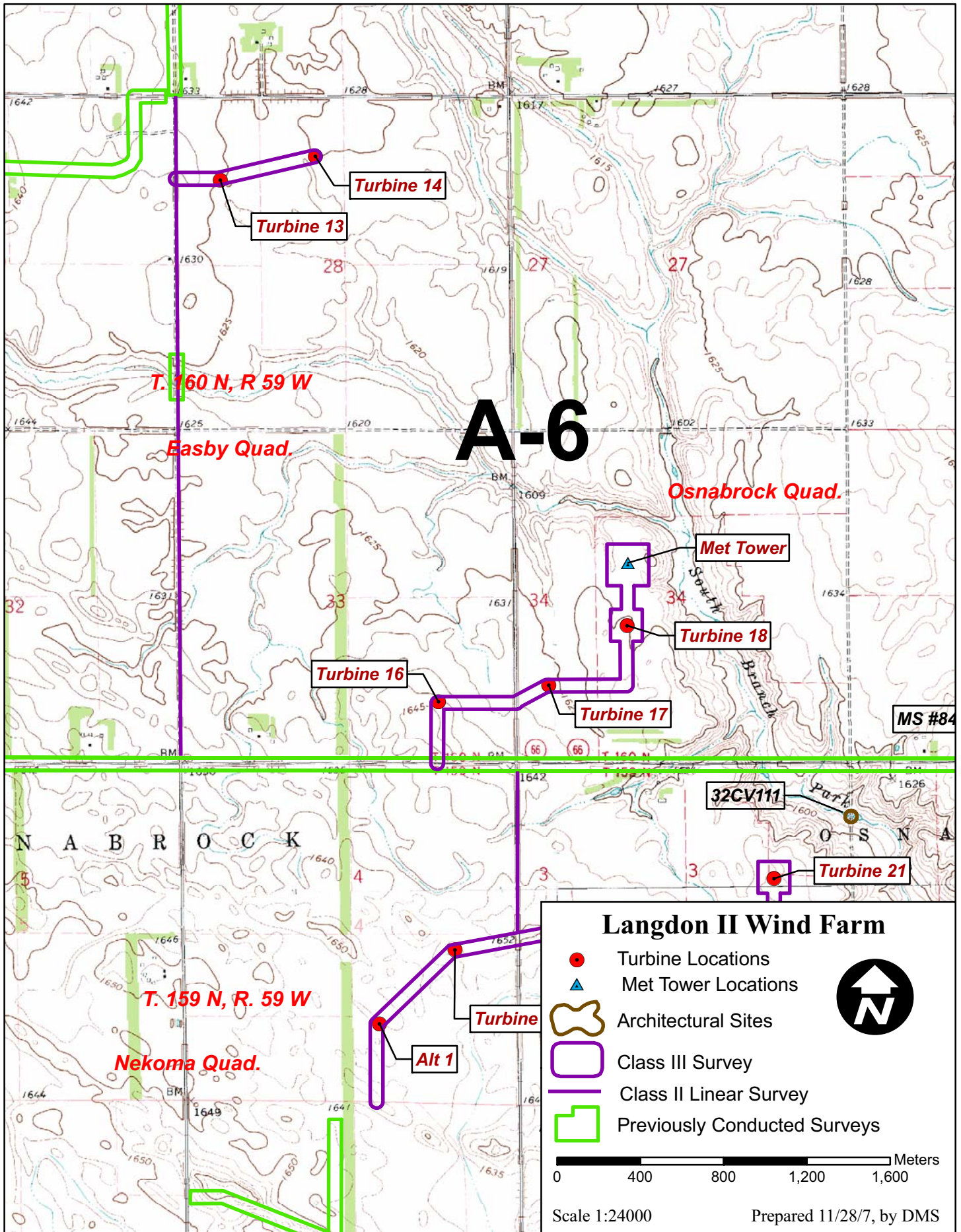


Figure 5: Overview of the proposed project area, previously recorded sites, and previously conducted surveys as depicted on the USGS 7.5' Easby (1972), and Osnabrock (1972) quadrangle maps.

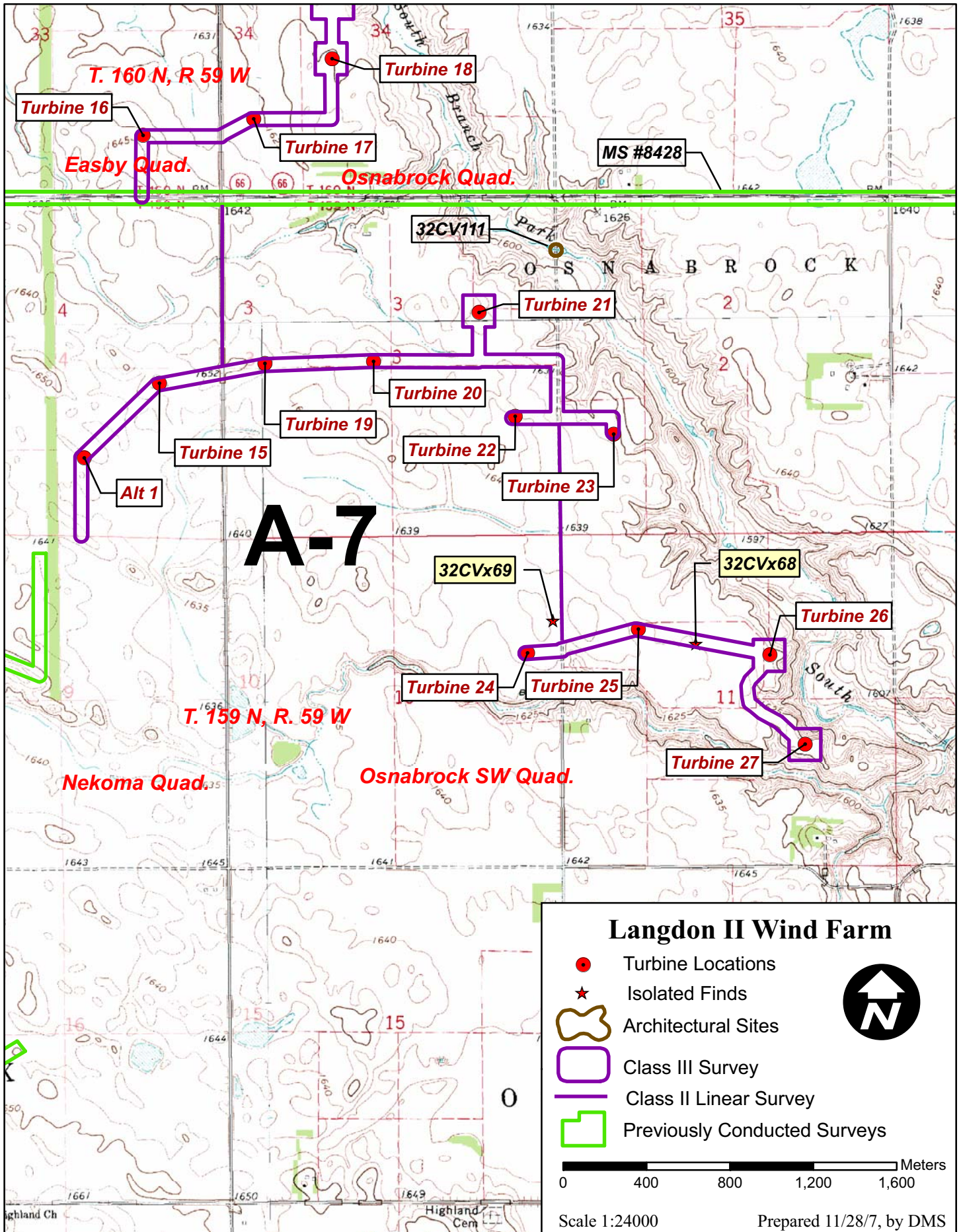


Figure 6: Overview of the proposed project area, previously recorded sites, and previously conducted surveys as depicted on the USGS 7.5' Easby (1972), Osnabrock (1972), Osnabrock SW (1972) quadrangle maps.

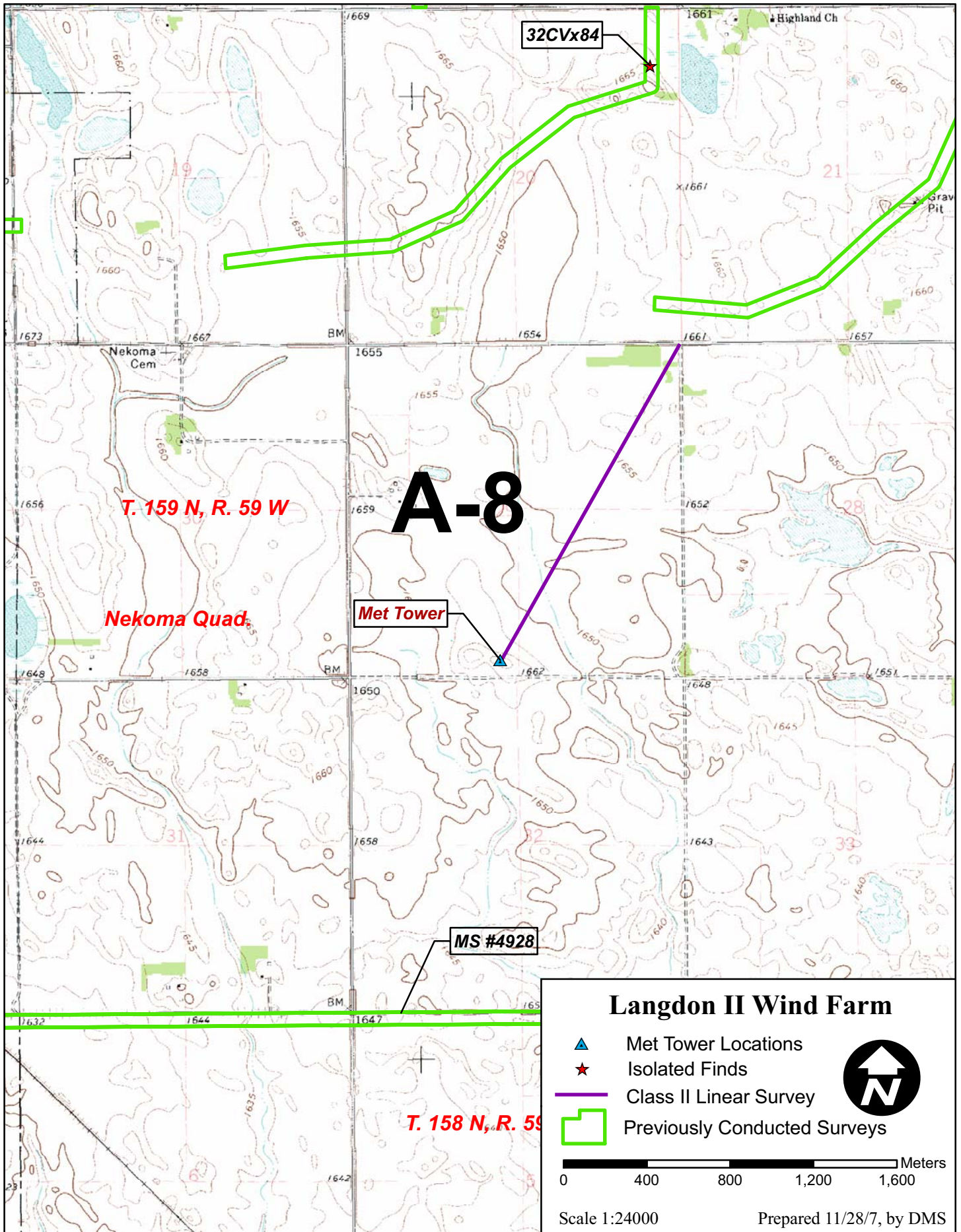


Figure 7: Overview of the proposed project area, previously recorded isolated find, and previously conducted surveys as depicted on the USGS 7.5' Nekoma (1972) quadrangle map.

APPENDIX D.5

Plan to Mitigate Adverse Effects of Langdon Wind Farm, Cavalier County, North Dakota on Site 32CV113 (Safeguard Complex)

Langdon Wind, LLC

817 3rd St
Suite 106
Langdon, ND 58249
(701) 256-3298

July 16, 2007

Mr. Merlan E. Paaverud, Jr.
Director, State Historical Society of North Dakota and
State Historic Preservation Office (North Dakota)
612 East Boulevard Avenue
Bismark, ND 58505-0830

NDSHPO Ref: 07-0400a Tetra Tech/Langdon Wind Farm, Cavalier County, North Dakota, Class II and III CRI Report with Recommendations

Dear Mr. Paaverud,

We have received your letter of review for the report entitled "Langdon Wind Energy Center Class II and III Cultural Resource Inventory in Cavalier County, North Dakota" prepared by Metcalf Archaeological Consultants in June 2007. One issue of concern noted in this letter states that the NDCRS distance from Turbine T47 to the Nekoma Pyramid (32CV113-Safeguard Complex) is closer than identified in our report. We will revise this document updating the 32CV113 NDCRS information to state that the structure is 0.75 miles west of proposed T47 and we will resubmit the report to your office.

We have, as you know, discussed this project frequently with various stakeholders in the local community and have consistently received their enthusiastic support for the wind farm. Two of our most consistent supporters are the Army staff in charge of the base realignment and closure (BRAC) and the Cavalier County Jobs Development Authority.

We would like to propose a mitigation plan, as recommended by Ms. Quinnell that targets public interpretation of the site. Our plan is to provide funding to assist in the development of an interpretive kiosk, or an alternative means for public interpretation as determine appropriate by the local stakeholders for the Nekoma Pyramid. Per ND SHPO's request, the stakeholders who will receive this funding will submit all developed interpretive information for review to ND SHPO and the caretaker of the site before publishing.

With this mitigation plan in place, Langdon Wind, LLC understands that ND SHPO will provide an expedited concurrence letter of "*No Adverse Effect*" or "*No Historic Properties Affected*". Should you have any questions or concerns, please call me at (561) 691-7240.

Sincerely,


Scott Scovill

cc: William J. O'Donnell, II (Program Manager, Dept of the Army)
Tracey Martorano, (Project Manager, Tetra Tech)

**PLAN TO MITIGATE ADVERSE EFFECTS OF
LANGDON WIND FARM, CAVALIER COUNTY, NORTH DAKOTA
ON SITE 32CV113 (SAFEGUARD COMPLEX)**

SITE 32CV113 (SAFEGUARD COMPLEX)

Site 32CV113, Safeguard Complex, also known as the Stanley R. Nicholson Safeguard Site, is located in Cavalier County, North Dakota (Figure 1). One component, the Missile Site Radar (MSR) complex, was located 12 miles south of Langdon, North Dakota. The 470-acre MSR site contained the shorter-range missile control radar and almost half of the Safeguard system's defensive Spartan and Sprint missiles. The MSR construction was completed in 1974 and it was deactivated by about 1976 (Lonnquest and Winkler 1996). Attachment 1 contains a description of the Safeguard Site extracted from Lonnquest and Winkler 1996. The MSR is the only anti-ballistic missile (ABM) system actually constructed in the United States. The site has been determined eligible for listing in the National Register of Historic Places (NRHP) under Criteria A and C and under Criteria Consideration G, as a Post World War II Property defined as a military installation exceptionally important because of its contribution to the Cold War arms race (Metcalf Archaeological Consultants 2007).

PROPOSED PROJECT DESCRIPTION

Langdon Wind, LLC ("Langdon Wind") has applied to the North Dakota Public Service Commission for a Certificate of Site Compatibility (Certificate) to construct the Langdon Wind Energy Center (the Project). The Project is located in Cavalier County, North Dakota (Figures 1 and 2), and would be approximately 159 megawatts (MW) in size, consisting of up to 106 wind turbine generators. Langdon Wind will own 79 General Electric (GE) 1.5 MW turbines totaling 118.5 MW. Otter Tail Power Company (OTP) will own 27 GE 1.5 MW turbines totaling 40.5 MW. Associated facilities include a Project substation, operations and maintenance facilities, up to four meteorological towers, a construction lay-down area, access roads, above and/or below ground electrical collection system(s) and cabling, and an approximate eleven-mile 115 kilovolt (kV) transmission line.

Proposed turbine T47 will be located approximately 0.75-miles east of the Nekoma Pyramid, a prominent element at the Safeguard Complex. The proposed project will be visible from the historic property and it has been determined by ND SHPO that the Langdon Wind Energy Center will result in an adverse effect on the Safeguard Complex.

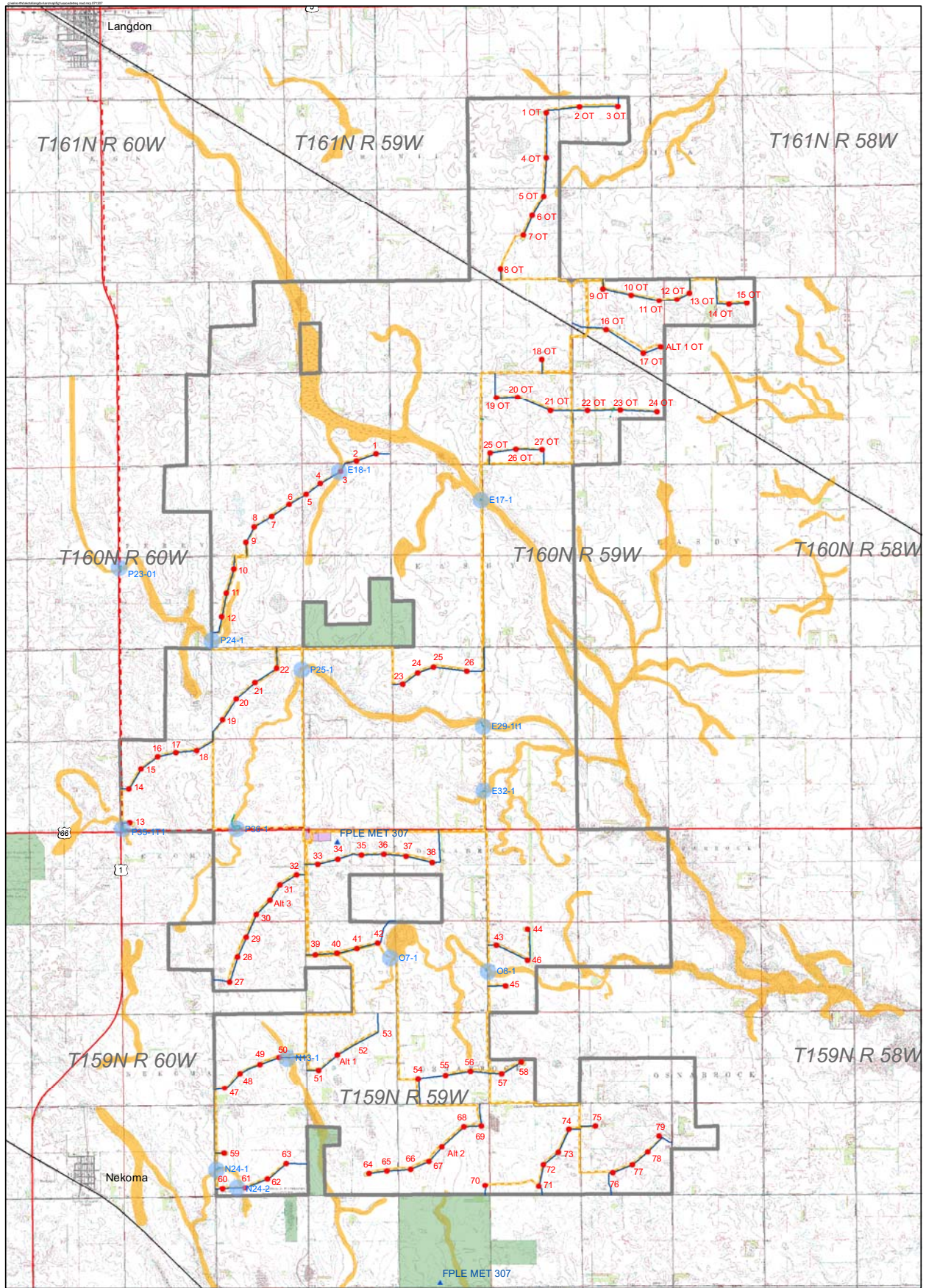
MITIGATION PLAN

The proposed project turbines will stand approximately 118.5 meters from ground to blade tip. Recognizing that methods of visual screening such as planting trees or placing physical barriers that will block a view (e.g. a fence) will not be successful in mitigating visual impacts to this historic site, Langdon Wind proposes an alternative form of mitigation. Langdon Wind proposes to provide mitigation funds not to exceed \$20,000 to the Cavalier County Job Development Authority for interpretive services of the Safeguard Complex. Langdon Wind's consultation with SHPO staff, BRAC Army staff, and local stakeholders, including the Cavalier County Jobs Development Authority, has indicated that public interpretation of the Safeguard Complex is a common priority. The money provided by Langdon Wind will benefit the local community by enabling the stakeholders to work with SHPO to develop an appropriate method of public interpretation, such as a development of a historical information kiosk in a publicly accessible location. Langdon Wind understands a condition to the mitigation will require that the resulting interpretive displays, brochures, or other items, will be presented to SHPO for approval prior to their installation or distribution.

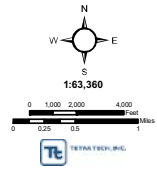
REFERENCES CITED

Lonnquest, John C. and David F. Winkler. 1996. *To Defend and Deter: The Legacy of the United States Cold War Missile Program*. USACERL Special Report 97/01, November 1996. A study sponsored by the Department of Defense Legacy Resource Management Program Cold War Project.

Metcalf Archaeological Consultants, Inc. 2007. *Langdon Wind Energy Center: A Class II and Class III Cultural Resource Inventory in Cavalier County, North Dakota*. Prepared for Tetra Tech EC, Inc. Boston Massachusetts. NDSHPO #07-400.



July 2007



- Turbine Location
- MET Location
- Crossings (Jurisdictional)
- Wetland GPS Lines
- Service Roads
- - - Underground Collector
- - - Transmission Line
- Substation O&M Laydown Area
- Turnaround (250' dia.)
- Approximate Project Area
- Langdon WPA-WE Area
- Jurisdictional Wetland

Figure 1
Langdon Wind Energy Center
Cavalier County, North Dakota

ATTACHMENT 1

**ANTIBALLISTIC MISSILES (ABM): THE SAFEGUARD SYSTEM
EXCERPTED FROM *TO DEFEND AND DETER: THE LEGACY OF THE UNITED STATES
COLD WAR MISSILE PROGRAM*, LONNQUEST AND WINKER 1996. USACERL SPECIAL
REPORT 97/01**

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
26 FEDERAL PLAZA
NEW YORK, N.Y. 10278-0090

TO DEFEND AND DETER:
THE LEGACY OF
THE UNITED STATES
COLD WAR MISSILE PROGRAM

JOHN C. LONNQUEST
AND
DAVID F. WINKLER

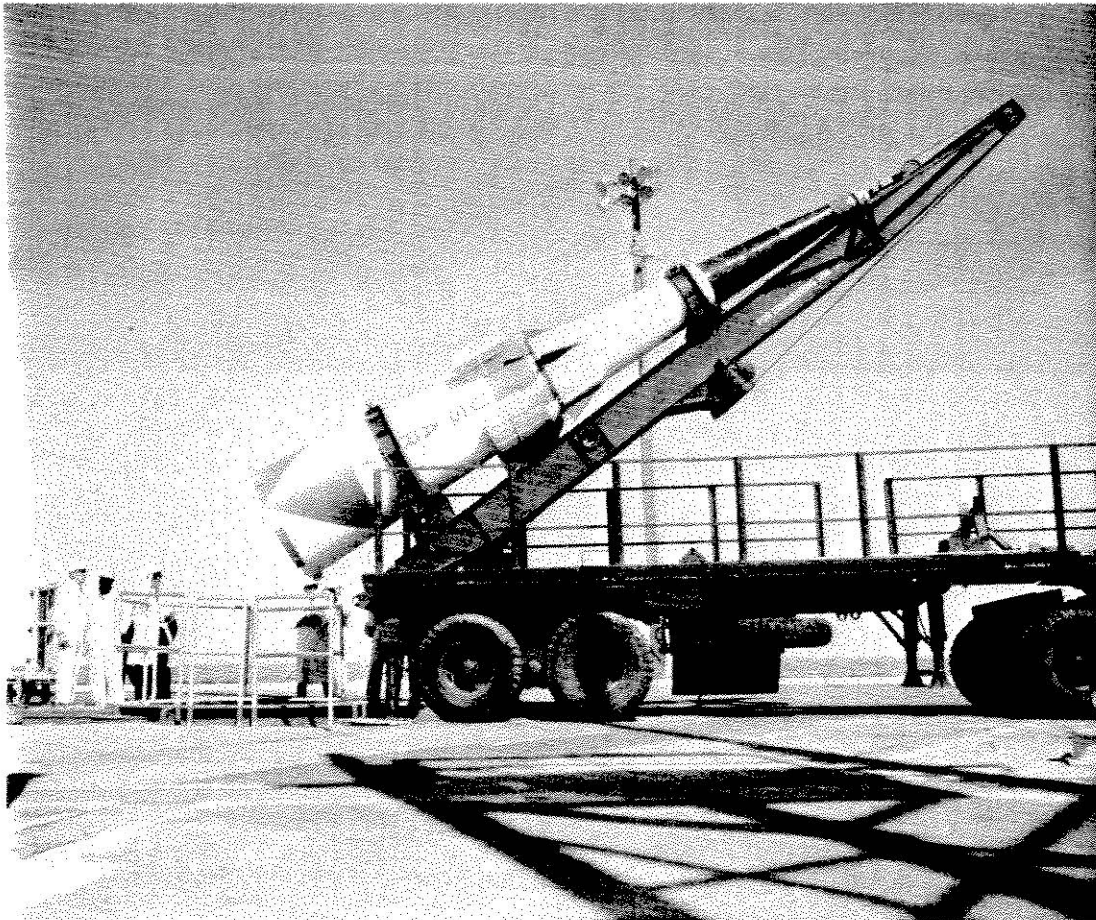
USACERL Special Report 97/01
November 1996

A study sponsored by the Department of Defense
Legacy Resource Management Program
Cold War Project

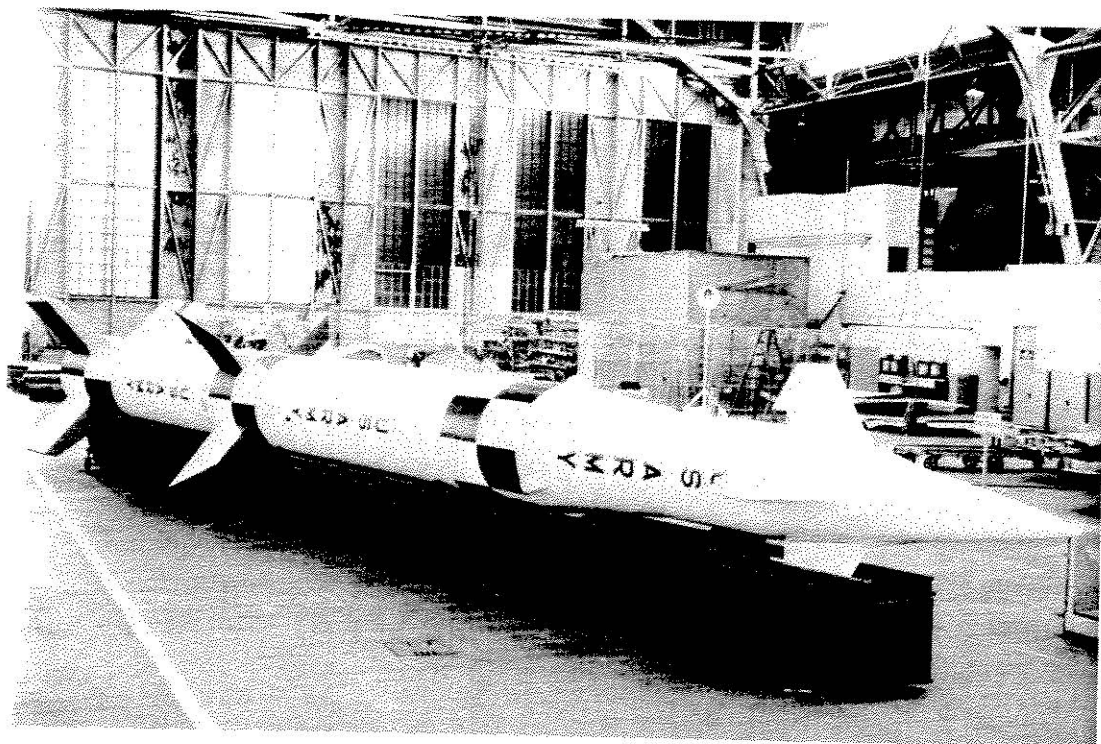
Antiballistic Missiles (ABMs): the Safeguard System

Summary

Deployed briefly in the mid-1970s, the Safeguard antiballistic missile system was the product of two decades of research, development, and testing. Army antiballistic missile development began under the Nike Zeus program (1956-1963), and continued under the Nike X (1963-1967) and Sentinel (1967-1969) programs before culminating in the Safeguard system (1969-1976). Incorporating incremental improvements in missile technology, combined with revolutionary advances in phased-array radar and advanced computers, the Safeguard system was eventually deployed at just a single site—the Stanley R. Mickelsen Safeguard Complex (SRMSC) near Grand Forks, North Dakota.



A Sprint missile being lowered into its underground silo.



A full-scale mockup of a Spartan missile.

Technical Specifications

The Safeguard ABM system was composed of three main components: sophisticated radars, powerful computers, and the sleek, deadly interceptor missiles—the Sprint and the Spartan.

Spartan

Length: 55 feet

Diameter: 42 inches

Wingspan: 118 inches

Weight: 28,700 pounds

Fuel: Solid propellant

Maximum engagement altitude: 330 miles

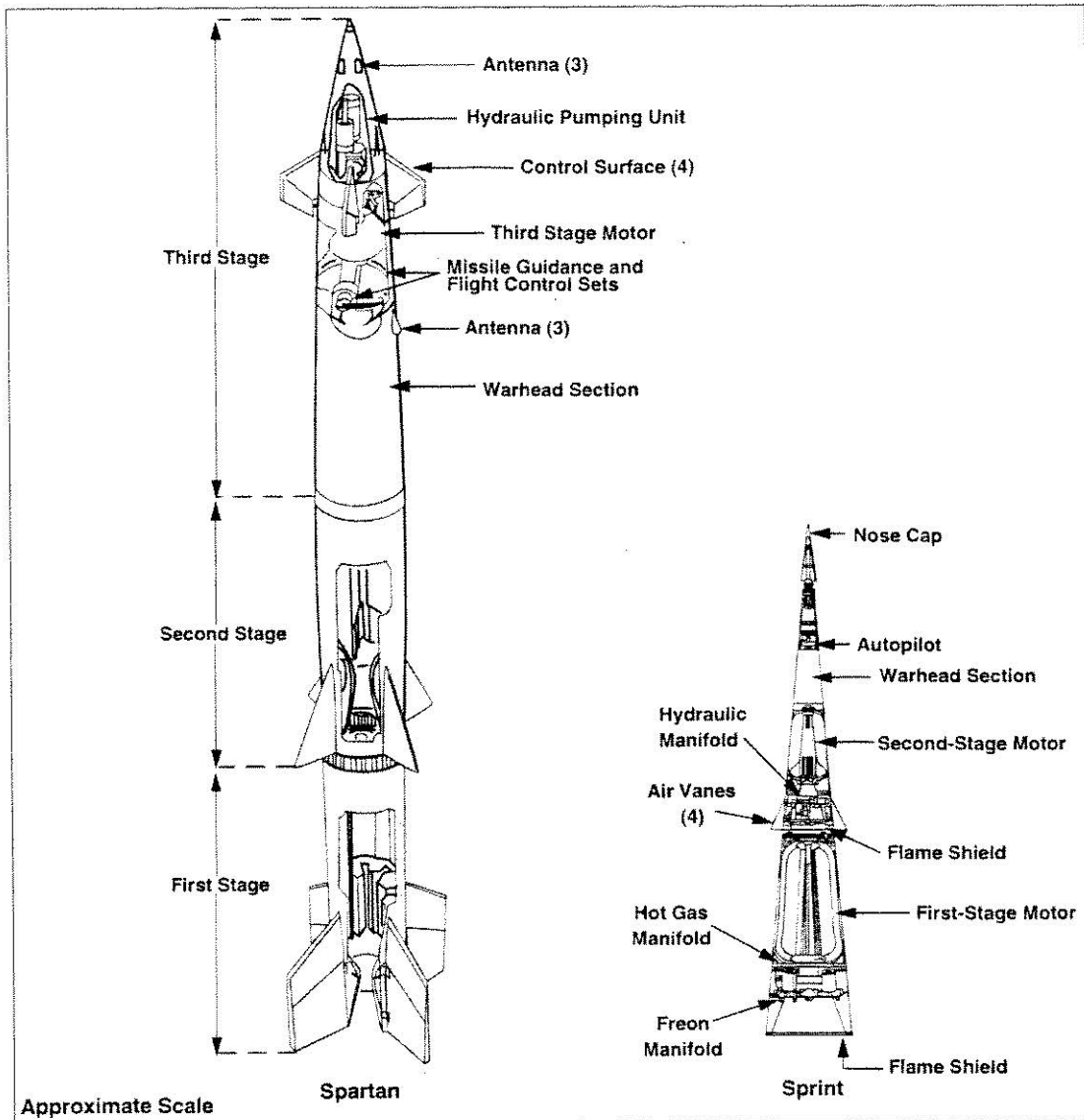
Range: Approximately 465 miles

Speed: Mach 10 (7,418 mph)

Guidance: Ground-based radio directed

Warhead: Nuclear, yield 5 megatons

Air Defense Missiles



These scale drawings reflect the dramatic differences between the Sprint and Spartan missiles.

Sprint

Length: 27 feet

Diameter at base: 4 feet 6 inches

Weight: 7,500 pounds

Fuel: Solid propellant

Maximum engagement altitude: 24 miles
Range: 25 miles
Guidance: Ground-based radio directed
Warhead: Nuclear, low-kiloton range yield

Contractors

Safeguard primary contractor: Western Electric Company
New York, New York

System design: Bell Laboratories
Whippany, New Jersey

Perimeter acquisition radar: General Electric
Syracuse, New York

Missile site radar: Raytheon
Boston, Massachusetts

Data processing system: Bell Laboratories
Whippany, New Jersey
Western Electric
New York, New York

Spartan subcontractor: McDonnell-Douglas
Santa Monica, California

Sprint subcontractor: Martin Marietta Corporation
Orlando, Florida

Guidance systems: Bell Laboratories
Whippany, New Jersey

System Operation

The Stanley R. Mickelsen Safeguard Complex consisted of four elements: the Perimeter Acquisition Radar (PAR) complex near Concrete, North Dakota; the Missile Site Radar (MSR) complex 12 miles south of Langdon, North Dakota; and the four Remote Sprint Launch (RSL) sites clustered within 20 miles of the MSR. The fourth element, the Ballistic Missile Defense Center (BMDC) in Colorado, was the only component of the SRMSC located outside of North Dakota. The BMDC was the highest echelon of command and control in the Safeguard system. The BMDC integrated the Safeguard within the North American Air Defense Command, and allowed the Commander of the Continental Air Defense Command (CONAD) to exercise operational command of the Safeguard system.

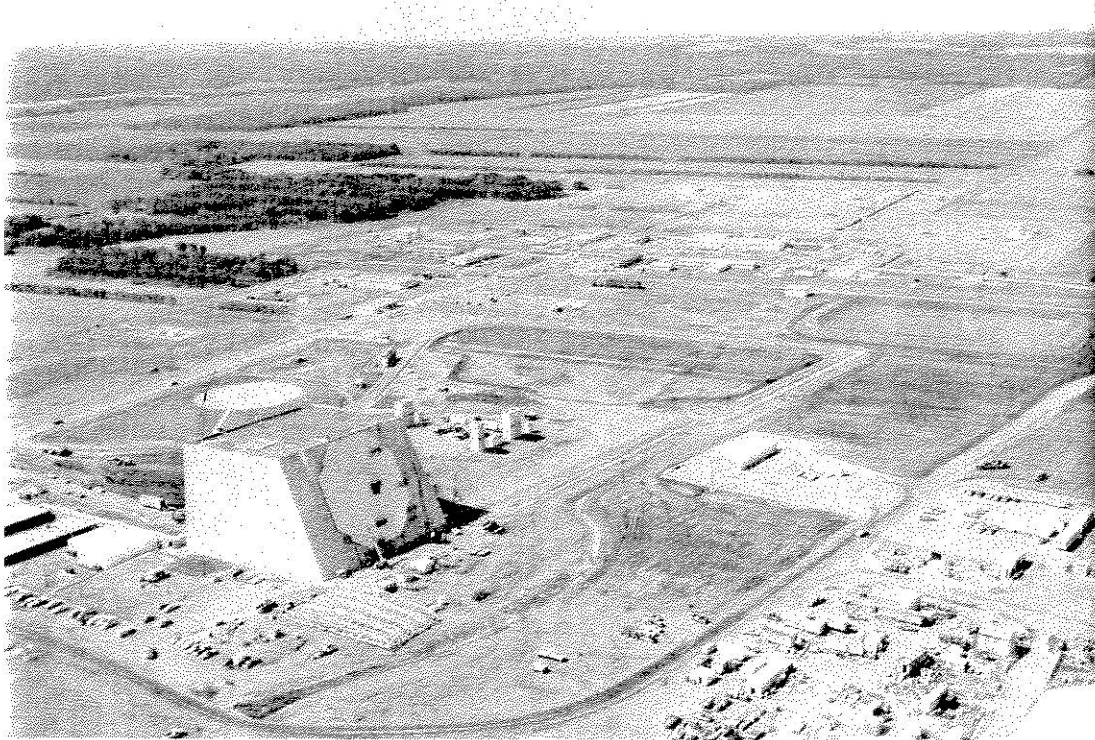
The defensive Sprint and Spartan missiles were technological marvels. However, the centerpieces of the Safeguard System were the tracking radars and associate

Air Defense Missiles

computers that rapidly sorted the incoming data and provided instructions to the interceptor missiles.

The largest of Safeguard's structures, the Perimeter Acquisition Radar Building (PARB), consisted of a huge phased-array antenna mounted on a sloped surface facing due north.

The PAR was capable of identifying and tracking incoming missiles at ranges up to 2,000 miles. Unlike a conventional "moving" radar antenna, the PAR's "phased-array" antenna incorporated 6,888 elements, each sending a pulse that would bounce off an incoming target coming over the North Pole. Through comparison of the reflected signals received back from the incoming object, trajectories were computed and this information was passed to the Missile Site Radar (MSR). To operate the PAR, an Army Surveillance Battalion of about 400 personnel would be required to man a three-section watch.



This 1972 photograph shows the Perimeter Acquisition Radar (PAR) site at SRMSC under construction. To the right of unfinished radar building is the power plant. The buildings in the background include enlisted housing, a dispensary, and a community center.

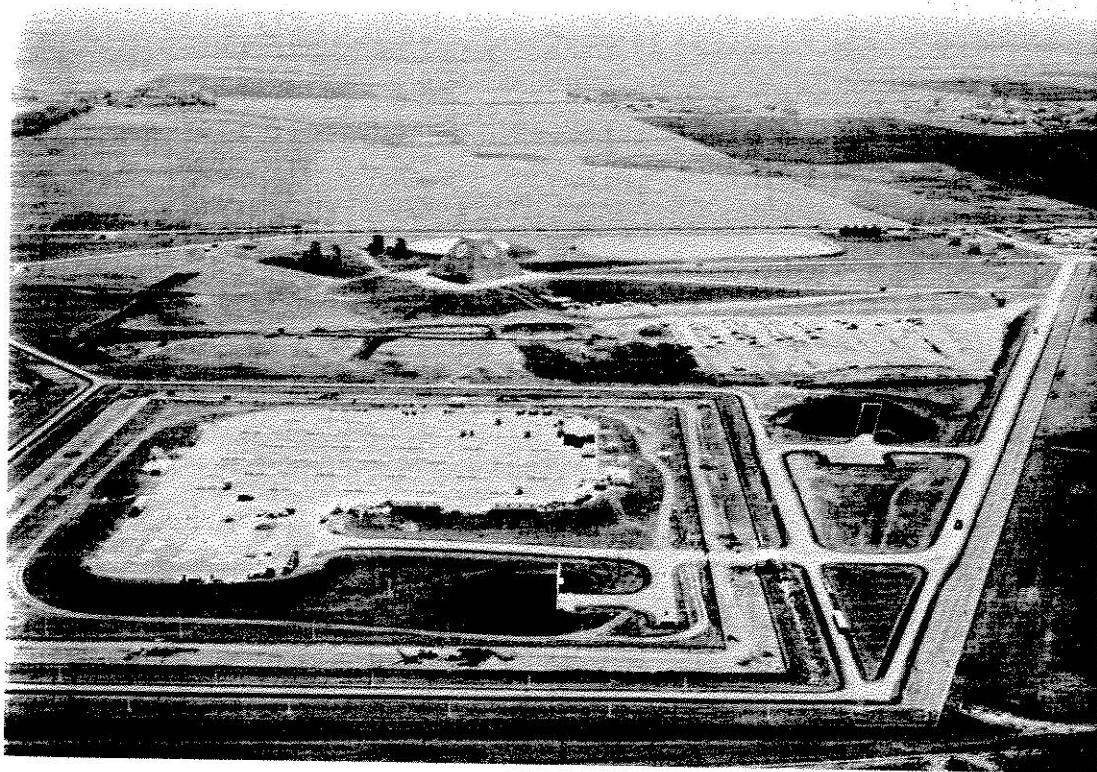
Antiballistic Missiles (ABMs)

The 470-acre MSR site housed the shorter-range missile control radar and nearly half of the Safeguard system's defensive Spartan and Sprint missiles.

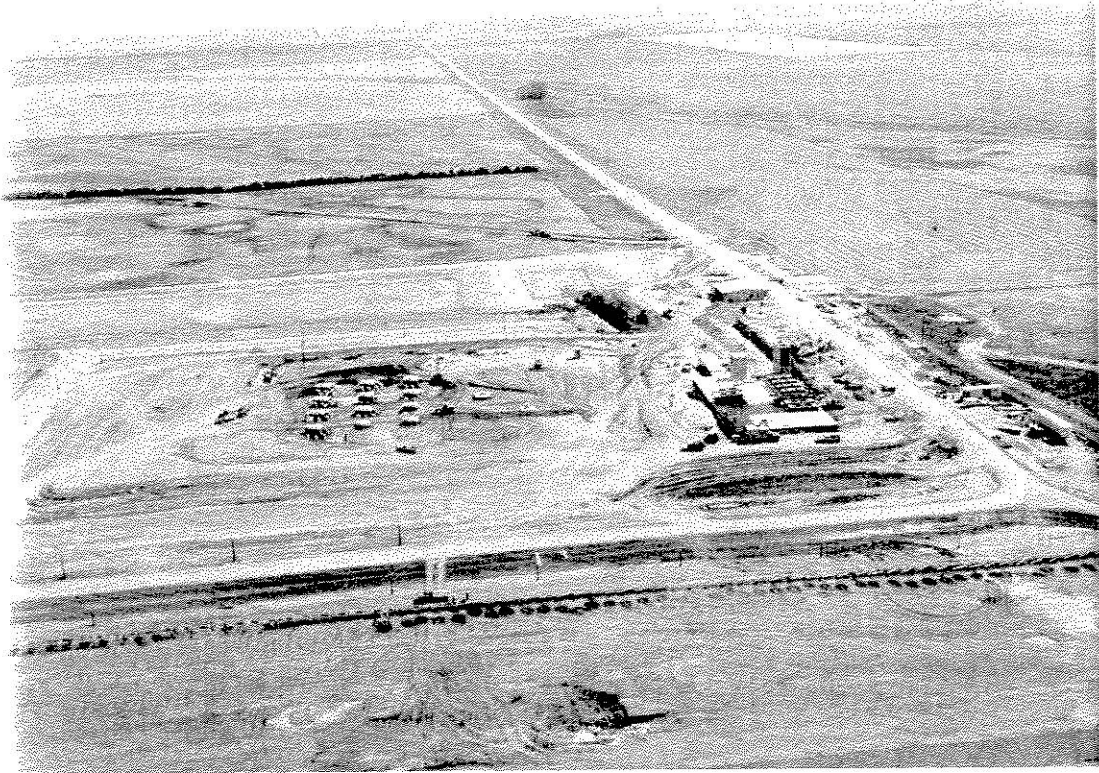
Located in a pyramid-shaped building, the site's phased-array radar had over 20,000 elements distributed equally between its four faces. Using the radar data supplied by the PAR, the MSR located and tracked incoming missiles, computed intercept trajectories, and launched and guided the Spartan and Sprint missiles to their targets. Operating the MSR required a staff of 800 soldiers and civilians.

The Safeguard system's defensive missiles were divided between five facilities: the MSR and the four RSLs. Each RSL deployed between 12 and 16 Sprint missiles. The sites, which were all located within a 20-mile radius of the MSR, were under the operational control of that radar facility.

The Spartan, with a range of nearly 500 miles, was designed to intercept the incoming missiles well outside the earth's atmosphere and destroy them with a multimegaton nuclear warhead.



An aerial view of the Missile Site Radar. In the foreground are the Sprint and Spartan launch areas. Looming over them is the two-tiered Missile Site Control Building.



The Remote Sprint Launch Site #2 under construction in the fall of 1972. The tops of the Sprint Launchers are visible in the center of the picture. The building taking shape at the right was the Remote Launch Operations Building.

Anticipating that some incoming warheads could slip by the Spartan interceptions and enter the atmosphere over North America, a “layered-defense” provided for a last-ditch defense in the form of the Sprint missile. Built by Martin Marietta, the Sprint was designed to operate at hypersonic speeds within the earth’s atmosphere. Sprint’s skin could sustain heat greater than that produced by its own rocket motor. Like Spartan, the two-stage Sprint carried a nuclear warhead.

Developmental History

The antecedent of the Safeguard program can be traced back to March 1955 when the Army contracted with Bell Laboratories to conduct an 18-month “Nike II” study aimed at projecting defensive missiles and supporting infrastructure requirements for the 1960s. With intelligence reporting an imminent Soviet ICBM capability, the Bell study focused on this problem and initially concluded that developing “long-range, high-data-rate acquisition radar” would be crucial. At this time, Bell also demonstrated, using analog computer simulation, that intercepting a target flying through space at 24,000 feet per second was feasible.

The results of the study were presented in October 1956 and 4 months later, the Army awarded Western Electric/Bell Laboratories the development contract for "Nike Zeus." Western Electric/Bell subcontracted the missile work to McDonnell-Douglas. Testing of the prototype missile began at White Sands in 1959; however, limited range considerations forced the program to use facilities at the Naval Test Range at Point Mugu, California.

As the missile work proceeded, Western Electric/Bell forged ahead on radar and supporting systems development. The process reached a point that a site needed to be selected for prototype system installation where actual ICBMs could be tracked and engaged. Already a prototype Zeus Target Track Radar (TTR) had been placed on Ascension Island downrange of Cape Canaveral. However, sensitive political considerations ruled out expanding Zeus facilities at Ascension or other islands off the west coast of Africa that were not owned by the United States. This forced planners to focus on Kwajalein in the Pacific, which already hosted a U.S. naval base. More importantly, this atoll in the Marshall Islands lay 4,800 miles downrange of Vandenberg AFB, then undergoing construction as an ICBM launch site.

As with many development programs, Nike Zeus encountered its share of catastrophic failures. Testing at White Sands proved invaluable as pieces of missiles could be recovered to determine causes for failure. Changes to the control fins corrected one of the initial problems. Meanwhile on March 29, 1961, the TTR at Ascension failed in its first attempt at tracking a Titan ICBM. Two months later, the radar recorded its first tracking success.

In addition to missile testing at White Sands, a prototype Zeus Acquisition Radar (ZAR) and another TTR were constructed and placed into operation. On December 14, 1961, these radars tracked and successfully engaged a Nike Hercules target missile with a Nike Zeus interceptor.

As the results of this demonstration were analyzed, facilities were readied at Kwajalein for the first attempt to intercept an ICBM in flight. This first attempt, on June 26, 1961, failed due to the TTR's inability to pickup the re-entry vehicle after the ICBM's propulsion section broke up. The intercepting Zeus missile also suffered a malfunction.

A partially successful intercept occurred on July 19, 1962, as a Zeus missile came within 2 kilometers of an incoming Atlas D ICBM. On December 12, 1962, a Zeus missile passed well within the kill radius of an incoming ICBM. On May 24, 1963, a Nike Zeus came within lethal range of an orbiting satellite. Tests continued through November 1963, showing consistent success.

Despite these successes, Defense Secretary McNamara chose not to deploy the system, but budgeted for continued research and development. McNamara's concern was that the system still lacked the sophistication to discern between real and decoy warheads and could be overwhelmed in a "saturation attack" since the radars could only manage one interception problem at a time.

The continued research and development program for a more advanced ABM program was dubbed "Nike X." Under the Nike X program, the Zeus missile evolved into the Spartan. In addition, planners identified the need for a short-range interceptor missile as well as the requirement for a radar that could track and direct the engagement of several targets simultaneously. The short-range interceptor became reality in the form of the Sprint. On March 18, 1963, Martin Marietta received the contract to develop this new missile. In 1965, the first Sprint prototype was launched at White Sands. The needed radar was already under development through a DoD Advanced Research Project Agency program called "Project Defender." Under this program, a low-power, phased-array antenna was completed in the fall of 1960 and tests showed that this nonmoving antenna, using computers, could electronically steer a radar beam in two directions. In June 1961, the Army Guided Missile Agency granted Western Electric/Bell Laboratories a contract to develop a prototype phased-array radar to be built at White Sands. Ground-breaking occurred at White Sands in March 1963.

With advances in solid-state electronics and high-speed computers, the "Zeus Multifunctional Array Radar" demonstrated the use of phased-array radars as part of an ABM defense as a breakthrough possibility. Already, Bell was studying the development of an even more powerful phased-array radar for long range tracking. This second Multifunctional Array Radar would evolve into the Perimeter Array Radar that eventually was deployed in North Dakota.

Meanwhile a smaller phased-array radar, designed to track incoming targets at close range and guide intercepting missiles, was proposed. In December 1963, the Raytheon Company received the contract to work with Bell Laboratories' people to design and build the "Missile Site Radar" (MSR).

In September 1967, Secretary of Defense Robert McNamara announced plans to deploy many elements of the Nike X program—the Perimeter Acquisition Radar (PAR), the Missile Site Radar (MSR), and the Sprint and Spartan missiles—in the new Sentinel antiballistic missile program. The initial deployment plan called for installing the Sentinel at 13 sites in the continental United States and Alaska and Hawaii.

The plan aroused a firestorm of protest in the major cities slated to receive Sentinel installations. Not only was the Sentinel unpopular at home, but President Nixon and his National Security Advisor Henry Kissinger were also concerned that the deployment of the Sentinel system could escalate the arms race with the Soviet Union.

In March 1969, Nixon announced his intention to deploy a "modified Sentinel system" that he called Safeguard. Whereas the Sentinel system was intended to provide a limited nationwide ballistic missile defense, the President ordered that the Safeguard system be positioned to protect a portion of the United States ICBM force.

The Safeguard program initially called for 12 sites. Despite moving the installations away from the nation's major cities, the program still faced rigorous Congressional scrutiny. In August 1969, the Senate authorized the construction of only two sites; one near Malmstrom, Montana, and the other near Grand Forks, North Dakota. Only the site near Grand Forks was ever completed.

As the debate to deploy Sentinel and Safeguard continued, construction of the prototype missile facilities continued at Kwajalein. Completion of launch tubes allowed the first Spartan to be fired from Kwajalein on March 2, 1968. The MSR built on Meck Island completed its first successful track of an ICBM on December 11, 1969. On August 28, 1970, an MSR-controlled Spartan missile successfully intercepted an incoming ICBM. Four months later, this feat was repeated with an MSR-controlled Sprint missile.

Basing Strategy

The placement of facilities for what became known as the Sentinel system announced by Defense Secretary McNamara was never fully revealed to the general public. However, the deployment plan, titled "Nike X DEMOD 1-67," would have placed 15 systems within the continental United States and a system each in Alaska and Hawaii. Continental sites slated to receive Sentinel installations included Boston; New York; Washington DC; Albany, Georgia; Detroit; Chicago; Dallas; Salt Lake; Seattle; San Francisco; Los Angeles; and Whiteman, Grand Forks, Malmstrom, and Warren Air Force Bases.

Construction of the first site at Sharpner's Pond near Boston began in late 1968. However, in that era of antiwar protest, opponents of ABM packed an Army community-relations meeting in late January 1969. The appearance of an adverse public reaction led Senator Edward Kennedy to write a letter to Defense Secretary Laird questioning the viability of the system. This act touched off a heated Senate debate and led to a Presidential review of the Sentinel deployment scheme. On March 14, President Nixon announced the deployment of a "modified Sentinel." Later that day Deputy Defense Secretary David Packard detailed the new deployment scheme to cover 12 sites. With the exception of Washington DC, the new Safeguard sites were to be located away from population centers. Instead of Boston, Detroit, Seattle, San Francisco, and Dallas, sites were to be placed in southern New England, the Michigan/Ohio area, the Northwest, central California, Southern California, and Texas. The four previously designated SAC missile bases, as well as southern Georgia, would still receive ABM defenses. New York, Chicago, Salt Lake, Hawaii, and Alaska lost out in the new scheme.

System Deployment

Phase I of ABM deployment called for immediate construction at sites near Grand Forks and Malmstrom Air Force Bases. Labor problems set back Malmstrom construction and made the base vulnerable as a bargaining chip for talks designed to limit ABM defenses. As a result of the 1972 ABM Treaty, the United States would be allowed to deploy one site away from the national command center (Washington DC) and that site would defend Grand Forks. Completed in 1974, that site was deactivated 2 years later.

Site Configuration

Discounting prototype facilities, the Grand Forks facility became the only location in America ever to host an ABM defense system. Unlike proposed ABM sites in Massachusetts

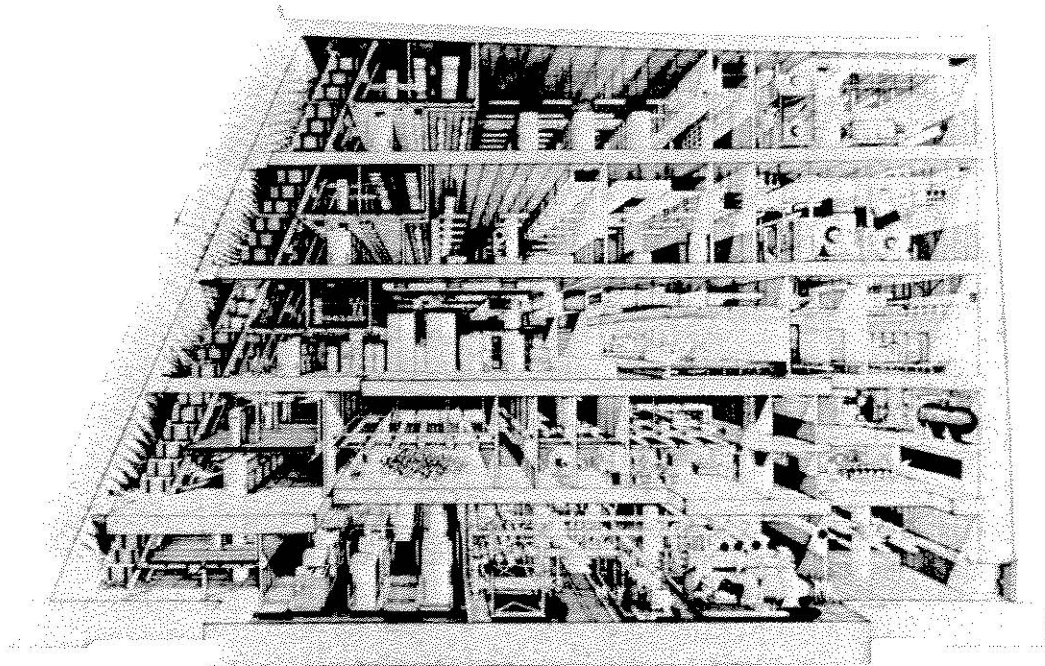
Air Defense Missiles

and Montana where only traces remain of once massive construction efforts, much remains intact in North Dakota.

Aside from the Egyptian pyramids, the Safeguard PAR may be the most solidly constructed building in the world. The structure is truly one-of-a-kind as, unlike the MSR, no prototype PAR had been built. The building is 204 by 213 feet at the base and rises to over 120 feet. The structure's northern-faced antenna wall slopes away from the ground at a 25 degree angle. This antenna face wall consists of a dense reinforced concrete mesh 7 feet thick. The three other walls are also dense reinforced concrete and have a base of 8 feet, tapering to 3 feet at the top. The reinforcing bars, installed vertically, horizontally, and diagonally, are No. 11 gauge; each bar is approximately as thick as a man's wrist. The structure required 63,000 cubic yards of concrete and 8,700 tons of reinforcing steel.

The interior of this completely above-ground structure includes five full floors with a mezzanine located between the second and third floors. Entrance to the building requires passing through two blast locks or through a tunnel leading from the power plant.

The adjacent power plant was housed in a partially buried hardened concrete structure covered with earth for addition blast protection. Inside the plant, five 16-cylinder diesel engines could combine to produce 14.7 megawatts of power. Provisions for emer-



A cutaway drawing of the massive Perimeter Acquisition Radar Building. At the time of its completion in August 1972 it was the largest radar facility in the world and the second tallest structure in North Dakota.

Antiballistic Missiles (ABMs)

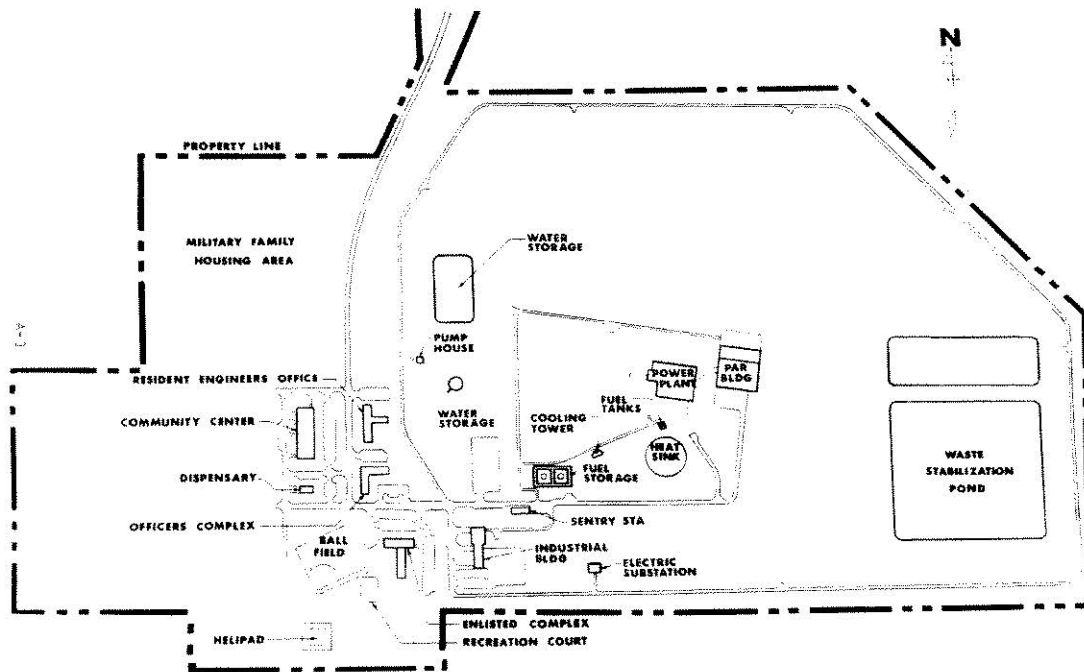
gency operations of the plant included storage for fuel supplies and a recirculating water cooling system featuring an underground storage cavern as a heat sink.

Located some 25 miles from the PAR facility, the Missile Site Radar facility consisted of the Missile Site Control Building (MSCB) and collocated Spartan and Sprint missile launch areas. The MSCB, which housed the radar, had above-ground and below-ground sections. Above ground was a four-sided truncated pyramid; each side had a 30-foot diameter antenna mounted integrally into the 3-foot thick reinforced concrete walls. Each antenna weighed nearly 400 tons and placing the units entailed overcoming unique engineering problems.

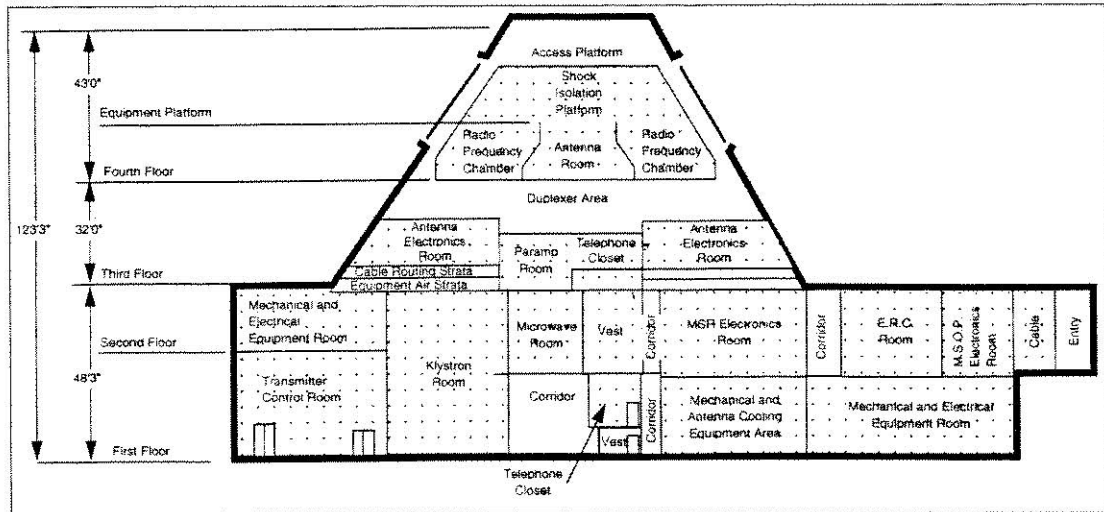
Below the pyramid stood a two-story 231- by 231-foot structure housing the radar transmitting and receiving components, phase shifters, switching gear, and other necessary subsystems. As with the PAR, the MSCB also had an adjoining underground power plant. With six diesel generators, this plant could produce up to 17.3 megawatts of power.

As part of the Missile Site Radar facility, prefabricated launch canisters for Spartan and Sprint launches stood ready to launch the defensive missiles. Sprint launchers were also placed at four remote site locations located to the east, west, north, and south of the MSCB.

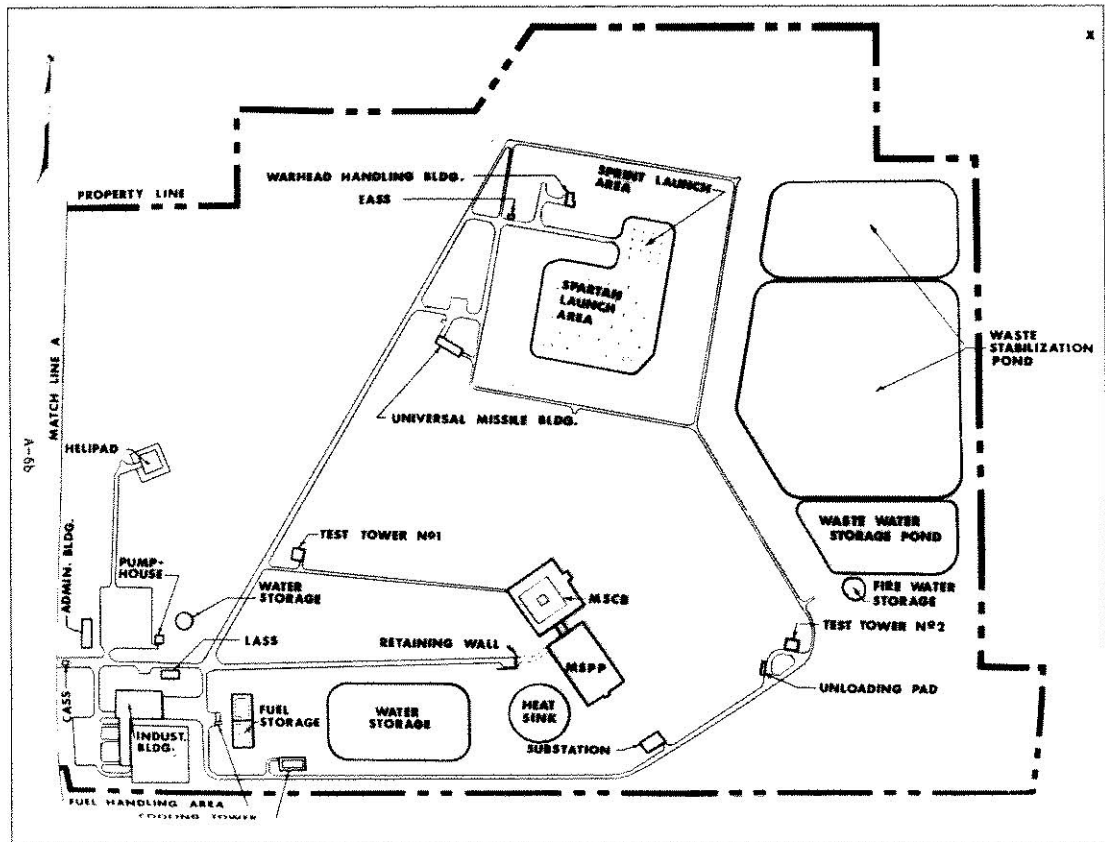
With manpower requirements at both sites consuming over 1,000 personnel, support and housing facilities were built adjoining the structures.



Spread over 279 acres, the PAR Site was a self-sufficient community.



A cross-section of the Missile Site Control Building. The building contained 127,000 square feet of usable floor area. It contained two subterranean main floors and two above-ground turret floors that housed the radars and communication equipment.



In addition to hosting the Missile Site Control Building and the Sprint and Spartan launch areas, the 470 acre Missile Site Radar facility also contained missile maintenance buildings, enlisted and officer housing, a family housing area, dispensary, chapel, gymnasium, and outdoor recreational facilities.

References

The missile technical specifications came from *Jane's All The World's Aircraft: 1971-72*, (New York: McGraw Hill, 1972) and Bill Gunston's, *Illustrated Encyclopedia of the World's Rockets and Missiles*, (New York: Crescent Books, 1979). A thorough technical overview completed for the U.S. Army Ballistic Missile Defense Systems Command is found in Bell Laboratories, *ABM Research and Development at Bell Laboratories: Project History, October 1975*, (Whippany, NJ: Bell Laboratories, 1975). Construction details came from James H. Kitchens, III, *A History of the Huntsville Division, U.S. Army Corps of Engineers: 15 October 1967- 31 December 1976*, (Huntsville, AL: U.S. Army Engineer Division, Huntsville, 1978); and Erwin N. Thompson, *Pacific Ocean Engineers: A History of the U.S. Army Corps of Engineers in the Pacific, 1905-1980*, (Ft. Shafter, HI: U.S. Army Engineer Division, Pacific Ocean, 1980). Another excellent source is the Historic American Engineering Record (HAER No. ND-9) of the Stanley R. Mickelsen Safeguard Complex currently being prepared under the direction of the U.S. Army Space and Strategic Defense Command, History Office, Huntsville, Alabama. For detailed coverage of the construction of the Safeguard sites at Grand Forks, complete with superb pictures and illustrations, see the U.S. Army Corps of Engineers, Huntsville Division, "Safeguard- A Step Toward Peace," n.d., in the Research Collection, Office of History, Headquarters Army Corps of Engineers, Alexandria, VA, Military Files XVIII-36. Also, Donald Baucom's, *The Origins of SDI, 1944-1983*, (Lawrence, KS: University Press of Kansas, 1992), incorporates the political debate into a finely compressed technical overview.

APPENDIX D.6

Wetlands and Other Waters Delineation Report

**Wetlands report to be submitted on or before
February 14, 2008.**

APPENDIX D.7

Conditional Use Permit Application Amended to Allow for Additional Wind Towers

CAVALIER COUNTY, NORTH DAKOTA
Conditional Use Permit Application
Amended to Allow for Additional Wind Towers

1. Applicant : Langdon Wind, LLC
2. 700 Universe Boulevard, Juno Beach, Florida 33408
3. Phone: 561-694-4678 (Orin Shakerdge, attorney for applicant)
4. Permit area:

Nekoma Township:

All of section 2 and E1/2 and SW ¼ of 10.

All in T159N-R60W;

Easby Township:

SE1/4, the S1/2 of the NE1/4, the SE1/4 of the NW1/4, E1/2of the SW1/4, and the SW1/4 of the SW1/4 of Section 34.

All in T160N-R59W;

Osnabrock Township:

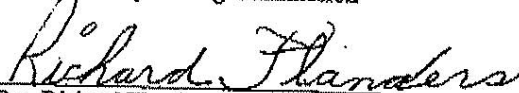
West 1/2of the West ½ of section 2; the North 1/2 , the Northeast ¼ of the Northeast ¼ of the SW ¼, the North ½ of the Southeast ¼ of the Southeast ¼, all in Section 11.

All in T159N-R59W;

These are additional permit sites for LLC Wind Towers. They will have the same mandates as previously approved by the Cavalier County Zoning Board. These additional sites were approved at a Zoning hearing October 17, 2007, by a motion made by Lawrence Henry and seconded by William Hardy. Said motion having passed unanimously upon a vote of the Commission, the Zoning Administrator was directed to issue the building permit to the Applicant.

Dated this the 17th day of October, 2007.

Cavalier County Zoning Commission



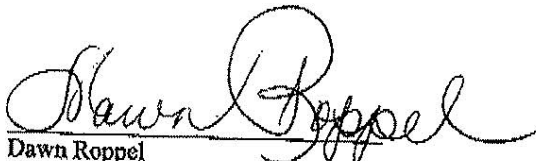
By: Richard Flanders

Its: Chairman

Building Permit

The fee of \$25.00 having been submitted, the Langdon Wind LLC is hereby issued a Building Permit for the construction of additional towers upon the property and subject to the conditions set forth above.

Dated this 17th day of October, 2007.



Dawn Roppel

Cavalier County Zoning Administrator

A motion made by Neil Romfo and seconded by Richard Flanders to approve the Zoning Committee 's approval of additional 27 towers to Langdon Wind LLC. Motion carried.

APPENDIX D.8

North Dakota DOT Permits acquired for Langdon I and Applicable to Langdon II

Langdon Wind, LLC

700 Universe Blvd.
Juno Beach, Florida, 33408-2683

October 23, 2007

Ilona A. Jeffcoat-Sacco, Executive Director
North Dakota Public Service Commission
600 E. Boulevard, Dept.408
Bismarck, ND 58505-0480

Subject: **Langdon Wind, LLC: ND PSC Case No. PU-07-26**

Dear Secretary Jeffcoat-Sacco:

In accordance with the Commission's Order, Langdon Wind, LLC hereby submits the North Dakota Department of Transportation – Temporary Drive Permits. Enclosed are eleven (11) copies of the permits.

Please contact me at (561) 691-7240 or Scott_Scovill@fpl.com with any questions or comments.

Sincerely,



Scott Scovill
Project Director, FPL Energy

COPY

North Dakota Department of Transportation
Temporary DRIVE PERMIT

Permit No. _____ District No. 63

APPLICANT <u>Langdon Wind LLC</u>	ADDRESS <u>817. Third Street, Suite 106</u>	
CITY <u>Langdon</u>	STATE <u>ND</u>	ZIP <u>58249</u>

The Applicant requests permission to construct 1 private commercial (circle one) drives on the state highway right of way along the S side of Route Hwy 66, 2.0 miles East, from Hwy 1 East, Mile Marker No. 81.0 80.986

described as follows: (Description of proposed work on state right of way and type of business served.)

Temporarily widen existing approach at 108th AVE NE for haul truck entry. Later reclaim approach back to original after project completion. modify an existing drive to allow access of long leads. This is only a temporary permit. when finished with project the drive is to be restored to its original size and all disturbed areas are to have topsoil replaced & seeded the existing pipe may have to be temporarily lengthened to allow drainage. Temporary and permanent inslopes to be 8:1

Applicant agrees that any permit issued, and any entrance built or work done shall be in accordance with plans attached hereto and made a part hereof, and Permit Specifications printed on the reverse side of this sheet. If the applicant fails to construct the drive to the specified dimensions, including the proper culvert length and inslopes, the Department of Transportation, hereinafter referred to as NDDOT, will either cancel this permit and remove the drive or make the necessary corrections and the Applicant will reimburse NDDOT for such work.

To be signed by Owner; Partner; Corp. Pres., Vice Pres., or other authorized Corp. Officer. (If signed by other authorized Corp. Officer, please attach copy of Power of Attorney or other documentation showing authority to sign.)

NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

APPLICANT:

Dick Rausch
NAME (TYPE OR PRINT)
[Signature]
SIGNATURE
Project manager FPL/E
TITLE
9-10-07
DATE

Wayde Swenson
DISTRICT ENGINEER (TYPE OR PRINT)
[Signature]
SIGNATURE
9/17/07
DATE

Permit granted: 9-17, 20 07

Construction shall be completed by: _____, 20 _____

Sketch: Project ASL-14 (2)
sta. 105 + 88



PERMIT SPECIFICATIONS

1. The total cost of all construction and maintenance of the work specified shall be borne by the Applicant, his grantees, successors, and assigns; except that the state will maintain the shoulder of the roadway.
2. It is understood by the Applicant that the state does not assume any responsibility for the removal or clearance of snow, ice, or sleet, or the opening of windrows of such materials, upon any portion of the drive even though snow, ice, or sleet is deposited or windrowed on said drive by its authorized representative engaged in normal winter maintenance operation.
3. No drive shall be considered as completed until checked and approved by NDDOT. Surfacing may be omitted on field entrances if so specified in the application.
4. A drive, as referred to in this permit, shall be the traveled area between the highway roadway surface and the adjacent right-of-way line. Said drive shall be used only for the purpose of providing entrance to and exit from the Applicant's property.
5. No drive, or improvement constructed on the highway right of way shall be altered or relocated without permission of the district engineer of NDDOT.
6. The Applicant agrees to perform all work in accordance with this permit, and to indemnify and hold harmless NDDOT, its officers, and employees from any and all liability, judgments, costs, expenses, and claims growing out of damages, or alleged damages, of any nature whatsoever, to any person or property arising out of performance or nonperformance of said work, or the existence of said drives.
7. It is understood by the Applicant that the location, construction, and maintenance of drives are under the supervision of NDDOT at all times, and that in granting this permit NDDOT waives none of its powers or rights to direct the removal, relocation, or proper maintenance in the future of any drives within the right of way of the state highway.
8. The granting of this permit does not vest the Applicant with the exclusive use of the drive. NDDOT retains the right to diminish and expand the use of the drive as required in the interest of the safety of highway traffic.
9. The Risk Management Appendix, attached, is hereby incorporated and made a part of this agreement.

Risk Management Appendix

Small, Low-Risk Leases, Easements, Licenses, and Permits with Private Individuals, Companies, Corporations, Etc. (referred to as Recipient):

Recipient agrees to indemnify, save, and hold harmless the State of North Dakota, its agencies, officers and employees (State), from claims resulting from the performance of the Recipient or its agent, including all costs, expenses, and attorneys' fees, which may in any manner result from or arise out of this agreement (i.e., low-risk lease, easement, license, or permit). Recipient also agrees to indemnify, save and hold the State harmless for all costs, expenses, and attorneys' fees incurred in establishing and litigating the indemnification coverage provided herein.

Recipient shall secure and keep in force during the term of this agreement the following insurance coverages covering the Recipient for any and all claims of any nature which may in any manner arise out of or result from this agreement:

- 1) **Commercial general liability** insurance – minimum limits of liability required are **\$250,000 per person** and **\$1,000,000 per occurrence**. If it is not practical for Recipient to carry commercial general liability insurance, Recipient **may substitute farm liability insurance, renters insurance, or home owners insurance** in the amount of **at least \$300,000**.
- 2) If Recipient may use an automobile in relation to the attached agreement, Recipient must secure **automobile liability** insurance with a minimum limit of liability of **at least \$250,000**. The above limits may be satisfied through a policy or policies of insurance, primary and excess, including the so called umbrella or catastrophe form.
- 3) The State of North Dakota, its agencies, officers, and employees (State) shall be endorsed as an **additional insured** on the above policies.

The Recipient shall furnish a certificate of insurance coverage evidencing the requirements in 1 through 3 above to the undersigned State representative prior to commencement of this agreement.

Recipients' insurance coverage shall be primary (i.e., pay first) as respects any insurance, self-insurance, or self-retention maintained by the State.

The Recipient must secure any necessary Workers Compensation coverage that may be required by State law.

When a portion of a Contract is sublet, the Recipient shall obtain insurance protection (as outlined above) to provide liability coverage to protect the Recipient and the State as a result of work undertaken by the Subcontractor or Sublessor. In addition, the Recipient shall ensure that any and all parties performing work under the Contract are covered by public liability insurance as outlined above. All Subcontractors or Sublessors performing work under the Contract are required to maintain the same scope of insurance required of the Recipient. The Recipient shall be held responsible for ensuring compliance with those requirements by all Subcontractors or Sublessors.

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Friday, September 07, 2007 2:01 PM
To: Geoffrey_West@fpl.com; Semenko, Greg J.; Martinson, Leon O.
Cc: Court_Laska@fpl.com
Subject: RE: FW: FLP Energy Drive - Cavalier County

Leon

FPL is good to go since they know will be authorized under NW 12 rather than 14.

Sheri

From: Geoffrey_West@fpl.com [mailto:Geoffrey_West@fpl.com]
Sent: Thursday, August 30, 2007 4:27 PM
To: Lares, Sheri G.
Cc: Court_Laska@fpl.com
Subject: Re: FW: FLP Energy Drive - Cavalier County

Hi Sheri,

I talked with Toni at the USACE in great length concerning the project and now understand your reservations under t Nationwide 14. She explained that the work we are doing should fall under the Nationwide 12 only, even the access roads we are constructing. The "devil is in the details" as she explained it. Our rationale came from previous projects where we submitted a PCN for the Nationwide 12 and 14 for similar access roads.

Therefore based on our discussion, our activities fall under NWP 12 and still under the 1/10 of an acre threshold for t PCN. I appreciate you bringing this matter to our attention. As I told Toni, we spend quite a bit of time conducting di diligence so that we can avoid impacts to wetlands. We would rather spend the extra effort up front in micro-siting turbines and re-routing roads before construction rather than delay the construction process, because as you know the just a short season to work before winter sets in. Should you have any questions, please feel free to contact me at (56 691-2644 or on my cell at (561) 758-4277.

Geoff

Geoffrey B. West
 700 Universe Blvd.
 Juno Beach, FL 33408
 W: (561) 691-2644

▼ "Lares, Sheri G." <slares@nd.gov>

"Lares, Sheri G." To: "Martinson, Leon O." <lmartins@nd.gov>, Geoffrey_West@fpl.com
 cc:
 <slares@nd.gov> Subject: FW: FLP Energy Drive - Cavalier County

08/29/2007 12:18
 PM

9/12/2007

Leon,

I received this information below from our Cultural Resources Section. I would add that any waste material shall not be stockpiled in wetland areas.

Thanks
Sheri

I understand that FLP Energy would like to temporarily improve three drives to accommodate trucks hauling their large wind turbine parts. These improvements consist of increasing the radius of the drives and the Highway 1/66 intersection. I assume that this would be accomplished by placing borrow along the existing drives/roadways, and then removing the borrow and wasting it when it is no longer needed.

I checked the following locations in our database:

Cavalier County:
S.35, 160/60
S.6, 159/59

Highway 1 and Highway 66 ROW has been surveyed in these areas and no cultural resources were recorded in these areas. Therefore, I recommend no additional cultural resource work provided the borrow is acquired from within a mile of each location, from within our ROW, and it is wasted into the same areas along the back slope. If the borrow is to come from any other area, it should be handled as contractor optioned material source according to Standard Specification 107.04.

Bob Christensen
Cultural Resource Section Leader
701-328-4539

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Wednesday, August 29, 2007 11:15 AM
To: Geoffrey_West@fpl.com
Cc: Martinson, Leon O.
Subject: RE: Langdon Nationwide Permit

Geoff,

Based on our conversations with the USACE, pursuant to Nationwide Permit 14, a preconstruction notification to the ND Regule office of the USACE is required prior to construction if, (2) there is a discharge into a special aquatic site. Since the NDDOT is unaware of whether this area fits that description, beyond knowing that it is a jurisdictional area, we recommend that you provide notification to the USACE and copy us in on the letter. The letter should describe the project and impacts, including temporary impacts. Also describe your intentions to regrade the areas back to existing contours and plans for reseeded. Once we are in receipt of the letter, we will provide the approval to proceed.

Regards
 Sheri

From: Geoffrey_West@fpl.com [mailto:Geoffrey_West@fpl.com]
Sent: Tuesday, August 21, 2007 11:59 AM
To: Lares, Sheri G.
Cc: Court_Laska@fpl.com
Subject: Langdon Nationwide Permit

Sheri,

Court Laska contacted me and asked me to follow up with you concerning the nationwide permit. Our consultant who conducted the wetlands work at Langdon has provided a response below. Since we fall below the 1/10 of an acre for Prior to Construction Notification (PCN) threshold, we are not required to notify the USACE before beginning road work. We did, however, contact the USACE to get a jurisdictional determination as part of our due diligence. That information is attached below as is the crossing matrix for wetland impacts at the Langdon site. Under the nationwide we would have to notify the USACE if our impacts were greater than 1/10 acre. Court did not provide a contact numl for you, so should you have any questions feel free to contact me at (561) 691-2644.

Regards,
 Geoff

Geoffrey B. West
 700 Universe Blvd.
 Juno Beach, FL 33408
 W: (561) 691-2644

----- Forwarded by Geoffrey West/HR/FPL on 08/21/2007 12:43 PM -----

"Dawdy, Greg" To: Geoffrey_West@fpl.com
 <Greg.Dawdy@tetrattech.com> cc: "Martorano, Tracey" <tracey.martorano@tteci.com>
 Subject: Langdon Nationwide Permit

08/21/2007 12:09 PM

9/12/2007

Geoff, as we discussed on the phone this morning we have received a jurisdictional determination (JD) of Project area from the USACE-Omaha District. A copy of the JD letter and associated map are attached.

Prior to the site visits Tetra Tech requested a jurisdictional determination of aquatic resources in the project area from Bismarck, North Dakota office of the USACE – Omaha District. Tetra Tech provided the USACE with a figure depicting the project area with a preliminary array and requested that all areas within that project boundary be identified to aid FPLE in avoiding and minimizing impacts to aquatic resources. The USACE identified several drainages and tributaries to the Park River and the Nekoma Coulee within the site boundaries as jurisdictional waters of the United States (WU). The areas as marked on the figure do not define actual wetland boundaries but rather only identify features which the USACE – Omaha District claimed as jurisdictional.

In the response to our request, the USACE also indicated that joint USEPA and USACE guidance based on the recent U.S Supreme Court decisions (*Rapanos vs. the U.S* and *Carabell vs. the U.S*) would soon be issued and this guidance may affect the jurisdictional status of some of these areas. The effect of these Supreme Court decisions would likely be a reduction in the number of locations which would now be considered jurisdictional by the USACE.

Based on this JD and the proposed project impacts to jurisdictional waters as identified by the USACE-Omaha District the proposed impacts are below the 1/10 acre notification threshold for Nationwide Permits 12 and 14.

Gregory C. Dawdy | Project Manager/Senior Biologist

Main: 618.343.2300 | Fax: 618.343.7042 | Direct Dial: 618.343.2342 | Cell: 314.706.4336

Tetra Tech | Complex World, Clear Solutions

1634 Eastport Plaza | Collinsville, IL 62234

www.tetrattech.com

PLEASE NOTE: This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

(See attached file: Fig1USACEDetReq.pdf)(See attached file: dept of army ltr.pdf)(See attached file: LngdnFig2_11x17.pdf)(See attached file: crossings_summary.xls)

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Tuesday, August 21, 2007 9:30 AM
To: Court_Laska@fpl.com
Cc: Martinson, Leon O.
Subject: RE: Nationwide permit

Good morning,

I have contacted the USACE regarding this project. The USACE indicated that FPL needs to contact the ND Regulatory office regarding jurisdiction and authorization under the NWP. Upon receiving documentation from the USACE that they concur with y assumptions, we will provide the approval to move forward with the roadway approach work.

Sheri Lares

From: Court_Laska@fpl.com [mailto:Court_Laska@fpl.com]
Sent: Monday, August 20, 2007 8:04 AM
To: Lares, Sheri G.
Subject: Re: Nationwide permit

Please see the attachments below.

(See attached file: crossings_summary_7_16_updated.xls)(See attached file: LngdnFig1Wetlands11x17Q_07_16_07.

Court Laska
Civil Superintendent

Langdon Wind, LLC
817 3rd St. Suite 106
Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com

----- Forwarded by Court Laska/FPL Energy/FPL on 08/20/2007 08:02 AM -----

Geoffrey West To: Court Laska/FPL Energy/FPL@FPL
cc:
Subject: Re: Nationwide permit

08/20/2007
07:57 AM

Court,

See the attached and scroll down to page 93 of the pdf. Our activities are regulated by the nationwide 12 and 14 perm There is no formal notification to the US Army Corp of Engineers unless you exceed the thresholds set forth in these

9/12/2007

permits. That is where the wetland matrix and corresponding map comes in handy. Please let me know if you have any questions.

Geoff

(See attached file: NWP_2007_final.pdf)

Geoffrey B. West
700 Universe Blvd.
Juno Beach, FL 33408
W: (561) 691-2644

☐ Court Laska

Court Laska
Sent by: Court Laska
To: Geoffrey West/HR/FPL
cc: Connie Rausch/FPL Energy/FPL, Dick Rausch/FPL Energy/FPL, Geoffrey West/HR/FPL
Subject: Re: Nationwide permit

08/20/2007
07:34 AM

Geoff,

How's this coming along? We will need to get a copy by Weds or this could hold up the road progress. Thanks for your help.

Court Laska
Civil Superintendent

Langdon Wind, LLC
817 3rd St. Suite 106
Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com
☐ Court Laska

Court Laska
Sent by: Court Laska
To: Geoffrey West/HR/FPL
cc: Dick Rausch/FPL Energy/FPL, Connie Rausch/FPL Energy/FPL
Subject: Nationwide permit

9/12/2007

08/17/2007
09:08 AM

Geoff,

I had a request from the ND/DOT to see the Nationwide permit. They would like to see a copy before the issue any more Permits for access roads. If you could forward a copy to me that would be great.

Thanks,

Court Laska
Civil Superintendent

Langdon Wind, LLC
817 3rd St. Suite 106
Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com

9/12/2007

MARSH

CERTIFICATE OF INSURANCE

CERTIFICATE NUMBER
ATL-001245506-03

PRODUCER

MARSH USA, INC.
3475 PIEDMONT RD, N.E.
SUITE 1200
FAX: 404-760-5663
ATLANTA OFFICE, CERTREQUEST@MARSH.COM
ATLANTA, GA 30305

500469-ENERG-06/07

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE POLICY. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES DESCRIBED HEREIN.

COMPANIES AFFORDING COVERAGE

COMPANY

A FEDERAL INSURANCE CO

COMPANY

B AMERICAN HOME ASSURANCE COMPANY

COMPANY

C

COMPANY

D

INSURED

FPL ENERGY, LLC
LANGDON WIND
ATTN: ERICA MCNABB
RISK MANAGEMENT DEPARTMENT
700 UNIVERSE BOULEVARD
JUNO BEACH, FL 33408

COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE DESCRIBED HEREIN HAVE BEEN ISSUED TO THE INSURED NAMED HEREIN FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY	3711-09-30	09/15/06	09/15/07	GENERAL AGGREGATE	\$ 2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG	\$ 1,000,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				PERSONAL & ADV INJURY	\$ 1,000,000
	<input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE	\$ 1,000,000
					FIRE DAMAGE (Any one fire)	\$ 1,000,000
					MED EXP (Any one person)	\$ 10,000
A	AUTOMOBILE LIABILITY	7352-37-31 (AOS)	09/15/06	09/15/07	COMBINED SINGLE LIMIT	\$ 1,000,000
A	<input checked="" type="checkbox"/> ANY AUTO	7352-37-33 (VA)	09/15/06	09/15/07	BODILY INJURY (Per person)	\$
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident)	\$
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE	\$
	<input type="checkbox"/> HIRED AUTOS					
	<input type="checkbox"/> NON-OWNED AUTOS					
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	\$
	<input type="checkbox"/> ANY AUTO				OTHER THAN AUTO ONLY:	
					EACH ACCIDENT	\$
					AGGREGATE	\$
	EXCESS LIABILITY				EACH OCCURRENCE	\$
	<input type="checkbox"/> UMBRELLA FORM				AGGREGATE	\$
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM					\$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	WC 7207708 (AOS)	09/15/06	09/15/07	<input checked="" type="checkbox"/> WC STATUTORY LIMITS	
B		WC 7207709 (CA)	09/15/06	09/15/07	EL EACH ACCIDENT	\$ 1,000,000
B	THE PROPRIETOR/PARTNERS/EXECUTIVE OFFICERS ARE:	WC 7209331 (FL)	09/15/06	09/15/07	EL DISEASE-POLICY LIMIT	\$ 1,000,000
B		WC 7209332 (OR)	09/15/06	09/15/07	EL DISEASE-EACH EMPLOYEE	\$ 1,000,000
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

THE STATE OF NORTH DAKOTA AND ITS AGENCIES, OFFICERS, AND EMPLOYEE (STATE) ARE INCLUDED AS ADDITIONAL INSURED ON THE GENERAL LIABILITY AND AUTOMOBILE POLICY AS ADDITIONAL INSURED AS REQUIRED BY WRITTEN CONTRACT. COVERAGE INCLUDES WAIVER OF SUBROGATION IN FAVOR OF THE STATE OF ND.

CERTIFICATE HOLDER

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
608 EAST BOULEVARD AVENUE
BISMARCK, ND 58505-0700

CANCELLATION

SHOULD ANY OF THE POLICIES DESCRIBED HEREIN BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE INSURER AFFORDING COVERAGE WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED HEREIN, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER AFFORDING COVERAGE, ITS AGENTS OR REPRESENTATIVES, OR THE ISSUER OF THIS CERTIFICATE.

MARSH USA INC.

By: Ronald A. Santaniello

MM1(3/02)

VALID AS OF: 04/24/07

North Dakota Department of Transportation
 Temporary DRIVE PERMIT

COPY

Permit No. _____ District No. 63

APPLICANT <u>FPL Energy Langdon Wind LLC</u>		ADDRESS <u>10812 Hwy 66 NE</u>	
CITY <u>Osnabrock</u>	STATE <u>ND</u>	ZIP <u>58269</u>	

The Applicant requests permission to construct 1 private commercial (circle one) drives on the state highway right of way along the E side of Route Hwy 1, 2 miles N from Hwy 66, Mile Marker No. 206.8 At

described as follows: (Description of proposed work on state right of way and type of business served.)
 Temporarily widen existing approach at 86th St NE for haul truck entry. Later reclaim approach back to original after project completion/modify an existing drive to allow access of long loads. This is only a temporary permit, when finished with project the drive is to be restored to its original size and all disturbed areas are to have topsoil replaced and reseeded. The existing pipe may have to be temporarily lengthened to allow drainage. Temporary and permanent Inslopes to be 8:1

Applicant agrees that any permit issued and any entrance built or work done shall be in accordance with plans attached hereto and made a part hereof, and Permit Specifications printed on the reverse side of this sheet. If the applicant fails to construct the drive to the specified dimensions, including the proper culvert length and inslopes, the Department of Transportation, hereinafter referred to as NDDOT, will either cancel this permit and remove the drive or make the necessary corrections and the Applicant will reimburse NDDOT for such work.

To be signed by Owner; Partner; Corp. Pres., Vice Pres., or other authorized Corp. Officer. (If signed by other authorized Corp. Officer, please attach copy of Power of Attorney or other documentation showing authority to sign.)

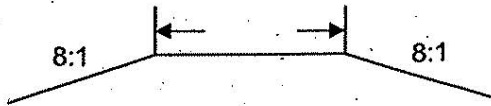
APPLICANT:
Dick Rausch
 NAME (TYPE OR PRINT)
Dick Rausch
 SIGNATURE
P.M. FPLE
 TITLE
9/17/07
 DATE

NORTH DAKOTA
 DEPARTMENT OF TRANSPORTATION
Wayde Swenson
 DISTRICT ENGINEER (TYPE OR PRINT)
Wayde Swenson
 SIGNATURE
9/24/07
 DATE

Permit granted: 9-20, 20 07

Construction shall be completed by: _____, 20 _____

Sketch:
 Project FAS I 14(L)
 STA 371+64.4 Lt



(Original to District File, copy to Applicant.)

(over)

PERMIT SPECIFICATIONS

1. The total cost of all construction and maintenance of the work specified shall be borne by the Applicant, his grantees, successors, and assigns; except that the state will maintain the shoulder of the roadway.
2. It is understood by the Applicant that the state does not assume any responsibility for the removal or clearance of snow, ice, or sleet, or the opening of windrows of such materials, upon any portion of the drive even though snow, ice, or sleet is deposited or windrowed on said drive by its authorized representative engaged in normal winter maintenance operation.
3. No drive shall be considered as completed until checked and approved by NDDOT. Surfacing may be omitted on field entrances if so specified in the application.
4. A drive, as referred to in this permit, shall be the traveled area between the highway roadway surface and the adjacent right-of-way line. Said drive shall be used only for the purpose of providing entrance to and exit from the Applicant's property.
5. No drive, or improvement constructed on the highway right of way shall be altered or relocated without permission of the district engineer of NDDOT.
6. The Applicant agrees to perform all work in accordance with this permit, and to indemnify and hold harmless NDDOT, its officers, and employees from any and all liability, judgments, costs, expenses, and claims growing out of damages, or alleged damages, of any nature whatsoever, to any person or property arising out of performance or nonperformance of said work, or the existence of said drives.
7. It is understood by the Applicant that the location, construction, and maintenance of drives are under the supervision of NDDOT at all times, and that in granting this permit NDDOT waives none of its powers or rights to direct the removal, relocation, or proper maintenance in the future of any drives within the right of way of the state highway.
8. The granting of this permit does not vest the Applicant with the exclusive use of the drive. NDDOT retains the right to diminish and expand the use of the drive as required in the interest of the safety of highway traffic.
9. The Risk Management Appendix, attached, is hereby incorporated and made a part of this agreement.

Risk Management Appendix

Small, Low-Risk Leases, Easements, Licenses, and Permits with Private Individuals, Companies, Corporations, Etc. (referred to as Recipient):

Recipient agrees to indemnify, save, and hold harmless the State of North Dakota, its agencies, officers and employees (State), from claims resulting from the performance of the Recipient or its agent, including all costs, expenses, and attorneys' fees, which may in any manner result from or arise out of this agreement (i.e., low-risk lease, easement, license, or permit). Recipient also agrees to indemnify, save and hold the State harmless for all costs, expenses, and attorneys' fees incurred in establishing and litigating the indemnification coverage provided herein.

Recipient shall secure and keep in force during the term of this agreement the following insurance coverages covering the Recipient for any and all claims of any nature which may in any manner arise out of or result from this agreement:

- 1) **Commercial general liability** insurance – minimum limits of liability required are **\$250,000 per person** and **\$1,000,000 per occurrence**. If it is not practical for Recipient to carry commercial general liability insurance, Recipient may substitute **farm liability insurance, renters insurance, or home owners** insurance in the amount of **at least \$300,000**.
- 2) If Recipient may use an automobile in relation to the attached agreement, Recipient must secure **automobile liability** insurance with a minimum limit of liability of **at least \$250,000**. The above limits may be satisfied through a policy or policies of insurance, primary and excess, including the so called umbrella or catastrophe form.
- 3) The State of North Dakota, its agencies, officers, and employees (State) shall be endorsed as an **additional insured** on the above policies.

The Recipient shall furnish a certificate of insurance coverage evidencing the requirements in 1 through 3 above to the undersigned State representative prior to commencement of this agreement.

Recipients' insurance coverage shall be primary (i.e., pay first) as respects any insurance, self-insurance, or self-retention maintained by the State.

The Recipient must secure any necessary Workers Compensation coverage that may be required by State law.

When a portion of a Contract is sublet, the Recipient shall obtain insurance protection (as outlined above) to provide liability coverage to protect the Recipient and the State as a result of work undertaken by the Subcontractor or Sublessor. In addition, the Recipient shall ensure that any and all parties performing work under the Contract are covered by public liability insurance as outlined above. All Subcontractors or Sublessors performing work under the Contract are required to maintain the same scope of insurance required of the Recipient. The Recipient shall be held responsible for ensuring compliance with those requirements by all Subcontractors or Sublessors.

MARSH

CERTIFICATE OF INSURANCE

CERTIFICATE NUMBER
ATL-001245506-03

PRODUCER

MARSH USA, INC.
3475 PIEDMONT RD, N.E.
SUITE 1200
FAX: 404-760-5663
ATLANTA.OFFICE.CERTREQUEST@MARSH.COM
ATLANTA, GA 30305

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE POLICY. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES DESCRIBED HEREIN.

COMPANIES AFFORDING COVERAGE

- COMPANY
A FEDERAL INSURANCE CO
- COMPANY
B AMERICAN HOME ASSURANCE COMPANY
- COMPANY
C
- COMPANY
D

500469-ENERG-06/07

INSURED

FPL ENERGY, LLC
LANGDON WIND
ATTN: ERICA MCNABB
RISK MANAGEMENT DEPARTMENT
700 UNIVERSE BOULEVARD
JUNO BEACH, FL 33408

COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE DESCRIBED HEREIN HAVE BEEN ISSUED TO THE INSURED NAMED HEREIN FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY	3711-09-30	09/15/06	09/15/07	GENERAL AGGREGATE	\$ 2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG	\$ 1,000,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				PERSONAL & ADV INJURY	\$ 1,000,000
	<input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE	\$ 1,000,000
					FIRE DAMAGE (Any one fire)	\$ 1,000,000
					MED EXP (Any one person)	\$ 10,000
A	AUTOMOBILE LIABILITY	7352-37-31 (AOS)	09/15/06	09/15/07	COMBINED SINGLE LIMIT	\$ 1,000,000
	<input checked="" type="checkbox"/> ANY AUTO	7352-37-33 (VA)	09/15/06	09/15/07	BODILY INJURY (Per person)	\$
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident)	\$
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE	\$
	<input type="checkbox"/> HIRED AUTOS					
	<input type="checkbox"/> NON-OWNED AUTOS					
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	\$
	<input type="checkbox"/> ANY AUTO				OTHER THAN AUTO ONLY:	\$
					EACH ACCIDENT	\$
					AGGREGATE	\$
	EXCESS LIABILITY				EACH OCCURRENCE	\$
	<input type="checkbox"/> UMBRELLA FORM				AGGREGATE	\$
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM					\$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	WC 7207708 (AOS)	09/15/06	09/15/07	<input checked="" type="checkbox"/> WC STATUTORY LIMITS	
		WC 7207709 (CA)	09/15/06	09/15/07	EL EACH ACCIDENT	\$ 1,000,000
	<input type="checkbox"/> INCL	WC 7209331 (FL)	09/15/06	09/15/07	EL DISEASE-POLICY LIMIT	\$ 1,000,000
	<input type="checkbox"/> EXCL	WC 7209332 (OR)	09/15/06	09/15/07	EL DISEASE-EACH EMPLOYEE	\$ 1,000,000
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

THE STATE OF NORTH DAKOTA AND ITS AGENCIES, OFFICERS, AND EMPLOYEE (STATE) ARE INCLUDED AS ADDITIONAL INSURED ON THE GENERAL LIABILITY AND AUTOMOBILE POLICY AS ADDITIONAL INSURED AS REQUIRED BY WRITTEN CONTRACT. COVERAGE INCLUDES WAIVER OF SUBROGATION IN FAVOR OF THE STATE OF ND.

CERTIFICATE HOLDER

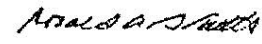
NORTH DAKOTA DEPARTMENT
OF TRANSPORTATION
608 EAST BOULEVARD AVENUE
BISMARCK, ND 58505-0700

CANCELLATION

SHOULD ANY OF THE POLICIES DESCRIBED HEREIN BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE INSURER AFFORDING COVERAGE WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED HEREIN, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER AFFORDING COVERAGE, ITS AGENTS OR REPRESENTATIVES, OR THE ISSUER OF THIS CERTIFICATE.

MARSH USA INC.

BY: Ronald A. Santaniello



MM1(3/02)

VALID AS OF: 04/24/07

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Friday, September 07, 2007 2:01 PM
To: Geoffrey_West@fpl.com; Semenکو, Greg J.; Martinson, Leon O.
Cc: Court_Laska@fpl.com
Subject: RE: FW: FLP Energy Drive - Cavalier County

Leon

FPL is good to go since they know will be authorized under NW 12 rather than 14.

Sheri

From: Geoffrey_West@fpl.com [mailto:Geoffrey_West@fpl.com]
Sent: Thursday, August 30, 2007 4:27 PM
To: Lares, Sheri G.
Cc: Court_Laska@fpl.com
Subject: Re: FW: FLP Energy Drive - Cavalier County

Hi Sheri,

I talked with Toni at the USACE in great length concerning the project and now understand your reservations under the Nationwide 14. She explained that the work we are doing should fall under the Nationwide 12 only, even the access roads we are constructing. The "devil is in the details" as she explained it. Our rationale came from previous projects where we submitted a PCN for the Nationwide 12 and 14 for similar access roads.

Therefore based on our discussion, our activities fall under NWP 12 and still under the 1/10 of an acre threshold for the PCN. I appreciate you bringing this matter to our attention. As I told Toni, we spend quite a bit of time conducting due diligence so that we can avoid impacts to wetlands. We would rather spend the extra effort up front in micro-siting turbines and re-routing roads before construction rather than delay the construction process, because as you know there just a short season to work before winter sets in. Should you have any questions, please feel free to contact me at (561) 691-2644 or on my cell at (561) 758-4277.

Geoff

Geoffrey B. West
 700 Universe Blvd.
 Juno Beach, FL 33408
 W: (561) 691-2644

▼ "Lares, Sheri G." <slares@nd.gov>

"Lares, Sheri G." To: "Martinson, Leon O." <lmartins@nd.gov>, Geoffrey_West@fpl.com
 cc:
 <slares@nd.gov> Subject: FW: FLP Energy Drive - Cavalier County

08/29/2007 12:18
 PM

9/12/2007

Leon,

I received this information below from our Cultural Resources Section. I would add that any waste material shall not be stockpiled in wetland areas.

Thanks
Sheri

I understand that FLP Energy would like to temporarily improve three drives to accommodate trucks hauling their large wind turbine parts. These improvements consist of increasing the radius of the drives and the Highway 1/66 intersection. I assume that this would be accomplished by placing borrow along the existing drives/roadways, and then removing the borrow and wasting it when it is no longer needed.

I checked the following locations in our database:

Cavalier County:
S.35, 160/60
S.6, 159/59

Highway 1 and Highway 66 ROW has been surveyed in these areas and no cultural resources were recorded in these areas. Therefore, I recommend no additional cultural resource work provided the borrow is acquired from within a mile of each location, from within our ROW, and it is wasted into the same areas along the back slope. If the borrow is to come from any other area, it should be handled as contractor optioned material source according to Standard Specification 107.04.

Bob Christensen
Cultural Resource Section Leader
701-328-4539

9/12/2007

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Wednesday, August 29, 2007 11:15 AM
To: Geoffrey_West@fpl.com
Cc: Martinson, Leon O.
Subject: RE: Langdon Nationwide Permit

Geoff,

Based on our conversations with the USACE, pursuant to Nationwide Permit 14, a preconstruction notification to the ND Regulatory office of the USACE is required prior to construction if, (2) there is a discharge into a special aquatic site. Since the NDDOT is unaware of whether this area fits that description, beyond knowing that it is a jurisdictional area, we recommend that you provide notification to the USACE and copy us in on the letter. The letter should describe the project and impacts, including temporary impacts. Also describe your intentions to regrade the areas back to existing contours and plans for reseeding. Once we are in receipt of the letter, we will provide the approval to proceed.

Regards
 Sheri

From: Geoffrey_West@fpl.com [mailto:Geoffrey_West@fpl.com]
Sent: Tuesday, August 21, 2007 11:59 AM
To: Lares, Sheri G.
Cc: Court_Laska@fpl.com
Subject: Langdon Nationwide Permit

Sheri,

Court Laska contacted me and asked me to follow up with you concerning the nationwide permit. Our consultant who conducted the wetlands work at Langdon has provided a response below. Since we fall below the 1/10 of an acre for the Prior to Construction Notification (PCN) threshold, we are not required to notify the USACE before beginning road work. We did, however, contact the USACE to get a jurisdictional determination as part of our due diligence. That information is attached below as is the crossing matrix for wetland impacts at the Langdon site. Under the nationwide, we would have to notify the USACE if our impacts were greater than 1/10 acre. Court did not provide a contact number for you, so should you have any questions feel free to contact me at (561) 691-2644.

Regards,
 Geoff

Geoffrey B. West
 700 Universe Blvd.
 Juno Beach, FL 33408
 W: (561) 691-2644

----- Forwarded by Geoffrey West/HR/FPL on 08/21/2007 12:43 PM -----

"Dawdy, Greg" To: Geoffrey_West@fpl.com
 <Greg.Dawdy@tetrattech.com> cc: "Martorano, Tracey" <tracey.martorano@tteci.com>
 Subject: Langdon Nationwide Permit

08/21/2007 12:09 PM

9/12/2007

Geoff, as we discussed on the phone this morning we have received a jurisdictional determination (JD) of Project area from the USACE-Omaha District. A copy of the JD letter and associated map are attached.

Prior to the site visits Tetra Tech requested a jurisdictional determination of aquatic resources in the project area from the Bismarck, North Dakota office of the USACE – Omaha District. Tetra Tech provided the USACE with a figure depicting the project area with a preliminary array and requested that all areas within that project boundary be identified to aid FPPE in avoiding and minimizing impacts to aquatic resources. The USACE identified several drainages and tributaries to the Park River and the Nekoma Coulee within the site boundaries as jurisdictional waters of the United States (WUS). The areas as marked on the figure do not define actual wetland boundaries but rather only identify features which the USACE – Omaha District claimed as jurisdictional.

In the response to our request, the USACE also indicated that joint USEPA and USACE guidance based on the recent U.S Supreme Court decisions (Rapanos vs. the U.S and Carabell vs. the U.S) would soon be issued and this guidance may affect the jurisdictional status of some of these areas. The effect of these Supreme Court decisions would likely be a reduction in the number of locations which would now be considered jurisdictional by the USACE.

Based on this JD and the proposed project impacts to jurisdictional waters as identified by the USACE-Omaha District the proposed impacts are below the 1/10 acre notification threshold for Nationwide Permits 12 and 14.

Gregory C. Dawdy | Project Manager/Senior Biologist

Main: 618.343.2300 | Fax: 618.343.7042 | Direct Dial: 618.343.2342 | Cell: 314.706.4336

Tetra Tech | Complex World, Clear Solutions

1634 Eastport Plaza | Collinsville, IL 62234

www.tetrattech.com

PLEASE NOTE: This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

(See attached file: Fig1USACEDetReq.pdf)(See attached file: dept of army ltr.pdf)(See attached file: LngdnFig2_11x17.pdf)(See attached file: crossings_summary.xls)

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Tuesday, August 21, 2007 9:30 AM
To: Court_Laska@fpl.com
Cc: Martinson, Leon O.
Subject: RE: Nationwide permit

Good morning,

I have contacted the USACE regarding this project. The USACE indicated that FPL needs to contact the ND Regulatory office regarding jurisdiction and authorization under the NWP. Upon receiving documentation from the USACE that they concur with your assumptions, we will provide the approval to move forward with the roadway approach work.

Sheri Lares

From: Court_Laska@fpl.com [mailto:Court_Laska@fpl.com]
Sent: Monday, August 20, 2007 8:04 AM
To: Lares, Sheri G.
Subject: Re: Nationwide permit

Please see the attachments below.

(See attached file: crossings_summary_7_16_updated.xls)(See attached file: LngdnFig1Wetlands11x17Q_07_16_07.pc

Court Laska
 Civil Superintendent

Langdon Wind, LLC
 317 3rd St. Suite 106
 Langdon, ND 58249

(701) 256-3298 Office
 (701) 256-5393 Fax
 (701) 550-0993 Cell

Court_Laska@fpl.com

----- Forwarded by Court Laska/FPL Energy/FPL on 08/20/2007 08:02 AM -----

Geoffrey West
To: Court Laska/FPL Energy/FPL@FPL
cc:
Subject: Re: Nationwide permit

08/20/2007
 07:57 AM

Court,

See the attached and scroll down to page 93 of the pdf. Our activities are regulated by the nationwide 12 and 14 permits. There is no formal notification to the US Army Corp of Engineers unless you exceed the thresholds set forth in these

9/12/2007

permits. That is where the wetland matrix and corresponding map comes in handy. Please let me know if you have any questions.

Geoff

(See attached file: NWP_2007_final.pdf)

Geoffrey B. West
700 Universe Blvd.
Juno Beach, FL 33408
W: (561) 691-2644

☞ Court Laska

To: Geoffrey West/HR/FPL
cc: Connie Rausch/FPL Energy/FPL, Dick Rausch/FPL Energy/FPL, Geoffrey West/HR/FPL
Sent by: Subject: Re: Nationwide permit
Court Laska

08/20/2007
07:34 AM

Geoff,

How's this coming along? We will need to get a copy by Weds or this could hold up the road progress. Thanks for your help.

Court Laska
Civil Superintendent

Langdon Wind, LLC
317 3rd St. Suite 106
Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com
☞ Court Laska

Court Laska
Sent by: To: Geoffrey West/HR/FPL
Subject: Nationwide permit
Court Laska
cc: Dick Rausch/FPL Energy/FPL, Connie Rausch/FPL Energy/FPL

9/12/2007

08/17/2007
09:08 AM

Geoff,

I had a request from the ND/DOT to see the Nationwide permit. They would like to see a copy before the issue anymore Permits for access roads. If you could forward a copy to me that would be great.

Thanks,

Court Laska
Civil Superintendent

Langdon Wind, LLC
317 3rd St. Suite 106
Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com

North Dakota Department of Transportation
 Temporary DRIVE PERMIT

COPY

Permit No. _____ District No. 63

APPLICANT <u>Langdon Wind LLC</u>	ADDRESS <u>817 Third Street, Suite 106</u>	
CITY <u>Langdon</u>	STATE <u>ND</u>	ZIP <u>58249</u>

The Applicant requests permission to construct 1 private/commercial (circle one) drives on the state highway right of way along the E side of Route Hwy 1, 1/2 mile North, from Hwy 66, Mile Marker No. 205.395

described as follows: (Description of proposed work on state right of way and type of business served.)

modify construction of a private access off of the Highway to string roads leading to wind turbine sites. modify an existing drive to allow access of long loads. This is only a temporary permit, when finished with project, the drive is to be restored to its original size and all disturbed areas are to have top soil replaced and reseeded. Temporary & permanent Inslopes are to be 8:1

Applicant agrees that any permit issued and any entrance built or work done shall be in accordance with plans attached hereto and made a part hereof, and Permit Specifications printed on the reverse side of this sheet. If the applicant fails to construct the drive to the specified dimensions, including the proper culvert length and inslopes, the Department of Transportation, hereinafter referred to as NDDOT, will either cancel this permit and remove the drive or make the necessary corrections and the Applicant will reimburse NDDOT for such work.

To be signed by Owner; Partner; Corp. Pres., Vice Pres., or other authorized Corp. Officer. (If signed by other authorized Corp. Officer, please attach copy of Power of Attorney or other documentation showing authority to sign.)

APPLICANT:

Dick Rausch
 NAME (TYPE OR PRINT)
Dick Rausch
 SIGNATURE
Project Construction Manager
 TITLE
8-9-07
 DATE

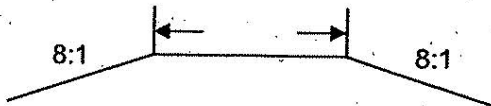
NORTH DAKOTA
 DEPARTMENT OF TRANSPORTATION

Wayde Swenson
 DISTRICT ENGINEER (TYPE OR PRINT)
Wayde Swenson
 SIGNATURE
9/17/07
 DATE

Permit granted: 9-17, 20 07

Construction shall be completed by: _____, 20 _____

Sketch:
 Project FASE I 14(1)
 STA 450+83.0 Lt



(Original to District File, copy to Applicant.)

(over)

PERMIT SPECIFICATIONS

1. The total cost of all construction and maintenance of the work specified shall be borne by the Applicant, his grantees, successors, and assigns; except that the state will maintain the shoulder of the roadway.
2. It is understood by the Applicant that the state does not assume any responsibility for the removal or clearance of snow, ice, or sleet, or the opening of windrows of such materials, upon any portion of the drive even though snow, ice, or sleet is deposited or windrowed on said drive by its authorized representative engaged in normal winter maintenance operation.
3. No drive shall be considered as completed until checked and approved by NDDOT. Surfacing may be omitted on field entrances if so specified in the application.
4. A drive, as referred to in this permit, shall be the traveled area between the highway roadway surface and the adjacent right-of-way line. Said drive shall be used only for the purpose of providing entrance to and exit from the Applicant's property.
5. No drive, or improvement constructed on the highway right of way shall be altered or relocated without permission of the district engineer of NDDOT.
6. The Applicant agrees to perform all work in accordance with this permit, and to indemnify and hold harmless NDDOT, its officers, and employees from any and all liability, judgments, costs, expenses, and claims growing out of damages, or alleged damages, of any nature whatsoever, to any person or property arising out of performance or nonperformance of said work, or the existence of said drives.
7. It is understood by the Applicant that the location, construction, and maintenance of drives are under the supervision of NDDOT at all times, and that in granting this permit NDDOT waives none of its powers or rights to direct the removal, relocation, or proper maintenance in the future of any drives within the right of way of the state highway.
8. The granting of this permit does not vest the Applicant with the exclusive use of the drive. NDDOT retains the right to diminish and expand the use of the drive as required in the interest of the safety of highway traffic.
9. The Risk Management Appendix, attached, is hereby incorporated and made a part of this agreement.

Risk Management Appendix

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Recipient shall secure and keep in force during the term of this agreement the following insurance coverages covering the Recipient for any and all claims of any nature which may in any manner arise out of or result from this agreement:

- 1) **Commercial general liability** insurance – minimum limits of liability required are **\$250,000 per person** and **\$1,000,000 per occurrence**. If it is not practical for Recipient to carry commercial general liability insurance, Recipient **may substitute farm liability insurance, renters insurance, or home owners** insurance in the amount of **at least \$300,000**.
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- 3) The State of North Dakota, its agencies, officers, and employees (State) shall be endorsed as an **additional insured** on the above policies.

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MARSH

CERTIFICATE OF INSURANCE

CERTIFICATE NUMBER
ATL-001245506-03

PRODUCER

MARSH USA, INC.
3475 PIEDMONT RD, N.E.
SUITE 1200
FAX: 404-760-5663
ATLANTA OFFICE.CERTREQUEST@MARSH.COM
ATLANTA, GA 30305

500469-ENERG-06/07

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COMPANIES AFFORDING COVERAGE

COMPANY	A	FEDERAL INSURANCE CO
COMPANY	B	AMERICAN HOME ASSURANCE COMPANY
COMPANY	C	
COMPANY	D	

INSURED

FPL ENERGY, LLC
LANGDON WIND
ATTN: ERICA MCNABB
RISK MANAGEMENT DEPARTMENT
700 UNIVERSE BOULEVARD
JUNO BEACH, FL 33408

COVERAGES

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CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	GENERAL LIABILITY	3711-09-30	09/15/06	09/15/07	GENERAL AGGREGATE \$ 2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG \$ 1,000,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				PERSONAL & ADV INJURY \$ 1,000,000
	OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE \$ 1,000,000
					FIRE DAMAGE (Any one fire) \$ 1,000,000
					MED EXP (Any one person) \$ 10,000
A	AUTOMOBILE LIABILITY	7352-37-31 (AOS)	09/15/06	09/15/07	COMBINED SINGLE LIMIT \$ 1,000,000
	<input checked="" type="checkbox"/> ANY AUTO	7352-37-33 (VA)	09/15/06	09/15/07	BODILY INJURY (Per person) \$
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident) \$
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE \$
	<input type="checkbox"/> HIRED AUTOS				
	<input type="checkbox"/> NON-OWNED AUTOS				
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT \$
	<input type="checkbox"/> ANY AUTO				OTHER THAN AUTO ONLY: \$
					EACH ACCIDENT \$
					AGGREGATE \$
	EXCESS LIABILITY				EACH OCCURRENCE \$
	<input type="checkbox"/> UMBRELLA FORM				AGGREGATE \$
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM				\$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	WC 7207708 (AOS)	09/15/06	09/15/07	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER \$ 1,000,000
		WC 7207709 (CA)	09/15/06	09/15/07	EL EACH ACCIDENT \$ 1,000,000
	<input type="checkbox"/> INCL	WC 7209331 (FL)	09/15/06	09/15/07	EL DISEASE-POLICY LIMIT \$ 1,000,000
	<input type="checkbox"/> EXCL	WC 7209332 (OR)	09/15/06	09/15/07	EL DISEASE-EACH EMPLOYEE \$ 1,000,000
	OTHER				

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

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CERTIFICATE HOLDER

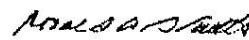
NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
608 EAST BOULEVARD AVENUE
BISMARCK, ND 58505-0700

CANCELLATION

SHOULD ANY OF THE POLICIES DESCRIBED HEREIN BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE INSURER AFFORDING COVERAGE WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED HEREIN, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER AFFORDING COVERAGE, ITS AGENTS OR REPRESENTATIVES, OR THE ISSUER OF THIS CERTIFICATE

MARSH USA INC.

BY: Ronald A. Santaniello



MM1(3/02)

VALID AS OF: 04/24/07

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Friday, September 07, 2007 2:01 PM
To: Geoffrey_West@fpl.com; Semenکو, Greg J.; Martinson, Leon O.
Cc: Court_Laska@fpl.com
Subject: RE: FW: FLP Energy Drive - Cavalier County

Leon

FPL is good to go since they know will be authorized under NW 12 rather than 14.

Sheri

From: Geoffrey_West@fpl.com [mailto:Geoffrey_West@fpl.com]
Sent: Thursday, August 30, 2007 4:27 PM
To: Lares, Sheri G.
Cc: Court_Laska@fpl.com
Subject: Re: FW: FLP Energy Drive - Cavalier County

Hi Sheri,

I talked with Toni at the USACE in great length concerning the project and now understand your reservations under the Nationwide 14. She explained that the work we are doing should fall under the Nationwide 12 only, even the access roads we are constructing. The "devil is in the details" as she explained it. Our rationale came from previous projects where we submitted a PCN for the Nationwide 12 and 14 for similar access roads.

Therefore based on our discussion, our activities fall under NWP 12 and still under the 1/10 of an acre threshold for the PCN. I appreciate you bringing this matter to our attention. As I told Toni, we spend quite a bit of time conducting due diligence so that we can avoid impacts to wetlands. We would rather spend the extra effort up front in micro-siting turbines and re-routing roads before construction rather than delay the construction process, because as you know there is just a short season to work before winter sets in. Should you have any questions, please feel free to contact me at (561) 691-2644 or on my cell at (561) 758-4277.

Geoff

Geoffrey B. West
 700 Universe Blvd.
 Juno Beach, FL 33408
 W: (561) 691-2644

☞ "Lares, Sheri G." <slares@nd.gov>

"Lares, Sheri G." To: "Martinson, Leon O." <lmartins@nd.gov>, Geoffrey_West@fpl.com
 cc:
 <slares@nd.gov> Subject: FW: FLP Energy Drive - Cavalier County

08/29/2007 12:18
 PM

9/12/2007

Leon,

I received this information below from our Cultural Resources Section. I would add that any waste material shall not be stockpiled in wetland areas.

Thanks
Sheri

I understand that FLP Energy would like to temporarily improve three drives to accommodate trucks hauling their large wind turbine parts. These improvements consist of increasing the radius of the drives and the Highway 1/66 intersection. I assume that this would be accomplished by placing borrow along the existing drives/roadways, and then removing the borrow and wasting it when it is no longer needed.

I checked the following locations in our database:

Cavalier County:
S.35, 160/60
S.6, 159/59

Highway 1 and Highway 66 ROW has been surveyed in these areas and no cultural resources were recorded in these areas. Therefore, I recommend no additional cultural resource work provided the borrow is acquired from within a mile of each location, from within our ROW, and it is wasted into the same areas along the back slope. If the borrow is to come from any other area, it should be handled as contractor optioned material source according to Standard Specification 107.04.

Bob Christensen
Cultural Resource Section Leader
701-328-4539

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Wednesday, August 29, 2007 11:15 AM
To: Geoffrey_West@fpl.com
Cc: Martinson, Leon O.
Subject: RE: Langdon Nationwide Permit

Geoff,

Based on our conversations with the USACE, pursuant to Nationwide Permit 14, a preconstruction notification to the ND Regulator office of the USACE is required prior to construction if, (2) there is a discharge into a special aquatic site. Since the NDDOT is unaware of whether this area fits that description, beyond knowing that it is a jurisdictional area, we recommend that you provide notification to the USACE and copy us in on the letter. The letter should describe the project and impacts, including temporary impacts. Also describe your intentions to regrade the areas back to existing contours and plans for reseeding. Once we are in receipt of the letter, we will provide the approval to proceed.

Regards
 Sheri

From: Geoffrey_West@fpl.com [mailto:Geoffrey_West@fpl.com]
Sent: Tuesday, August 21, 2007 11:59 AM
To: Lares, Sheri G.
Cc: Court_Laska@fpl.com
Subject: Langdon Nationwide Permit

Sheri,

Court Laska contacted me and asked me to follow up with you concerning the nationwide permit. Our consultant who conducted the wetlands work at Langdon has provided a response below. Since we fall below the 1/10 of an acre for the Prior to Construction Notification (PCN) threshold, we are not required to notify the USACE before beginning road work. We did, however, contact the USACE to get a jurisdictional determination as part of our due diligence. That information is attached below as is the crossing matrix for wetland impacts at the Langdon site. Under the nationwide, we would have to notify the USACE if our impacts were greater than 1/10 acre. Court did not provide a contact number for you, so should you have any questions feel free to contact me at (561) 691-2644.

Regards,
 Geoff

Geoffrey B. West
 700 Universe Blvd.
 Juno Beach, FL 33408
 W: (561) 691-2644

----- Forwarded by Geoffrey West/HR/FPL on 08/21/2007 12:43 PM -----

"Dawdy, Greg" To: Geoffrey_West@fpl.com
 <Greg.Dawdy@tetrattech.com> cc: "Martorano, Tracey" <tracey.martorano@tteci.com>
 Subject: Langdon Nationwide Permit

08/21/2007 12:09 PM

9/12/2007

Geoff, as we discussed on the phone this morning we have received a jurisdictional determination (JD) of Project area from the USACE-Omaha District. A copy of the JD letter and associated map are attached.

Prior to the site visits Tetra Tech requested a jurisdictional determination of aquatic resources in the project area from the Bismarck, North Dakota office of the USACE – Omaha District. Tetra Tech provided the USACE with a figure depicting the project area with a preliminary array and requested that all areas within that project boundary be identified to aid FPLE in avoiding and minimizing impacts to aquatic resources. The USACE identified several drainages and tributaries to the Park River and the Nekoma Coulee within the site boundaries as jurisdictional waters of the United States (WUS). The areas as marked on the figure do not define actual wetland boundaries but rather only identify features which the USACE – Omaha District claimed as jurisdictional.

In the response to our request, the USACE also indicated that joint USEPA and USACE guidance based on the recent U.S Supreme Court decisions (Rapanos vs. the U.S and Carabell vs. the U.S) would soon be issued and this guidance may affect the jurisdictional status of some of these areas. The effect of these Supreme Court decisions would likely be reduction in the number of locations which would now be considered jurisdictional by the USACE.

Based on this JD and the proposed project impacts to jurisdictional waters as identified by the USACE-Omaha District, the proposed impacts are below the 1/10 acre notification threshold for Nationwide Permits 12 and 14.

Gregory C. Dawdy | Project Manager/Senior Biologist

Main: 618.343.2300 | Fax: 618.343.7042 | Direct Dial: 618.343.2342 | Cell: 314.706.4336

Tetra Tech | Complex World, Clear Solutions

1634 Eastport Plaza | Collinsville, IL 62234

www.tetrattech.com

PLEASE NOTE: This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

(See attached file: Fig1USACEDetReq.pdf)(See attached file: dept of army ltr.pdf)(See attached file: LngdnFig2_11x17.pdf)(See attached file: crossings_summary.xls)

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Tuesday, August 21, 2007 9:30 AM
To: Court_Laska@fpl.com
Cc: Martinson, Leon O.
Subject: RE: Nationwide permit

Good morning,

I have contacted the USACE regarding this project. The USACE indicated that FPL needs to contact the ND Regulatory office regarding jurisdiction and authorization under the NWP. Upon receiving documentation from the USACE that they concur with your assumptions, we will provide the approval to move forward with the roadway approach work.

Sheri Lares

From: Court_Laska@fpl.com [mailto:Court_Laska@fpl.com]
Sent: Monday, August 20, 2007 8:04 AM
To: Lares, Sheri G.
Subject: Re: Nationwide permit

Please see the attachments below.

(See attached file: crossings_summary_7_16_updated.xls)(See attached file: LngdnFig1Wetlands11x17Q_07_16_07.pa

Court Laska
 Civil Superintendent

Langdon Wind, LLC
 817 3rd St. Suite 106
 Langdon, ND 58249

(701) 256-3298 Office
 (701) 256-5393 Fax
 (701) 550-0993 Cell

Court_Laska@fpl.com

----- Forwarded by Court Laska/FPL Energy/FPL on 08/20/2007 08:02 AM -----

Geoffrey West To: Court Laska/FPL Energy/FPL@FPL
 cc:
 Subject: Re: Nationwide permit

08/20/2007
 07:57 AM

Court,

See the attached and scroll down to page 93 of the pdf. Our activities are regulated by the nationwide 12 and 14 permits. There is no formal notification to the US Army Corp of Engineers unless you exceed the thresholds set forth in these

9/12/2007

permits. That is where the wetland matrix and corresponding map comes in handy. Please let me know if you have any questions.

Geoff

(See attached file: NWP_2007_final.pdf)

Geoffrey B. West
700 Universe Blvd.
Juno Beach, FL 33408
W: (561) 691-2644

☞ Court Laska

Court Laska
Sent by: Court Laska
To: Geoffrey West/HR/FPL
cc: Connie Rausch/FPL Energy/FPL, Dick Rausch/FPL Energy/FPL, Geoffrey West/HR/FPL
Subject: Re: Nationwide permit

08/20/2007
07:34 AM

Geoff,

How's this coming along? We will need to get a copy by Weds or this could hold up the road progress. Thanks for your help.

Court Laska
Civil Superintendent

Langdon Wind, LLC
817 3rd St. Suite 106
Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com
☞ Court Laska

Court Laska
Sent by: Court Laska
To: Geoffrey West/HR/FPL
cc: Dick Rausch/FPL Energy/FPL, Connie Rausch/FPL Energy/FPL
Subject: Nationwide permit

9/12/2007

08/17/2007
09:08 AM

Geoff,

I had a request from the ND/DOT to see the Nationwide permit. They would like to see a copy before the issue anymore Permits for access roads. I f you could forward a copy to me that would be great.

Thanks,

Court Laska
Civil Superintendent

Langdon Wind, LLC
817 3rd St. Suite 106
Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com

9/12/2007

North Dakota Department of Transportation
 Temporary DRIVE PERMIT

COPY

Permit No. _____ District No. 63

APPLICANT <u>Langdon Wind LLC</u>	ADDRESS <u>817 Third St. Suite 106</u>	
CITY <u>Langdon</u>	STATE <u>ND</u>	ZIP <u>58249</u>

The Applicant requests permission to construct 1 ^{AMOUNT} private/commercial (circle one) drives on the state highway right of way along the E ^{DIRECTION} side of Route Hwy 1, 540ft North ^{LOCATION}, from Hwy 66 ^{TOWN, HIGHWAY, JUNCTION}, Mile Marker No. 205.395 204.966

described as follows: (Description of proposed work on state right of way and type of business served.)
 modify construction of a private access off of the highway to string roads leading to wind turbine sites. Modify an existing drive to allow access of long loads. This is only a temporary permit. When finished with project the drive is to be restored to its original size and all disturbed areas are to have topsoil replaced and reseeded. The existing pipe ~~will~~ ^{may} have to be temporarily lengthened to allow drainage. Temporary & permanent Inslopes to be 8:1

Applicant agrees that any permit issued and any entrance built or work done shall be in accordance with plans attached hereto and made a part hereof, and Permit Specifications printed on the reverse side of this sheet. If the applicant fails to construct the drive to the specified dimensions, including the proper culvert length and inslopes, the Department of Transportation, hereinafter referred to as NDDOT, will either cancel this permit and remove the drive or make the necessary corrections and the Applicant will reimburse NDDOT for such work.

To be signed by Owner; Partner; Corp. Pres., Vice Pres., or other authorized Corp. Officer. (If signed by other authorized Corp. Officer, please attach copy of Power of Attorney or other documentation showing authority to sign.)

APPLICANT:

Dick Rausch
 NAME (TYPE OR PRINT)
Dick Rausch
 SIGNATURE
Project Construction Manager
 TITLE
8-9-07
 DATE

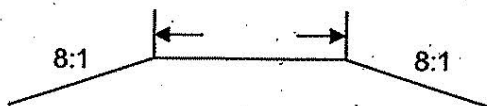
NORTH DAKOTA
 DEPARTMENT OF TRANSPORTATION

Wayde Swenson
 DISTRICT ENGINEER (TYPE OR PRINT)
Wayde Swenson
 SIGNATURE
9/17/07
 DATE

Permit granted: 9-17, 20 07

Construction shall be completed by: _____, 20 _____

Sketch:
 Project FASE 14 (1)
 Sta. 473+45 Lt



PERMIT SPECIFICATIONS

1. The total cost of all construction and maintenance of the work specified shall be borne by the Applicant, his grantees, successors, and assigns; except that the state will maintain the shoulder of the roadway.
2. It is understood by the Applicant that the state does not assume any responsibility for the removal or clearance of snow, ice, or sleet, or the opening of windrows of such materials, upon any portion of the drive even though snow, ice, or sleet is deposited or windrowed on said drive by its authorized representative engaged in normal winter maintenance operation.
3. No drive shall be considered as completed until checked and approved by NDDOT. Surfacing may be omitted on field entrances if so specified in the application.
4. A drive, as referred to in this permit, shall be the traveled area between the highway roadway surface and the adjacent right-of-way line. Said drive shall be used only for the purpose of providing entrance to and exit from the Applicant's property.
5. No drive, or improvement constructed on the highway right of way shall be altered or relocated without permission of the district engineer of NDDOT.
6. The Applicant agrees to perform all work in accordance with this permit, and to indemnify and hold harmless NDDOT, its officers, and employees from any and all liability, judgments, costs, expenses, and claims growing out of damages, or alleged damages, of any nature whatsoever, to any person or property arising out of performance or nonperformance of said work, or the existence of said drives.
7. It is understood by the Applicant that the location, construction, and maintenance of drives are under the supervision of NDDOT at all times, and that in granting this permit NDDOT waives none of its powers or rights to direct the removal, relocation, or proper maintenance in the future of any drives within the right of way of the state highway.
8. The granting of this permit does not vest the Applicant with the exclusive use of the drive. NDDOT retains the right to diminish and expand the use of the drive as required in the interest of the safety of highway traffic.
9. The Risk Management Appendix, attached, is hereby incorporated and made a part of this agreement.

Risk Management Appendix

Small, Low-Risk Leases, Easements, Licenses, and Permits with Private Individuals, Companies, Corporations, Etc. (referred to as Recipient):

Recipient agrees to indemnify, save, and hold harmless the State of North Dakota, its agencies, officers and employees (State), from claims resulting from the performance of the Recipient or its agent, including all costs, expenses, and attorneys' fees, which may in any manner result from or arise out of this agreement (i.e., low-risk lease, easement, license, or permit). Recipient also agrees to indemnify, save and hold the State harmless for all costs, expenses, and attorneys' fees incurred in establishing and litigating the indemnification coverage provided herein.

Recipient shall secure and keep in force during the term of this agreement the following insurance coverages covering the Recipient for any and all claims of any nature which may in any manner arise out of or result from this agreement:

- 1) **Commercial general liability** insurance – minimum limits of liability required are **\$250,000 per person** and **\$1,000,000 per occurrence**. If it is not practical for Recipient to carry commercial general liability insurance, Recipient **may substitute farm liability insurance, renters insurance, or home owners** insurance in the amount of **at least \$300,000**.
- 2) If Recipient may use an automobile in relation to the attached agreement, Recipient must secure **automobile liability** insurance with a minimum limit of liability of **at least \$250,000**. The above limits may be satisfied through a policy or policies of insurance, primary and excess, including the so called umbrella or catastrophe form.
- 3) The State of North Dakota, its agencies, officers, and employees (State) shall be endorsed as an **additional insured** on the above policies.

The Recipient shall furnish a certificate of insurance coverage evidencing the requirements in 1 through 3 above to the undersigned State representative prior to commencement of this agreement.

Recipients' insurance coverage shall be primary (i.e., pay first) as respects any insurance, self-insurance, or self-retention maintained by the State.

The Recipient must secure any necessary Workers Compensation coverage that may be required by State law.

When a portion of a Contract is sublet, the Recipient shall obtain insurance protection (as outlined above) to provide liability coverage to protect the Recipient and the State as a result of work undertaken by the Subcontractor or Sublessor. In addition, the Recipient shall ensure that any and all parties performing work under the Contract are covered by public liability insurance as outlined above. All Subcontractors or Sublessors performing work under the Contract are required to maintain the same scope of insurance required of the Recipient. The Recipient shall be held responsible for ensuring compliance with those requirements by all Subcontractors or Sublessors.

MARSH

CERTIFICATE OF INSURANCE

CERTIFICATE NUMBER
ATL-001245506-03

PRODUCER

MARSH USA, INC.
3475 PIEDMONT RD, N.E.
SUITE 1200
FAX: 404-760-5663
ATLANTA OFFICE.CERTREQUEST@MARSH.COM
ATLANTA, GA 30305

500469-ENERG-06/07

INSURED

FPL ENERGY, LLC
LANGDON WIND
ATTN: ERICA MCNABB
RISK MANAGEMENT DEPARTMENT
700 UNIVERSE BOULEVARD
JUNO BEACH, FL 33408

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE POLICY. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES DESCRIBED HEREIN.

COMPANIES AFFORDING COVERAGE

- COMPANY
A FEDERAL INSURANCE CO
- COMPANY
B AMERICAN HOME ASSURANCE COMPANY
- COMPANY
C
- COMPANY
D

COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE DESCRIBED HEREIN HAVE BEEN ISSUED TO THE INSURED NAMED HEREIN FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	GENERAL LIABILITY	3711-09-30	09/15/06	09/15/07	GENERAL AGGREGATE \$ 2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG \$ 1,000,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				PERSONAL & ADV INJURY \$ 1,000,000
	<input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE \$ 1,000,000
					FIRE DAMAGE (Any one fire) \$ 1,000,000
					MED EXP (Any one person) \$ 10,000
A	AUTOMOBILE LIABILITY	7352-37-31 (AOS)	09/15/06	09/15/07	COMBINED SINGLE LIMIT \$ 1,000,000
A	<input checked="" type="checkbox"/> ANY AUTO	7352-37-33 (VA)	09/15/06	09/15/07	BODILY INJURY (Per person) \$
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident) \$
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE \$
	<input type="checkbox"/> HIRED AUTOS				
	<input type="checkbox"/> NON-OWNED AUTOS				
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT \$
	<input type="checkbox"/> ANY AUTO				OTHER THAN AUTO ONLY: \$
					EACH ACCIDENT \$
					AGGREGATE \$
	EXCESS LIABILITY				EACH OCCURRENCE \$
	<input type="checkbox"/> UMBRELLA FORM				AGGREGATE \$
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM				\$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	WC 7207708 (AOS)	09/15/06	09/15/07	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER
B		WC 7207709 (CA)	09/15/06	09/15/07	EL EACH ACCIDENT \$ 1,000,000
B	THE PROPRIETOR, PARTNERS/EXECUTIVE OFFICERS ARE: <input type="checkbox"/> INCL	WC 7209331 (FL)	09/15/06	09/15/07	EL DISEASE-POLICY LIMIT \$ 1,000,000
B	<input type="checkbox"/> EXCL	WC 7209332 (OR)	09/15/06	09/15/07	EL DISEASE-EACH EMPLOYEE \$ 1,000,000
	OTHER				

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NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
608 EAST BOULEVARD AVENUE
BISMARCK, ND 58505-0700

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MARSH USA INC.

BY: Ronald A. Santaniello

Ronald A. Santaniello

MM1(3/02)

VALID AS OF: 04/24/07

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Friday, September 07, 2007 2:01 PM
To: Geoffrey_West@fpl.com; Semenko, Greg J.; Martinson, Leon O.
Cc: Court_Laska@fpl.com
Subject: RE: FW: FLP Energy Drive - Cavalier County

Leon

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Sheri

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Subject: Re: FW: FLP Energy Drive - Cavalier County

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Geoff

Geoffrey B. West
700 Universe Blvd.
Juno Beach, FL 33408
W: (561) 691-2644

☛ "Lares, Sheri G." <slares@nd.gov>

"Lares, Sheri G." To: "Martinson, Leon O." <lmartins@nd.gov>, Geoffrey_West@fpl.com
cc:
<slares@nd.gov> Subject: FW: FLP Energy Drive - Cavalier County

08/29/2007 12:18 PM

9/12/2007

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I checked the following locations in our database:

Cavalier County:

S.35, 160/60

S.6, 159/59

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Bob Christensen
Cultural Resource Section Leader
701-328-4539

9/12/2007

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Wednesday, August 29, 2007 11:15 AM
To: Geoffrey_West@fpl.com
Cc: Martinson, Leon O.
Subject: RE: Langdon Nationwide Permit

Geoff,

Based on our conversations with the USACE, pursuant to Nationwide Permit 14, a preconstruction notification to the ND Regulatory office of the USACE is required prior to construction if, (2) there is a discharge into a special aquatic site. Since the NDDOT is unaware of whether this area fits that description, beyond knowing that it is a jurisdictional area, we recommend that you provide notification to the USACE and copy us in on the letter. The letter should describe the project and impacts, including temporary impacts. Also describe your intentions to regrade the areas back to existing contours and plans for reseeding. Once we are in receipt of the letter, we will provide the approval to proceed.

Regards
 Sheri

From: Geoffrey_West@fpl.com [mailto:Geoffrey_West@fpl.com]
Sent: Tuesday, August 21, 2007 11:59 AM
To: Lares, Sheri G.
Cc: Court_Laska@fpl.com
Subject: Langdon Nationwide Permit

Sheri,

Court Laska contacted me and asked me to follow up with you concerning the nationwide permit. Our consultant who conducted the wetlands work at Langdon has provided a response below. Since we fall below the 1/10 of an acre for the Prior to Construction Notification (PCN) threshold, we are not required to notify the USACE before beginning road work. We did, however, contact the USACE to get a jurisdictional determination as part of our due diligence. That information is attached below as is the crossing matrix for wetland impacts at the Langdon site. Under the nationwide, we would have to notify the USACE if our impacts were greater than 1/10 acre. Court did not provide a contact number for you, so should you have any questions feel free to contact me at (561) 691-2644.

Regards,
 Geoff

Geoffrey B. West
 700 Universe Blvd.
 Juno Beach, FL 33408
 W: (561) 691-2644

----- Forwarded by Geoffrey West/HR/FPL on 08/21/2007 12:43 PM -----

"Dawdy, Greg" <Greg.Dawdy@tetrattech.com>
 To: Geoffrey_West@fpl.com
 cc: "Martorano, Tracey" <tracey.martorano@tteci.com>
 Subject: Langdon Nationwide Permit

08/21/2007 12:09 PM

9/12/2007

Geoff, as we discussed on the phone this morning we have received a jurisdictional determination (JD) of Project area from the USACE-Omaha District. A copy of the JD letter and associated map are attached.

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Based on this JD and the proposed project impacts to jurisdictional waters as identified by the USACE-Omaha District the proposed impacts are below the 1/10 acre notification threshold for Nationwide Permits 12 and 14.

Gregory C. Dawdy | Project Manager/Senior Biologist

Main: 618.343.2300 | Fax: 618.343.7042 | Direct Dial: 618.343.2342 | Cell: 314.706.4336

Tetra Tech | Complex World, Clear Solutions

1634 Eastport Plaza | Collinsville, IL 62234

www.tetratech.com

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(See attached file: Fig1USACEDetReq.pdf)(See attached file: dept of army ltr.pdf)(See attached file: LngdnFig2_11x17.pdf)(See attached file: crossings_summary.xls)

Martinson, Leon O.

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Cc: Martinson, Leon O.
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I have contacted the USACE regarding this project. The USACE indicated that FPL needs to contact the ND Regulatory office regarding jurisdiction and authorization under the NWP. Upon receiving documentation from the USACE that they concur with your assumptions, we will provide the approval to move forward with the roadway approach work.

Sheri Lares

From: Court_Laska@fpl.com [mailto:Court_Laska@fpl.com]
Sent: Monday, August 20, 2007 8:04 AM
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Subject: Re: Nationwide permit

Please see the attachments below.

(See attached file: crossings_summary_7_16_updated.xls)(See attached file: LngdnFig1Wetlands11x17Q_07_16_07.p

Court Laska
Civil Superintendent

Langdon Wind, LLC
817 3rd St. Suite 106
Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com

----- Forwarded by Court Laska/FPL Energy/FPL on 08/20/2007 08:02 AM -----

Geoffrey West To: Court Laska/FPL Energy/FPL@FPL
cc:
Subject: Re: Nationwide permit

08/20/2007
07:57 AM

Court,

See the attached and scroll down to page 93 of the pdf. Our activities are regulated by the nationwide 12 and 14 permits. There is no formal notification to the US Army Corp of Engineers unless you exceed the thresholds set forth in these

9/12/2007


permits. That is where the wetland matrix and corresponding map comes in handy. Please let me know if you have any questions.

Geoff

(See attached file: NWP_2007_final.pdf)

Geoffrey B. West
700 Universe Blvd.
Juno Beach, FL 33408
W: (561) 691-2644

☐ Court Laska

Court Laska
Sent by: **Court Laska**
To: Geoffrey West/HR/FPL
cc: Connie Rausch/FPL Energy/FPL, Dick Rausch/FPL Energy/FPL, Geoffrey West/HR/FPL
Subject: Re: Nationwide permit 

08/20/2007
07:34 AM

Geoff,

How's this coming along? We will need to get a copy by Weds or this could hold up the road progress. Thanks for your help.

Court Laska
Civil Superintendent

Langdon Wind, LLC
817 3rd St. Suite 106
Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com
☐ Court Laska

Court Laska
Sent by: **Court Laska**
To: Geoffrey West/HR/FPL
cc: Dick Rausch/FPL Energy/FPL, Connie Rausch/FPL Energy/FPL
Subject: Nationwide permit

9/12/2007

08/17/2007
09:08 AM

Geoff,

I had a request from the ND/DOT to see the Nationwide permit. They would like to see a copy before the issue anymore Permits for access roads. If you could forward a copy to me that would be great.

Thanks,

Court Laska
Civil Superintendent

Langdon Wind, LLC
817 3rd St. Suite 106
Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com

9/12/2007

North Dakota Department of Transportation
Temporary DRIVE PERMIT

COPY

Permit No. _____

District No. 63

APPLICANT <u>Langdon Wind LLC</u>		ADDRESS <u>817 3rd St, Suite 106</u>	
CITY <u>Langdon</u>	STATE <u>ND</u>	ZIP <u>58249</u>	

The Applicant requests permission to construct 1 ^{AMOUNT} private commercial (circle one) drives on the state highway right of way along the S ^{DIRECTION} side of Route Hwy 66, 3 1/2 miles East ^{LOCATION} from Hwy 1 East ^{TOWN/HIGHWAY, JUNCTION}, Mile Marker No. 82.419 81.963 Rt

described as follows: (Description of proposed work on state right of way and type of business served.)
 From Modify Construction of a private Access off of the Hwy to string roads leading to wind turbine sites. Modify an existing drive to allow access ~~to~~ of long loads. ~~This~~ This is only a temporary permit when finished with project drive is to be restored to it's original shape and all disturbed areas are to have top soil replaced and seeded. ^{size}
 Temporary and permanent Inslopes are to be 8:1

Applicant agrees that any permit issued, and any entrance built or work done shall be in accordance with plans attached hereto and made a part hereof, and Permit Specifications printed on the reverse side of this sheet. If the applicant fails to construct the drive to the specified dimensions, including the proper culvert length and inslopes, the Department of Transportation, hereinafter referred to as NDDOT, will either cancel this permit and remove the drive or make the necessary corrections and the Applicant will reimburse NDDOT for such work.

To be signed by Owner; Partner; Corp. Pres., Vice Pres., or other authorized Corp. Officer. (If signed by other authorized Corp. Officer, please attach copy of Power of Attorney or other documentation showing authority to sign.)

APPLICANT:

Dick Rausch
 NAME (TYPE OR PRINT)
Dick Rausch
 SIGNATURE
Project Construction Manager
 TITLE
8-9-07
 DATE

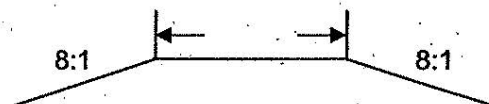
NORTH DAKOTA
 DEPARTMENT OF TRANSPORTATION

Wayde Swenson
 DISTRICT ENGINEER (TYPE OR PRINT)
Wayde Swenson
 SIGNATURE
9/17/07
 DATE

Permit granted: 9-17, 20 07

Construction shall be completed by: _____, 20 _____

Sketch:
 Project ASI-14(2)
 STA 157+26 Rt



PERMIT SPECIFICATIONS

1. The total cost of all construction and maintenance of the work specified shall be borne by the Applicant, his grantees, successors, and assigns; except that the state will maintain the shoulder of the roadway.
2. It is understood by the Applicant that the state does not assume any responsibility for the removal or clearance of snow, ice, or sleet, or the opening of windrows of such materials, upon any portion of the drive even though snow, ice, or sleet is deposited or windrowed on said drive by its authorized representative engaged in normal winter maintenance operation.
3. No drive shall be considered as completed until checked and approved by NDDOT. Surfacing may be omitted on field entrances if so specified in the application.
4. A drive, as referred to in this permit, shall be the traveled area between the highway roadway surface and the adjacent right-of-way line. Said drive shall be used only for the purpose of providing entrance to and exit from the Applicant's property.
5. No drive, or improvement constructed on the highway right of way shall be altered or relocated without permission of the district engineer of NDDOT.
6. The Applicant agrees to perform all work in accordance with this permit, and to indemnify and hold harmless NDDOT, its officers, and employees from any and all liability, judgments, costs, expenses, and claims growing out of damages, or alleged damages, of any nature whatsoever, to any person or property arising out of performance or nonperformance of said work, or the existence of said drives.
7. It is understood by the Applicant that the location, construction, and maintenance of drives are under the supervision of NDDOT at all times, and that in granting this permit NDDOT waives none of its powers or rights to direct the removal, relocation, or proper maintenance in the future of any drives within the right of way of the state highway.
8. The granting of this permit does not vest the Applicant with the exclusive use of the drive. NDDOT retains the right to diminish and expand the use of the drive as required in the interest of the safety of highway traffic.
9. The Risk Management Appendix, attached, is hereby incorporated and made a part of this agreement.

Risk Management Appendix

Small, Low-Risk Leases, Easements, Licenses, and Permits with Private Individuals, Companies, Corporations, Etc. (referred to as Recipient):

Recipient agrees to indemnify, save, and hold harmless the State of North Dakota, its agencies, officers and employees (State), from claims resulting from the performance of the Recipient or its agent, including all costs, expenses, and attorneys' fees, which may in any manner result from or arise out of this agreement (i.e., low-risk lease, easement, license, or permit). Recipient also agrees to indemnify, save and hold the State harmless for all costs, expenses, and attorneys' fees incurred in establishing and litigating the indemnification coverage provided herein.

Recipient shall secure and keep in force during the term of this agreement the following insurance coverages covering the Recipient for any and all claims of any nature which may in any manner arise out of or result from this agreement:

- 1) **Commercial general liability** insurance – minimum limits of liability required are **\$250,000 per person** and **\$1,000,000 per occurrence**. If it is not practical for Recipient to carry commercial general liability insurance, Recipient **may substitute farm liability insurance, renters insurance, or home owners** insurance in the amount of **at least \$300,000**.
- 2) If Recipient may use an automobile in relation to the attached agreement, Recipient must secure **automobile liability** insurance with a minimum limit of liability of **at least \$250,000**. The above limits may be satisfied through a policy or policies of insurance, primary and excess, including the so called umbrella or catastrophe form.
- 3) The State of North Dakota, its agencies, officers, and employees (State) shall be endorsed as an **additional insured** on the above policies.

The Recipient shall furnish a certificate of insurance coverage evidencing the requirements in 1 through 3 above to the undersigned State representative prior to commencement of this agreement.

Recipients' insurance coverage shall be primary (i.e., pay first) as respects any insurance, self-insurance, or self-retention maintained by the State.

The Recipient must secure any necessary Workers Compensation coverage that may be required by State law.

When a portion of a Contract is sublet, the Recipient shall obtain insurance protection (as outlined above) to provide liability coverage to protect the Recipient and the State as a result of work undertaken by the Subcontractor or Sublessor. In addition, the Recipient shall ensure that any and all parties performing work under the Contract are covered by public liability insurance as outlined above. All Subcontractors or Sublessors performing work under the Contract are required to maintain the same scope of insurance required of the Recipient. The Recipient shall be held responsible for ensuring compliance with those requirements by all Subcontractors or Sublessors.

MARSH

CERTIFICATE OF INSURANCE

CERTIFICATE NUMBER
ATL-001245506-03

PRODUCER

MARSH USA, INC.
3475 PIEDMONT RD, N.E.
SUITE 1200
FAX: 404-760-5663
ATLANTAOFFICE.CERTREQUEST@MARSH.COM
ATLANTA, GA 30305

500469-ENERG-06/07

INSURED

FPL ENERGY, LLC
LANGDON WIND
ATTN: ERICA MCNABB
RISK MANAGEMENT DEPARTMENT
700 UNIVERSE BOULEVARD
JUNO BEACH, FL 33408

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE POLICY. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES DESCRIBED HEREIN.

COMPANIES AFFORDING COVERAGE

COMPANY A	FEDERAL INSURANCE CO
COMPANY B	AMERICAN HOME ASSURANCE COMPANY
COMPANY C	
COMPANY D	

COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE DESCRIBED HEREIN HAVE BEEN ISSUED TO THE INSURED NAMED HEREIN FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR OWNER'S & CONTRACTOR'S PROT	3711-09-30	09/15/06	09/15/07	GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 1,000,000 PERSONAL & ADV INJURY \$ 1,000,000 EACH OCCURRENCE \$ 1,000,000 FIRE DAMAGE (Any one fire) \$ 1,000,000 MED EXP (Any one person) \$ 10,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS HIRED AUTOS NON-OWNED AUTOS	7352-37-31 (AOS) 7352-37-33 (VA)	09/15/06 09/15/06	09/15/07 09/15/07	COMBINED SINGLE LIMIT \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE \$
	GARAGE LIABILITY <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: \$ EACH ACCIDENT \$ AGGREGATE \$
	EXCESS LIABILITY <input type="checkbox"/> UMBRELLA FORM OTHER THAN UMBRELLA FORM				EACH OCCURRENCE \$ AGGREGATE \$ \$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY THE PROPRIETOR, PARTNERS/EXECUTIVE OFFICERS ARE: <input type="checkbox"/> INCL <input type="checkbox"/> EXCL	WC 7207708 (AOS) WC 7207709 (CA) WC 7209331 (FL) WC 7209332 (OR)	09/15/06 09/15/06 09/15/06 09/15/06	09/15/07 09/15/07 09/15/07 09/15/07	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER EL EACH ACCIDENT \$ 1,000,000 EL DISEASE-POLICY LIMIT \$ 1,000,000 EL DISEASE-EACH EMPLOYEE \$ 1,000,000
	OTHER				

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

THE STATE OF NORTH DAKOTA AND ITS AGENCIES, OFFICERS, AND EMPLOYEE (STATE) ARE INCLUDED AS ADDITIONAL INSURED ON THE GENERAL LIABILITY AND AUTOMOBILE POLICY AS ADDITIONAL INSURED AS REQUIRED BY WRITTEN CONTRACT. COVERAGE INCLUDES WAIVER OF SUBROGATION IN FAVOR OF THE STATE OF ND.

CERTIFICATE HOLDER

NORTH DAKOTA DEPARTMENT
OF TRANSPORTATION
608 EAST BOULEVARD AVENUE
BISMARCK, ND 58505-0700

CANCELLATION

SHOULD ANY OF THE POLICIES DESCRIBED HEREIN BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE INSURER AFFORDING COVERAGE WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED HEREIN, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER AFFORDING COVERAGE, ITS AGENTS OR REPRESENTATIVES, OR THE ISSUER OF THIS CERTIFICATE

MARSH USA INC.

BY: Ronald A. Santaniello

Ronald A. Santaniello

MM1(3/02)

VALID AS OF: 04/24/07

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Friday, September 07, 2007 2:01 PM
To: Geoffrey_West@fpl.com; Semenko, Greg J.; Martinson, Leon O.
Cc: Court_Laska@fpl.com
Subject: RE: FW: FLP Energy Drive - Cavalier County

Leon

FPL is good to go since they know will be authorized under NW 12 rather than 14.

Sheri

From: Geoffrey_West@fpl.com [mailto:Geoffrey_West@fpl.com]
Sent: Thursday, August 30, 2007 4:27 PM
To: Lares, Sheri G.
Cc: Court_Laska@fpl.com
Subject: Re: FW: FLP Energy Drive - Cavalier County

Hi Sheri,

I talked with Toni at the USACE in great length concerning the project and now understand your reservations under Nationwide 14. She explained that the work we are doing should fall under the Nationwide 12 only, even the access roads we are constructing. The "devil is in the details" as she explained it. Our rationale came from previous projects where we submitted a PCN for the Nationwide 12 and 14 for similar access roads.

Therefore based on our discussion, our activities fall under NWP 12 and still under the 1/10 of an acre threshold for a PCN. I appreciate you bringing this matter to our attention. As I told Toni, we spend quite a bit of time conducting due diligence so that we can avoid impacts to wetlands. We would rather spend the extra effort up front in micro-siting turbines and re-routing roads before construction rather than delay the construction process, because as you know there is just a short season to work before winter sets in. Should you have any questions, please feel free to contact me at (561) 691-2644 or on my cell at (561) 758-4277.

Geoff

Geoffrey B. West
 700 Universe Blvd.
 Juno Beach, FL 33408
 W: (561) 691-2644

▼ "Lares, Sheri G." <slares@nd.gov>

"Lares, Sheri G." To: "Martinson, Leon O." <lmartins@nd.gov>, Geoffrey_West@fpl.com
 cc:
 <slares@nd.gov> Subject: FW: FLP Energy Drive - Cavalier County

08/29/2007 12:18
 PM

9/12/2007

Leon,

I received this information below from our Cultural Resources Section. I would add that any waste material shall not be stockpiled in wetland areas.

Thanks
Sheri

I understand that FLP Energy would like to temporarily improve three drives to accommodate trucks hauling their large wind turbine parts. These improvements consist of increasing the radius of the drives and the Highway 1/66 intersection. I assume that this would be accomplished by placing borrow along the existing drives/roadways, and then removing the borrow and wasting it when it is no longer needed.

I checked the following locations in our database:

Cavalier County:
S.35, 160/60
S.6, 159/59

Highway 1 and Highway 66 ROW has been surveyed in these areas and no cultural resources were recorded in these areas. Therefore, I recommend no additional cultural resource work provided the borrow is acquired from within a mile of each location, from within our ROW, and it is wasted into the same areas along the back slope. If the borrow is to come from any other area, it should be handled as contractor optioned material source according to Standard Specification 107.04.

Bob Christensen
Cultural Resource Section Leader
701-328-4539

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Regards
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Cc: Court_Laska@fpl.com
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"Dawdy, Greg" To: Geoffrey_West@fpl.com
 <Greg.Dawdy@tetrattech.com> cc: "Martorano, Tracey" <tracey.martorano@tteci.com>
 Subject: Langdon Nationwide Permit

08/21/2007 12:09 PM

9/12/2007

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Gregory C. Dawdy | Project Manager/Senior Biologist

Main: 618.343.2300 | Fax: 618.343.7042 | Direct Dial: 618.343.2342 | Cell: 314.706.4336

Tetra Tech | Complex World, Clear Solutions

1634 Eastport Plaza | Collinsville, IL 62234

www.tetrattech.com

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(See attached file: Fig1USACEDetReq.pdf)(See attached file: dept of army ltr.pdf)(See attached file: LngdnFig2_11x17.pdf)(See attached file: crossings_summary.xls)

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Cc: Martinson, Leon O.
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Sheri Lares

From: Court_Laska@fpl.com [mailto:Court_Laska@fpl.com]
Sent: Monday, August 20, 2007 8:04 AM
To: Lares, Sheri G.
Subject: Re: Nationwide permit

Please see the attachments below.

(See attached file: crossings_summary_7_16_updated.xls)(See attached file: LngdnFig1Wetlands11x17Q_07_16_07

Court Laska
 Civil Superintendent

Langdon Wind, LLC
 817 3rd St. Suite 106
 Langdon, ND 58249

(701) 256-3298 Office
 (701) 256-5393 Fax
 (701) 550-0993 Cell

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 There is no formal notification to the US Army Corp of Engineers unless you exceed the thresholds set forth in these

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Geoff

(See attached file: NWP_2007_final.pdf)

Geoffrey B. West
700 Universe Blvd.
Juno Beach, FL 33408
W: (561) 691-2644

Court Laska

To: Geoffrey West/HR/FPL
cc: Connie Rausch/FPL Energy/FPL, Dick Rausch/FPL Energy/FPL, Geoffrey West/HR/FPL
Sent by: Subject: Re: Nationwide permit
Court Laska

08/20/2007
07:34 AM

Geoff,

How's this coming along? We will need to get a copy by Weds or this could hold up the road progress. Thanks for your help.

Court Laska
Civil Superintendent

Langdon Wind, LLC
817 3rd St. Suite 106
Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com
Court Laska

To: Geoffrey West/HR/FPL
cc: Dick Rausch/FPL Energy/FPL, Connie Rausch/FPL Energy/FPL
Subject: Nationwide permit
Sent by: Court Laska

9/12/2007

08/17/2007
09:08 AM

Geoff,

I had a request from the ND/DOT to see the Nationwide permit. They would like to see a copy before the issue anymo Permits for access roads. I f you could forward a copy to me that would be great.

Thanks,

Court Laska
Civil Superintendent

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Langdon, ND 58249

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(701) 550-0993 Cell

Court_Laska@fpl.com

North Dakota Department of Transportation
Temporary DRIVE PERMIT

COPY

Permit No. _____ District No. 63

APPLICANT <u>FPL Energy Langdon Wind LLC</u>		ADDRESS <u>10812 Hwy 66 NE</u>	
CITY <u>Osnabrock</u>	STATE <u>ND</u>	ZIP <u>58269</u>	

The Applicant requests permission to construct 1 private/commercial (circle one) drives on the state highway right of way along the E side of Route Hwy 1, 3 miles N, from Hwy 66, Mile Marker No. 207.8

described as follows: (Description of proposed work on state right of way and type of business served.)

Temporarily widen existing approach at 87th St NE for haul truck entry. Later reclaim approach back to original after project completion. *modify an existing drive to allow access of long loads. This is only a temporary permit, when finished with project the drive is to be restored to its original size and all disturbed areas are to have topsoil replaced and seeded. The existing pipe may have to be temporarily lengthened to allow drainage. Temporary and permanent inslopes to be 8:1*

Applicant agrees that any permit issued and any entrance built or work done shall be in accordance with plans attached hereto and made a part hereof, and Permit Specifications printed on the reverse side of this sheet. If the applicant fails to construct the drive to the specified dimensions, including the proper culvert length and inslopes, the Department of Transportation, hereinafter referred to as NDDOT, will either cancel this permit and remove the drive or make the necessary corrections and the Applicant will reimburse NDDOT for such work.

To be signed by Owner; Partner; Corp. Pres., Vice Pres., or other authorized Corp. Officer. (If signed by other authorized Corp. Officer, please attach copy of Power of Attorney or other documentation showing authority to sign.)

APPLICANT:

Dick Rausch
NAME (TYPE OR PRINT)
[Signature]
SIGNATURE
P.M. FPLE
TITLE
9/17/07
DATE

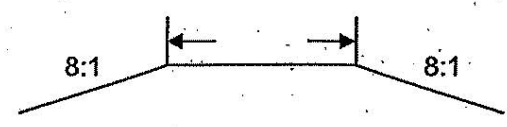
NORTH DAKOTA
DEPARTMENT OF TRANSPORTATION

Wayde Swenson
DISTRICT ENGINEER (TYPE OR PRINT)
Wayde Swenson
SIGNATURE
9/20/07
DATE

Permit granted: 9-20, 2007

Construction shall be completed by: _____, 20____

Sketch:
FASI 14(1)
st 9 318+72.24+



(Original to District File, copy to Applicant.)

(over)

PERMIT SPECIFICATIONS

1. The total cost of all construction and maintenance of the work specified shall be borne by the Applicant, his grantees, successors, and assigns; except that the state will maintain the shoulder of the roadway.
2. It is understood by the Applicant that the state does not assume any responsibility for the removal or clearance of snow, ice, or sleet, or the opening of windrows of such materials, upon any portion of the drive even though snow, ice, or sleet is deposited or windrowed on said drive by its authorized representative engaged in normal winter maintenance operation.
3. No drive shall be considered as completed until checked and approved by NDDOT. Surfacing may be omitted on field entrances if so specified in the application.
4. A drive, as referred to in this permit, shall be the traveled area between the highway roadway surface and the adjacent right-of-way line. Said drive shall be used only for the purpose of providing entrance to and exit from the Applicant's property.
5. No drive, or improvement constructed on the highway right of way shall be altered or relocated without permission of the district engineer of NDDOT.
6. The Applicant agrees to perform all work in accordance with this permit, and to indemnify and hold harmless NDDOT, its officers, and employees from any and all liability, judgments, costs, expenses, and claims growing out of damages, or alleged damages, of any nature whatsoever, to any person or property arising out of performance or nonperformance of said work, or the existence of said drives.
7. It is understood by the Applicant that the location, construction, and maintenance of drives are under the supervision of NDDOT at all times, and that in granting this permit NDDOT waives none of its powers or rights to direct the removal, relocation, or proper maintenance in the future of any drives within the right of way of the state highway.
8. The granting of this permit does not vest the Applicant with the exclusive use of the drive. NDDOT retains the right to diminish and expand the use of the drive as required in the interest of the safety of highway traffic.
9. The Risk Management Appendix, attached, is hereby incorporated and made a part of this agreement.

Risk Management Appendix

Small, Low-Risk Leases, Easements, Licenses, and Permits with Private Individuals, Companies, Corporations, Etc. (referred to as Recipient):

Recipient agrees to indemnify, save, and hold harmless the State of North Dakota, its agencies, officers and employees (State), from claims resulting from the performance of the Recipient or its agent, including all costs, expenses, and attorneys' fees, which may in any manner result from or arise out of this agreement (i.e., low-risk lease, easement, license, or permit). Recipient also agrees to indemnify, save and hold the State harmless for all costs, expenses, and attorneys' fees incurred in establishing and litigating the indemnification coverage provided herein.

Recipient shall secure and keep in force during the term of this agreement the following insurance coverages covering the Recipient for any and all claims of any nature which may in any manner arise out of or result from this agreement:

- 1) **Commercial general liability** insurance – minimum limits of liability required are **\$250,000 per person** and **\$1,000,000 per occurrence**. If it is not practical for Recipient to carry commercial general liability insurance, Recipient **may substitute farm liability insurance, renters insurance, or home owners** insurance in the amount of **at least \$300,000**.
- 2) If Recipient may use an automobile in relation to the attached agreement, Recipient must secure **automobile liability** insurance with a minimum limit of liability of **at least \$250,000**. The above limits may be satisfied through a policy or policies of insurance, primary and excess, including the so called umbrella or catastrophe form.
- 3) The State of North Dakota, its agencies, officers, and employees (State) shall be endorsed as an **additional insured** on the above policies.

The Recipient shall furnish a certificate of insurance coverage evidencing the requirements in 1 through 3 above to the undersigned State representative prior to commencement of this agreement.

Recipients' insurance coverage shall be primary (i.e., pay first) as respects any insurance, self-insurance, or self-retention maintained by the State.

The Recipient must secure any necessary Workers Compensation coverage that may be required by State law.

When a portion of a Contract is sublet, the Recipient shall obtain insurance protection (as outlined above) to provide liability coverage to protect the Recipient and the State as a result of work undertaken by the Subcontractor or Sublessor. In addition, the Recipient shall ensure that any and all parties performing work under the Contract are covered by public liability insurance as outlined above. All Subcontractors or Sublessors performing work under the Contract are required to maintain the same scope of insurance required of the Recipient. The Recipient shall be held responsible for ensuring compliance with those requirements by all Subcontractors or Sublessors.

MARSH

CERTIFICATE OF INSURANCE

CERTIFICATE NUMBER
ATL-001245506-03

PRODUCER

MARSH USA, INC.
3475 PIEDMONT RD, N.E.
SUITE 1200
FAX: 404-760-5663
ATLANTA OFFICE.CERTREQUEST@MARSH.COM
ATLANTA, GA 30305

500469-ENERG-06/07

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE POLICY. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES DESCRIBED HEREIN.

COMPANIES AFFORDING COVERAGE

- COMPANY
A FEDERAL INSURANCE CO
- COMPANY
B AMERICAN HOME ASSURANCE COMPANY
- COMPANY
C
- COMPANY
D

INSURED

FPL ENERGY, LLC
LANGDON WIND
ATTN: ERICA MCNABB
RISK MANAGEMENT DEPARTMENT
700 UNIVERSE BOULEVARD
JUNO BEACH, FL 33408

COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE DESCRIBED HEREIN HAVE BEEN ISSUED TO THE INSURED NAMED HEREIN FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A	GENERAL LIABILITY	3711-09-30	09/15/06	09/15/07	GENERAL AGGREGATE \$ 2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMPI/OP AGG \$ 1,000,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				PERSONAL & ADV INJURY \$ 1,000,000
	<input type="checkbox"/> OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE \$ 1,000,000
					FIRE DAMAGE (Any one fire) \$ 1,000,000
					MED EXP (Any one person) \$ 10,000
A	AUTOMOBILE LIABILITY	7352-37-31 (AOS)	09/15/06	09/15/07	COMBINED SINGLE LIMIT \$ 1,000,000
	<input checked="" type="checkbox"/> ANY AUTO	7352-37-33 (VA)	09/15/06	09/15/07	BODILY INJURY (Per person) \$
	<input type="checkbox"/> ALL OWNED AUTOS				BODILY INJURY (Per accident) \$
	<input type="checkbox"/> SCHEDULED AUTOS				PROPERTY DAMAGE \$
	<input type="checkbox"/> HIRED AUTOS				
	<input type="checkbox"/> NON-OWNED AUTOS				
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT \$
	<input type="checkbox"/> ANY AUTO				OTHER THAN AUTO ONLY: \$
					EACH ACCIDENT \$
					AGGREGATE \$
	EXCESS LIABILITY				EACH OCCURRENCE \$
	<input type="checkbox"/> UMBRELLA FORM				AGGREGATE \$
	<input type="checkbox"/> OTHER THAN UMBRELLA FORM				\$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	WC 7207708 (AOS)	09/15/06	09/15/07	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER \$
		WC 7207709 (CA)	09/15/06	09/15/07	EL EACH ACCIDENT \$ 1,000,000
	THE PROPRIETOR/ PARTNERS/EXECUTIVE OFFICERS ARE:	<input type="checkbox"/> INCL WC 7209331 (FL)	09/15/06	09/15/07	EL DISEASE-POLICY LIMIT \$ 1,000,000
		<input type="checkbox"/> EXCL WC 7209332 (OR)	09/15/06	09/15/07	EL DISEASE-EACH EMPLOYEE \$ 1,000,000
	OTHER				

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

THE STATE OF NORTH DAKOTA AND ITS AGENCIES, OFFICERS, AND EMPLOYEE (STATE) ARE INCLUDED AS ADDITIONAL INSURED ON THE GENERAL LIABILITY AND AUTOMOBILE POLICY AS ADDITIONAL INSURED AS REQUIRED BY WRITTEN CONTRACT. COVERAGE INCLUDES WAIVER OF SUBROGATION IN FAVOR OF THE STATE OF ND.

CERTIFICATE HOLDER

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION
608 EAST BOULEVARD AVENUE
BISMARCK, ND 58505-0700

CANCELLATION

SHOULD ANY OF THE POLICIES DESCRIBED HEREIN BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE INSURER AFFORDING COVERAGE WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED HEREIN, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER AFFORDING COVERAGE, ITS AGENTS OR REPRESENTATIVES, OR THE ISSUER OF THIS CERTIFICATE.

MARSH USA INC.

By: Ronald A. Santaniello *Ronald A. Santaniello*

MM1(3/02)

VALID AS OF: 04/24/07

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Friday, September 07, 2007 2:01 PM
To: Geoffrey_West@fpl.com; Semenko, Greg J.; Martinson, Leon O.
Cc: Court_Laska@fpl.com
Subject: RE: FW: FLP Energy Drive - Cavalier County

Leon

FPL is good to go since they know will be authorized under NW 12 rather than 14.

Sheri

From: Geoffrey_West@fpl.com [mailto:Geoffrey_West@fpl.com]
Sent: Thursday, August 30, 2007 4:27 PM
To: Lares, Sheri G.
Cc: Court_Laska@fpl.com
Subject: Re: FW: FLP Energy Drive - Cavalier County

Hi Sheri,

I talked with Toni at the USACE in great length concerning the project and now understand your reservations under the Nationwide 14. She explained that the work we are doing should fall under the Nationwide 12 only, even the access roads we are constructing. The "devil is in the details" as she explained it. Our rationale came from previous projects where we submitted a PCN for the Nationwide 12 and 14 for similar access roads.

Therefore based on our discussion, our activities fall under NWP 12 and still under the 1/10 of an acre threshold for the PCN. I appreciate you bringing this matter to our attention. As I told Toni, we spend quite a bit of time conducting due diligence so that we can avoid impacts to wetlands. We would rather spend the extra effort up front in micro-siting turbines and re-routing roads before construction rather than delay the construction process, because as you know there just a short season to work before winter sets in. Should you have any questions, please feel free to contact me at (561) 691-2644 or on my cell at (561) 758-4277.

Geoff

Geoffrey B. West
 700 Universe Blvd.
 Juno Beach, FL 33408
 W: (561) 691-2644

☐ "Lares, Sheri G." <slares@nd.gov>

"Lares, Sheri G." To: "Martinson, Leon O." <lmartins@nd.gov>, Geoffrey_West@fpl.com
 cc:
 <slares@nd.gov> Subject: FW: FLP Energy Drive - Cavalier County

08/29/2007 12:18
 PM

9/12/2007

Leon,

I received this information below from our Cultural Resources Section. I would add that any waste material shall not be stockpiled in wetland areas.

Thanks
Sheri

I understand that FLP Energy would like to temporarily improve three drives to accommodate trucks hauling their large wind turbine parts. These improvements consist of increasing the radius of the drives and the Highway 1/66 intersection. I assume that this would be accomplished by placing borrow along the existing drives/roadways, and then removing the borrow and wasting it when it is no longer needed.

I checked the following locations in our database:

Cavalier County:

S.35, 160/60

S.6, 159/59

Highway 1 and Highway 66 ROW has been surveyed in these areas and no cultural resources were recorded in these areas. Therefore, I recommend no additional cultural resource work provided the borrow is acquired from within a mile of each location, from within our ROW, and it is wasted into the same areas along the back slope. If the borrow is to come from any other area, it should be handled as contractor optioned material source according to Standard Specification 107.04.

Bob Christensen
Cultural Resource Section Leader
701-328-4539

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Wednesday, August 29, 2007 11:15 AM
To: Geoffrey_West@fpl.com
Cc: Martinson, Leon O.
Subject: RE: Langdon Nationwide Permit

Geoff,

Based on our conversations with the USACE, pursuant to Nationwide Permit 14, a preconstruction notification to the ND Regulator office of the USACE is required prior to construction if, (2) there is a discharge into a special aquatic site. Since the NDDOT is unaware of whether this area fits that description, beyond knowing that it is a jurisdictional area, we recommend that you provide notification to the USACE and copy us in on the letter. The letter should describe the project and impacts, including temporary impacts. Also describe your intentions to regrade the areas back to existing contours and plans for reseeding. Once we are in receipt of the letter, we will provide the approval to proceed.

Regards
 Sheri

From: Geoffrey_West@fpl.com [mailto:Geoffrey_West@fpl.com]
Sent: Tuesday, August 21, 2007 11:59 AM
To: Lares, Sheri G.
Cc: Court_Laska@fpl.com
Subject: Langdon Nationwide Permit

Sheri,

Court Laska contacted me and asked me to follow up with you concerning the nationwide permit. Our consultant who conducted the wetlands work at Langdon has provided a response below. Since we fall below the 1/10 of an acre for the Prior to Construction Notification (PCN) threshold, we are not required to notify the USACE before beginning road work. We did, however, contact the USACE to get a jurisdictional determination as part of our due diligence. That information is attached below as is the crossing matrix for wetland impacts at the Langdon site. Under the nationwide, we would have to notify the USACE if our impacts were greater than 1/10 acre. Court did not provide a contact number for you, so should you have any questions feel free to contact me at (561) 691-2644.

Regards,
 Geoff

Geoffrey B. West
 700 Universe Blvd.
 Juno Beach, FL 33408
 W: (561) 691-2644

----- Forwarded by Geoffrey West/HR/FPL on 08/21/2007 12:43 PM -----

"Dawdy, Greg" To: Geoffrey_West@fpl.com
 <Greg.Dawdy@tetrattech.com> cc: "Martorano, Tracey" <tracey.martorano@tteci.com>
 Subject: Langdon Nationwide Permit

08/21/2007 12:09 PM

9/12/2007

Geoff, as we discussed on the phone this morning we have received a jurisdictional determination (JD) of Project area from the USACE-Omaha District. A copy of the JD letter and associated map are attached.

Prior to the site visits Tetra Tech requested a jurisdictional determination of aquatic resources in the project area from the Bismarck, North Dakota office of the USACE – Omaha District. Tetra Tech provided the USACE with a figure depicting the project area with a preliminary array and requested that all areas within that project boundary be identified to aid FPLE in avoiding and minimizing impacts to aquatic resources. The USACE identified several drainages and tributaries to the Park River and the Nekoma Coulee within the site boundaries as jurisdictional waters of the United States (WUS). The areas as marked on the figure do not define actual wetland boundaries but rather only identify features which the USACE – Omaha District claimed as jurisdictional.

In the response to our request, the USACE also indicated that joint USEPA and USACE guidance based on the recent U.S Supreme Court decisions (Rapanos vs. the U.S and Carabell vs. the U.S) would soon be issued and this guidance may affect the jurisdictional status of some of these areas. The effect of these Supreme Court decisions would likely be a reduction in the number of locations which would now be considered jurisdictional by the USACE.

Based on this JD and the proposed project impacts to jurisdictional waters as identified by the USACE-Omaha District, the proposed impacts are below the 1/10 acre notification threshold for Nationwide Permits 12 and 14.

Gregory C. Dawdy | Project Manager/Senior Biologist

Main: 618.343.2300 | Fax: 618.343.7042 | Direct Dial: 618.343.2342 | Cell: 314.706.4336

Tetra Tech | Complex World, Clear Solutions

1634 Eastport Plaza | Collinsville, IL 62234

www.tetratech.com

PLEASE NOTE: This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

(See attached file: Fig1USACEDetReq.pdf)(See attached file: dept of army ltr.pdf)(See attached file: LngdnFig2_11x17.pdf)(See attached file: crossings_summary.xls)

Martinson, Leon O.

From: Lares, Sheri G.
Sent: Tuesday, August 21, 2007 9:30 AM
To: Court_Laska@fpl.com
Cc: Martinson, Leon O.
Subject: RE: Nationwide permit

Good morning,

I have contacted the USACE regarding this project. The USACE indicated that FPL needs to contact the ND Regulatory office regarding jurisdiction and authorization under the NWP. Upon receiving documentation from the USACE that they concur with your assumptions, we will provide the approval to move forward with the roadway approach work.

Sheri Lares

From: Court_Laska@fpl.com [mailto:Court_Laska@fpl.com]
Sent: Monday, August 20, 2007 8:04 AM
To: Lares, Sheri G.
Subject: Re: Nationwide permit

Please see the attachments below.

(See attached file: crossings_summary_7_16_updated.xls)(See attached file: LngdnFig1Wetlands11x17Q_07_16_07.pdf)

Court Laska
Civil Superintendent

Langdon Wind, LLC
317 3rd St. Suite 106
Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com

----- Forwarded by Court Laska/FPL Energy/FPL on 08/20/2007 08:02 AM -----

Geoffrey West To: Court Laska/FPL Energy/FPL@FPL
cc:
Subject: Re: Nationwide permit

08/20/2007
07:57 AM

Court,

See the attached and scroll down to page 93 of the pdf. Our activities are regulated by the nationwide 12 and 14 permits. There is no formal notification to the US Army Corp of Engineers unless you exceed the thresholds set forth in these

9/12/2007

permits. That is where the wetland matrix and corresponding map comes in handy. Please let me know if you have any questions.

Geoff

(See attached file: NWP_2007_final.pdf)

Geoffrey B. West
700 Universe Blvd.
Juno Beach, FL 33408
W: (561) 691-2644

☞ Court Laska

Court Laska Sent by: To: Geoffrey West/HR/FPL
cc: Connie Rausch/FPL Energy/FPL, Dick Rausch/FPL Energy/FPL, Geoffrey West/HR/FPL
Subject: Re: Nationwide permit
Court Laska

08/20/2007
07:34 AM

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How's this coming along? We will need to get a copy by Weds or this could hold up the road progress. Thanks for your help.

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Civil Superintendent

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☞ Court Laska

Court Laska Sent by: To: Geoffrey West/HR/FPL
cc: Dick Rausch/FPL Energy/FPL, Connie Rausch/FPL Energy/FPL
Subject: Nationwide permit
Court Laska

9/12/2007

08/17/2007
09:08 AM

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Court Laska
Civil Superintendent

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Langdon, ND 58249

(701) 256-3298 Office
(701) 256-5393 Fax
(701) 550-0993 Cell

Court_Laska@fpl.com

9/12/2007

APPENDIX E
AGENCY LETTERS



October 26, 2007

Mr. Gary R. Ness, Director
Aeronautics Commission
P. O. Box 5020
Bismarck, North Dakota 58502-5020

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Ness:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the Aeronautics Commission for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Mr. Gary R. Ness
Aeronautics Commission
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeffrey R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

N:\Typing\Env\7551118A\Langdon II Query Letters



October 26, 2007

Attorney General Wayne Stenehjem
State Capitol
600 East Boulevard Avenue, Department 125
Bismarck, North Dakota 58505

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Stenehjem:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the Office of the Attorney General for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Attorney General Wayne Stenehjem
State Capital
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

N:\typing\Env\7551118A\Langdon II Query Letters



October 26, 2007

Dawn Roppel, County Auditor
Cavalier County Planning and Zoning
901 3rd Street Suite 15
Langdon, ND 58249

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Ms. Roppel:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the Office of the County Auditor for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Ms. Dawn Roppel
Cavalier County Planning and Zoning
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'J. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Brian Prince, Wildlife Resource Supervisor
North Dakota Game and Fish, Cavalier County
7928 45th Street NE
Devils Lake, ND 58301

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Prince:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota Game and Fish for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land. We are specifically interested in such information as the location of wetland resources, notable State wildlife interests, sensitive species habitats, and any other special or sensitive environmental conditions that exist in or near the study area.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the U.S. Fish and Wildlife Service. We will also conduct a site survey of areas proximal to proposed facilities in order to preliminarily determine the presence of wetlands.



Mr. Brian Prince
North Dakota Game and Fish
October 26, 2007

We would appreciate a response by November 16, 2006. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'J.R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Mr. Richard Webb, NRCS District Conservationist
Cavalier County Soil Conservation District
800 9th Avenue E, Suite B
Langdon, North Dakota 58249

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Webb:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the Cavalier County Soil Conservation District for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Mr. Richard Webb
Cavalier County Soil Conservation district
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'J. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Mr. Roger Johnson, Agriculture Commissioner
North Dakota Department of Agriculture
600 East Boulevard Avenue, Department 602
Bismarck, North Dakota 58505-0020

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Johnson:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota Department of Agriculture for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Mr. Roger Johnson
North Dakota Dept of Agriculture
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'J. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Mr. Wayne Kutzer, Director
North Dakota Department of Career and Technical Education
State Capitol 15th Floor
600 East Boulevard Avenue, Department 270
Bismarck, North Dakota 58505-0610

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Kutzer:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota Department of Career and Technical Education for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
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This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Mr. Shane Goettle, Commissioner
North Dakota Department of Commerce
1600 East Century Avenue, Suite 2
P. O. box 2057
Bismarck, North Dakota 58503

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Goettle:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota Department of Commerce for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Mr. Shane Goettle
North Dakota Dept of Commerce
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Dr. Terry Dwelle, M.D.
State Health Officer
North Dakota Department of Health
600 East Boulevard Avenue
Bismarck, North Dakota 58505-0200

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Dr. Dwelle:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota Department of Health for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Dr. Terry Dwelle MD
North Dakota Dept of Health
October 26 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'J. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Ms. Lisa Fair McEvers, Commissioner of Labor
North Dakota Department of Labor
600 East Boulevard Avenue, Department 406
Bismarck, North Dakota 58505-0340

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Ms. McEvers:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota Department of Labor for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Ms. Lisa Fair McEvers
North Dakot Dept of Labor
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Ms. Kim Christianson, Energy Program Manager
Energy Conservation and Renewable Energy
Division of Community Services
1600 East Century Avenue, Suite 2
P. O. box 2057
Bismarck, North Dakota 58502-2057

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Ms. Christianson:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the Division of Community Services of Energy Conservation and Renewable Energy for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Ms. Kim Christianson
Energy Conservation and Renewable Energy
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Mr. Edward C. Murphy, State Geologist
North Dakota Geological Survey
600 East Boulevard Avenue
Bismarck, North Dakota 58505-0840

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Murphy:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota Geological Survey for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
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This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Mr. Edward C. Murphy
North Dakota Geological Survey
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'J. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Governor John Hoeven
600 East Boulevard Avenue, Department 101
Bismarck, North Dakota 58505-0001

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Governor Hoeven:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the Governor for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
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This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.

October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech



Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Mr. Scott D. Zainhofsky, District Engineer
North Dakota Highway Department
District 3 - Devils Lake
316 Sixth Street South East
Devils Lake, ND 58301-3628

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Zainhofsky:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota Highway Department for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Mr. Scott D. Zainhofsky
North Dakota Highway Dept
October 26 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Ms. Cheryl Kulas, Executive Director
North Dakota Indian Affairs Commission
600 East Boulevard Avenue
1st Floor – Judicial Wing, Room #117
Bismarck, North Dakota 58505

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Ms. Kulas:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota Indian Affairs Commission for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
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This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Ms. Cheryl Kulas
North Dakota Indian Affairs Commission
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Ms. Maren Daley, Executive Director
Job Service North Dakota
1000 East Divide Avenue
Bismarck, North Dakota 58502-5507

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Ms. Daley:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the Job Service of North Dakota for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
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This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Ms. Maren Daley
Job Service North Dakota
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Mr. Jesse Hanson, Division Director
North Dakota Parks and Recreation Department
1600 E. Century Avenue, Suite 3
Bismarck, ND 58503

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Hanson:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota Parks and Recreation Department for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
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This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Mr. Jesse Hanson
North Dakota Parks and Recreation Department
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Ms. Pam Sharp, Director
North Dakota Office of Management and Budget
600 East Boulevard Avenue, Department 110
Bismarck, North Dakota 58505-0400

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Ms. Sharp:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota Office of Management and Budget for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
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This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Ms. Pam Sharp
North Dakota Office of Management and Budget
October 26 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'J. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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October 26, 2007

Mr. Rick Larson, Director of Minerals Management
North Dakota State Land Department
Energy Development Impact Office
P. O. Box 5523
Bismarck, North Dakota 58506-5523

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Larson:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota State Land Department for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Mr. Rick Larson
North Dakota State Land Dept
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

N:\Typing\Env\7551118A\Langdon II Query Letters



October 26, 2007

Mr. Thomas Christensen, Chairman
North Dakota State Soil Conservation Committee
2718 Gateway Avenue, Unit #104
Bismarck, North Dakota 58503

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Christensen:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota State Soil Conservation Committee for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Mr. Thomas Christensen
North Dakota State Soil Conservation Committee
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

N:\Typing\Env\7551118A\Langdon II Query Letters



October 26, 2007

Mr. Dale Frink, State Engineer
North Dakota State Water Commission
900 East Boulevard
Bismarck, North Dakota 58505-0850

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Frink:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the North Dakota State Water Commission for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land or applicable permits that may be required from your office. You will also be receiving notice once the supplemental application is filed.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the US Fish and Wildlife Service, US Army Corps of Engineers, and North Dakota Department of Natural Resources.



Mr. Dale Frink
North Dakota State Water Commission
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff R. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

N:\Typing\Env\7551118A\Langdon II Query Letters



October 26, 2007

Dan Cimarofiti, State Program Manager
US Army Corp of Engineers
Regulatory Division
1513 S. 12th Street
Bismarck, ND 58504

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Cimarofiti:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the US Army Corp of Engineers for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land. We are specifically interested in such information as the location of jurisdictional wetlands not previously delineated, wetland resources and any other special or sensitive environmental conditions that exist in or near the study area.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the U.S. Fish and Wildlife Service. We will also conduct a site survey of areas proximal to proposed facilities in order to preliminarily determine the presence of wetlands.



Mr. Dan Cimarofiti
US Army Corp of Engineers
October 26, 2007

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'J. Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

N:\Typing\Env\7551118A\Langdon II Query Letters



October 26, 2007

Mr. Jeff Towner, Field Supervisor
U. S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Avenue
Bismarck, ND 58501-7926

**RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600**

Dear Mr. Towner:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. The area shown in the attached figure is the primary focus of our investigation. Please note the figure shows the initial project boundary versus the proposed phase two project boundary. The phase two project incorporates portions of an additional nine sections of land adjacent to the western boundary of the initial project area. The remainder of this project will be developed within the initial project boundary.

We are consulting the US Fish and Wildlife Service for assistance in identifying environmental properties, concerns or issues within the boundaries of the tracts listed below that would influence a decision regarding the use of the land. We are specifically interested in such information as the location of wetland resources and any other special or sensitive environmental conditions that exist in or near the study area.

The new portion of the project area includes portions of the following tracts:

Township	Range	Sections
160 N	60W	27, 34
159 N	60W	3, 4, 9, 10, 14-16

This information will be used as an initial step to help guide project development in a manner that identifies and avoids impacts to sensitive resources where practicable. We have sent similar query letters to other agencies including the U.S. Army Corp of Engineers. We will also conduct a site survey of areas proximal to proposed facilities in order to preliminarily determine the presence of sensitive species.

We would appreciate a response by November 16, 2007. Please contact me at 406-248-9161 if you have any questions.



Mr. Jeff Towner
U. S. Fish and Wildlife Service
October 26, 2007

Thank you for your assistance.

Respectfully submitted,
Tetra Tech

A handwritten signature in blue ink, appearing to read 'Jeff Rice'.

Jeffrey R. Rice
Project Manager, Natural Resources

HMW/JRR/ba

cc: Tracey Martorano (TtEC, Boston)

Enclosure

N:\Typing\Env\7551118A\Langdon II Query Letters



FPL Energy

AN FPL GROUP COMPANY

January 30, 2008

Mr. Merlan E. Paaverud, Jr.
Director, State Historical Society of North Dakota
612 East Boulevard Avenue
Bismark, ND 58505-0830

NDSHPO Ref: Langdon Wind Farm Expansion, Cavalier County, North Dakota

Dear Mr. Paaverud,

In January 2008, Langdon Wind, LLC ("Langdon Wind") will be applying to the North Dakota Public Service Commission for an amended Certificate of Site Compatibility (Certificate) to construct an expansion of the Langdon Wind Energy Center (the Project). The Project is located in Cavalier County, North Dakota (Figures 1 and 2). The expansion includes an additional 40.5 megawatts (MW) in size, consisting of up to 27 General Electric (GE) 1.5 MW turbines. Additional facilities include up to two additional meteorological towers and below-ground electrical collection cable system(s). No additional aboveground facilities are proposed as a part of this phase of the project.

The closest turbine for Langdon I was approximately 0.75 miles east of the Nekoma Pyramid (32CV113-Safeguard Complex) and over 1 mile to the northwest for the planned expansion. As you are aware, Langdon Wind mitigated view shed impacts to the Safeguard Complex by partnering with the Cavalier County Jobs Development Authority who are developing an appropriate method of public interpretation for the complex.

A Class III Cultural Resource Inventory was conducted on the expansion by Metcalf Archaeological Consultants in October 2007. Metcalf documented two prehistoric isolated finds, 32CVx68 and 32CVx69, and the Safeguard Complex. The isolates 32CVx68 and 32CVx69 are recommended as not eligible for the National Register. No further investigation or avoidance was recommended for these isolated finds. The cultural report will be submitted to your office soon. As discussed above, based on discussions with the Army and NDSHPO personnel during the Langdon I portion of the wind farm, Langdon Wind LLC submitted a mitigation plan to SHPO and the Army to mitigate viewshed impacts to the Nekoma Pyramid and associated Safeguard Complex (32CV113).

We will also send a letter to the Army and others inviting them to discuss the expansion if desired and keeping them informed of the plans for development.

Please call me at (561) 691-7240 if you have any questions or would like to discuss further.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Scovill". The signature is fluid and cursive, with the first name "Scott" being more prominent than the last name "Scovill".

Mr. Scott Scovill
Project Director, FPL Energy

cc: William J. O'Donnell, II (Program Manager, Dept of the Army)
Tracey Martorano, (Project Manager, Tetra Tech)



FPL Energy

AN FPL GROUP COMPANY

January 30, 2008

William J. O'Donnell, II
Program Manager
Department of the Army
Assistant Chief of Staff for Installation Management (DAIM-BD)
600 Army Pentagon
Washington, D.C., 22310-0600

Re: Langdon Wind Farm Expansion, Cavalier County, North Dakota

Dear Mr. O'Donnell,

In January 2008, Langdon Wind, LLC ("Langdon Wind") will be applying to the North Dakota Public Service Commission for an amended Certificate of Site Compatibility (Certificate) to construct an expansion of the Langdon Wind Energy Center (the Project). The Project is located in Cavalier County, North Dakota (Figures 1 and 2). The expansion includes an additional 40.5 megawatts (MW) in size, consisting of up to 27 General Electric (GE) 1.5 MW turbines. Additional facilities include up to two additional meteorological towers and below-ground electrical collection cable system(s). No additional aboveground facilities are proposed as a part of this phase of the project.

The closest turbine for Langdon I was approximately 0.75 miles east of the Nekoma Pyramid (Safeguard Complex) and over 1 mile to the northwest for the planned expansion.

As you are aware, based on discussions with the Army and NDSHPO personnel during the Langdon I portion of the wind farm, Langdon Wind LLC submitted a mitigation plan to SHPO and the Army to mitigate viewshed impacts to the Nekoma Pyramid and associated Safeguard Complex (32CV113) by partnering with the Cavalier County Jobs Development Authority who are developing an appropriate method of public interpretation for the complex.

Please call me at (561) 691-7240 if you have any questions or would like to discuss further.

Sincerely,

Mr. Scott Scovill

Project Director, FPL Energy

cc: Merlan E. Paaverud, Jr. (Director, State Historical Society of North Dakota)
Tracey Martorano, (Project Manager, Tetra Tech)
William J. O'Donnell, II - Working Address: 2530 Crystal Drive, Arlington, Virginia 22202
PO Box 14000 • Juno Beach, Florida 33408-0420 • (561) 691-7171 Fax: (561) 691-7177

John Hoeven
Governor

Lisa K. Fair McEvers
Commissioner

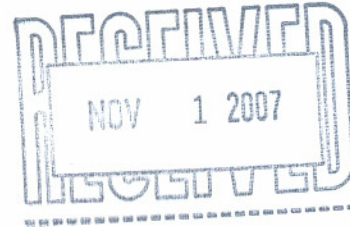


State Capitol - 13th Floor
600 E Boulevard Ave Dept 406
Bismarck, ND 58505-0340

nd.gov/labor
nd.gov/humanrights

October 30, 2007

Mr. Jeffrey R. Rice
Project Manager, Natural Resources
Tetra Tech
P.O. Box 30615
Billings, MT 59107



Dear Mr. Rice,

Thank you for your letter of October 26, 2007, inquiring about permits required by the North Dakota Department of Labor for your Langdon Wind Energy project. The Department of Labor enforces wage and hours laws, investigates allegations of discrimination in employment, housing, public services, public accommodations and credit transactions.

The Department of Labor has no authority to issue any permits regarding land or environmental concerns. Your questions may more appropriately be addressed to the North Dakota Public Service Commission, located at 600 E. Boulevard Avenue, Dept. 408, Bismarck, ND 58505-0480. It is my understanding that inquiries of this type may be brought to either Jerry Lien or Pat Pahn at the aforementioned address or by telephone at (701) 328-2400.

Sincerely yours,

A handwritten signature in blue ink that reads "Lisa K. Fair McEvers".

Lisa K. Fair McEvers
Commissioner



www.jobsnd.com

John Hoeven, Governor • Maren L. Daley, Executive Director

PO Box 5507 • Bismarck, ND 58506-5507



October 30, 2007

Mr. Jeffrey R. Rice
Project Manager, Natural Resources
Tetra Tech
618 South 25th Street
Billings, Montana 59101

RE: Project Area Environmental Scan
Cavalier County, North Dakota
Tetra Tech Project No. 7551118A.600

Dear Mr. Rice:

Job Service North Dakota administers the employment service and unemployment insurance programs.

We have no information regarding the boundaries of the tracts listed in your letter dated October 26, 2007, that would influence a decision regarding the use of the land or applicable permits.

Sincerely,

A handwritten signature in blue ink that reads "Maren Daley".

Maren Daley
Executive Director

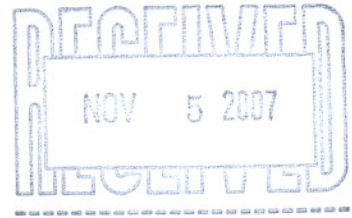
701.328.2825 (Voice) • 800.366.6888 (TTY Users - Relay ND) • 701.328.4000 (FAX)

Job Service North Dakota is an equal opportunity employer/program provider.
Auxiliary aids and services are available upon request to individuals with disabilities.



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640
October 31, 2007



North Dakota Regulatory Office

[NWO-2007-3469-BIS]

TetraTech
ATTN: Jeffrey R. Rice, Project Manager
Natural Resources
P.O. Box 30615
Billings, Montana 59107

Dear Mr. Rice:

This is in response to your letter dated October 26, 2007 requesting Department of the Army (DA), US Army Corps of Engineers (Corps) comments in identifying environmental properties, concerns or issues for a potential location for the second phase of the Langdon Wind Energy Project. The project is located in Sections 27 and 34, Township 160 North, Range 60 West, and Sections 3, 4,9,10, 14-16, Township 159 North, Range 60 West, Cavalier County, North Dakota. The project area is also referenced in your letter as Tetra Tech Project No. 7551118A.600.

Corps regulatory offices administer Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Section 10 of the Rivers and Harbors Act regulates work in or affecting navigable waters. Section 404 of the Clean Water Act regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in the waters of the United States.

If your proposal would require a Section 10 and/or Section 404 permit, please complete and submit the enclosed Corps of Engineers permit application to the U. S. Army Corps of Engineers, North Dakota Regulatory Office, 1513 South 12th Street, Bismarck, North Dakota 58504. If you are unsure if a permit is required, you may submit an application, or, a letter requesting a jurisdictional determination. Include a project location map, description of work, and construction methodology when submitting either.

If we can be of further assistance or should you have any questions regarding our program, please do not hesitate to contact this office by letter or phone at (701) 255-0015 and reference project number **NWO-2007-3469-BIS**.

Sincerely,

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure
-application

**Instructions for Preparing a
Department of the Army Permit Application**

Blocks 1 through 4. To be completed by Corps of Engineers.

Block 5. Applicant's Name. Enter the name of the responsible party or parties. If the responsible party is an agency, company, corporation or other organization, indicate the responsible officer and title. If more than one party is associated with the application, please attach a sheet with the necessary information marked **Block 5**.

Block 6. Address of Applicant. Please provide the full address of the party or parties responsible for the application. If more space is needed, attach an extra sheet of paper marked Block 6.

Block 7. Applicant Telephone Number(s). Please provide the number where you can usually be reached during normal business hours.

Blocks 8 through 11. To be completed if you choose to have an agent.

Block 8. Authorized Agent's Name and Title. Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer or any other person or organization. Note: An agent is not required.

Blocks 9 and 10. Agent's Address and Telephone Number. Please provide the complete mailing address of the agent, along with the telephone number where he/she can be reached during normal business hours.

Block 11. Statement of Authorization. To be completed by applicant if an agent is to be employed.

Block 12. Proposed Project Name or Title. Please provide name identifying the proposed project (i.e., Landmark Plaza, Burned Hills Subdivision or Edsall Commercial Center).

Block 13. Name of Waterbody. Please provide the name of any stream, lake, marsh or other waterway to be directly impacted by the activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

Block 14. Proposed Project Street Address. If the proposed project is located at a site having a street address (not a box number), please enter here.

Block 15. Location of Proposed Project. Enter the county and state where the proposed project is located. If more space is required, please attach a sheet with the necessary information marked Block 15.

Block 16. Other Location Descriptions. If available, provide the Section, Township and Range of the site and/or the latitude and longitude. You may also provide description of the proposed project location, such as lot numbers, tract numbers or you may choose to locate the proposed project site from a known point (such as the right descending bank of Smith Creek, one mile down from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed project site if known.

Block 17. Directions to the Site. Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site.

Block 18. Nature of Activity. Describe the overall activity or project. Give appropriate dimensions of structures such as wingwalls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also, identify any structure to be constructed on a fill, piles or float supported platforms.

The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 18.

Block 19. Proposed Project Purpose. Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project. Give the approximate dates you plan to both begin and complete all work.

Block 20. Reason(s) for Discharge. If the activity involves the discharge of dredged and/or fill material into a wetland or other waterbody, including the temporary placement of material, explain the specific purpose of the placement of the material (such as erosion control).

Block 21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards. Describe the material to be discharged and amount of each material to be discharged within Corps jurisdiction. Please be sure this description will agree with your illustrations. Discharge material includes: rock, sand, clay, concrete, etc.

Block 22. Surface Areas of Wetlands or Other Waters Filled. Describe the area to be filled at each location. Specifically identify the surface areas, or part thereof, to be filled. Also include the means by which the discharge is to be done (backhoe, dragline, etc.). If dredged material is to be discharged on an upland site, identify the site and the steps to be taken (if necessary) to prevent runoff from the dredged material back into a waterbody. If more space is needed, attach an extra sheet of paper marked **Block 22**.

Block 23. Is Any Portion of the Work Already Complete? Provide any background on any part of the proposed project already completed. Describe the area already developed, structures completed, any dredged or fill material already discharged, the type of material, volume in cubic yards, acres filled, if a wetland or other waterbody (in acres or square wet). if tile work was done under an existing Corps permit, identify the authorization if possible.

Block 24. Names and Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Project Site. List complete names and full mailing addresses of the adjacent property owners (public and private) lessees, etc., whose property adjoins the waterbody or aquatic site where the work is being proposed so that they may be notified of the proposed activity (usually by public notice). If more space is needed, attach an extra sheet of paper marked Block 24.

Information regarding adjacent landowners is usually available through the office of the tax assessor in the county of counties where the project is to be developed.

Block 25. Information about Approvals or Denials by Other Agencies. You may need the approval of other Federal, state or local agencies for your project. identify any applications you have submitted and the status, if any (approved or denied) of each application. You need not have obtained all other permits before applying for a Corps permit.

Block 26. Signature of Applicant or Agent. The application must be signed by the owner or other authorized party (agent) . This signature shall be an affirmation that the party applying for the permit possesses the requisite property rights to undertake the activity applied for (including compliance with special conditions, mitigation, etc.).

DRAWINGS AND ILLUSTRATIONS

General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a **Vicinity Map, a Plan View or a Typical Cross-Section Map**. Identify each illustration with a figure or attachment number.

Please submit one original, or good quality copy, of all drawings on 8 1/2x11 inch plain white paper (tracing paper or film may be substituted). Use the fewest number of sheets necessary for your drawings or illustrations.

Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view or cross-section). **While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate and contain all necessary information.**

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
(33 CFR 325)

OMB APPROVAL NO. 0710-0003
Expires December 31, 2004

The Public burden for this collection of information is estimated to average 10 hours per response, although the majority of applications should require 5 hours or less. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research and Sanctuaries Act, 33 USC 1413, Section 103. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO. NWO-2007-3469-BIS	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED
---	----------------------	------------------	-------------------------------

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE <i>(an agent is not required)</i>
6. APPLICANT'S ADDRESS	7. AGENT'S ADDRESS
7. APPLICANT'S PHONE NOS. W/AREA CODE	10. AGENT'S PHONE NOS. W/AREA CODE
a. Residence b. Business	a. Residence b. Business

11. STATEMENT OF AUTHORIZATION

I hereby authorize _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE DATE

NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE <i>(see instructions)</i>	
13. NAME OF WATERBODY, IF KNOWN <i>(if applicable)</i>	14. PROJECT STREET ADDRESS <i>(if applicable)</i>
15. LOCATION OF PROJECT _____ COUNTY _____ STATE	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN *(see instructions)*

17. DIRECTIONS TO THE SITE



Wayne Stenehjem
ATTORNEY GENERAL

STATE OF NORTH DAKOTA
OFFICE OF ATTORNEY GENERAL

STATE CAPITOL
600 E BOULEVARD AVE DEPT 125
BISMARCK, ND 58505-0040
(701) 328-2210 FAX (701) 328-2226
www.ag.state.nd.us



November 1, 2007

Jeffrey R. Rice
Project Manager, Natural Resources
Tetra Tech
PO Box 30615
Billings MT 59107

Dear Mr. Rice:

I am responding on behalf of the Attorney General to your recent letter regarding an investigation of property in Cavalier County as a potential location for the second phase of the Langdon Wind Energy project. You ask that this office identify environmental properties, concerns, or issues within the boundaries of certain tracts of land.

The Attorney General and members of his staff are prohibited by statute from giving legal advice, opinions, or assistance to private businesses or members of the public. We may only serve as legal advisors to state officials, state's attorneys, and certain city officials.

Accordingly, we cannot provide the information or assistance you requested. For legal research and assistance you should consult an attorney in private practice licensed in North Dakota. If you need assistance finding an attorney, you can contact the State Bar Association at (701) 255-1404.

Sincerely,

A handwritten signature in blue ink that reads "Liz Brocker".

Liz Brocker
Executive Assistant



November 5, 2007

Mr. Jeffrey R. Rice
Project Manager, Natural Resources
Tetra Tech, Inc.
P.O. Box 30615
Billings, MT 59107

Re: Potential Location for Phase Two of the Langdon Wind Energy Project, Cavalier County

Dear Mr. Rice:

This department has reviewed the information concerning the above-referenced project submitted under date of October 26, 2007, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.
2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.
3. Projects disturbing one or more acres are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Further information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701-328-5210). Also, cities may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.
4. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is

Mr. Jeffrey R. Rice

2.

November 5, 2007

equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

A handwritten signature in black ink, appearing to read "L. David Glatt", written in a cursive style.

L. David Glatt, R.E., Chief
Environmental Health Section

LDG:cc
Attach.



Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

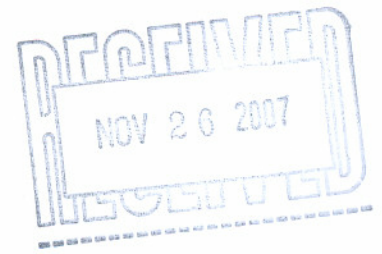
All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.



Natural Resources Conservation Service
502 Hwy 2 W, Suite 1
Devils Lake, ND 58301



To: Jeffrey Rice
Project Manager, Natural Resources
Tetra-Tech, Inc.
PO Box 30615
Billings, MT 59107

Date: Nov. 19, 2007

Subject: Project No. 7551118A.600
Proposed Langdon Wind Energy Center

I recently received a copy of your letter to the NRCS seeking comments on environmental concerns regarding the proposed 2nd phase of the Langdon Wind Energy project.

I am enclosing two prime farmland maps. The enclosed maps and legends indicate which soil delineations meet the criteria for the following categories:

- All areas are prime farmland**
- Prime farmland if drained**
- Farmland of statewide importance**
- Farmland of local importance**
- Not prime farmland**

A review of these maps for proposed sites is required to determine if the Farmland Protection Policy Act (FPPA) applies to a particular project. The primary purpose of FPPA is to reduce the conversion of highly productive farmland to non-agricultural uses. Project No. 7551118A.600 as described in your letter could result in the conversion of such farmland, depending on the placement of the wind generators and access roads to the generators.

Form AD-1006 will be required when you have proposed specific sites for installation of the generators. When your project reaches that point, send a copy of Form AD-1006 to my office for each site that will be developed on soils in any of the categories except 'not prime farmland'.

The following paragraphs will provide a brief summary of the landscape that occurs in the general project area (as defined in your letter). Hopefully, this will assist you with site selections that will meet project needs while having minimal impact on highly productive farmland.

Geology

Nearly all of the area being reviewed for wind generator sites occurs on the glacial till plain. The soil parent material is predominantly loam or clay loam with clay percentages ranging from about 22 to 30 percent. Along the South Branch of the Park River the glacial

The Natural Resources Conservation Service provides leadership in a partnership effort to help people
Conserve, maintain, and improve our natural resources.

till contains significant amounts of weathered shale fragments and a few exposed shale beds occur along the breaks to the river. Some areas of gravel deposits are interspersed with the glacial till. Most of the area has landform slopes of less than 9 percent dotted a few steeper hill and ridges.

Soils

Predominantly, this area has a repeating sequence of associated soils (soils catena) that formed in the loam and clay loam glacial till. These most common soils are:

Buse and Langhei soils-

Well drained soils that occur on convex slopes on the tops of knolls, ridges, and hills. These soils have thin, grayish topsoil layers. These are commonly referred to as clay knobs, but in fact have no more clay than other soils in the area. The grayish color is from the relatively high amounts of calcium-carbonate throughout the soil profiles. The only difference between Buse and Langhei soils is the thickness of the natural topsoil. Buse soils have 5 to 8 inches of dark gray topsoil. The Langhei soils have 0 to 5 inches of dark topsoil – most of it having been eroded due to cultivation.

Barnes soils-

Well drained soils that occur on the side slopes just below the Buse soils. These soils have black topsoil 8 to 15 inches thick with a brownish subsoil layer. A brownish-gray or yellow, high calcium-carbonate layer occurs at a depth of about 20 to 25 inches.

Svea soils-

Moderately well drained soils that occur on footslopes and swales. These soils have black topsoil 16 inches or more thick which grades into a dark brown subsoil. These soils also have a layer of concentrated calcium-carbonate, but it is generally deeper than 30 inches.

Cresbard and Cavour soils-

Moderately well drained soils that occur on similar landscape positions as the Svea soils, but which have dense clayey subsoil. Commonly these subsoils are underlain by a layer with accumulated salts. Typically these salts are deeper than 24 inches. However, due to the higher than normal water tables of the last 10-12 years, some areas have salt accumulations much closer to the surface.

Hamerly and Vallery soils-

These soils occur on flats, as rims around wetlands and on slight rises between clustered wetlands. These soils have high calcium-carbonate content and are commonly have accumulated salts within a depth of 16 inches. The somewhat poorly drained Hamerly soils have seasonal high water table within 2.5 feet of the surface. The poorly drained Vallery soils have a seasonal high water table within 1.5 feet of the surface and commonly is saturated to the surface until mid-May.

Tonka, Parnell and Southam soils-

These soils occur in shallow to deep depressions. They are poorly or very poorly drained and ponded for various lengths of time each year.

Soil Map Units

If you prioritize your site selection to map units classified as "Not prime farmland", the most promising map units appear to be:

- F286C Fordville-Sioux complex, 2 to 9 percent slopes (soils with gravelly substratums)
- F303B Vang-Coe complex, 2 to 6 percent slopes (soils with shaly gravel substratums)
- F303C Vang-Coe complex, 6 to 9 percent slopes (soils with shaly gravel substratums)

Other 'not prime farmland' map units in the area are generally too wet or too saline to be good sites.

If you look at other categories of farmland, the best soils probably would be the Buse and Langhei components of the other map units. These are commonly occurring soils, are on the higher parts of the map unit and, agriculturally, are the least productive parts of those map units. Map units with Buse and/or Langhei components are:

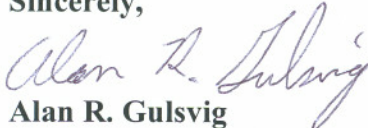
- F143C
- F154B

NRCS also has concern with wetland conservation. While it is unlikely that your project would result in loss of wetlands, our Agency requests that you take care during the construction phase to minimize negative impacts to any nearby wetlands.

I do not have record of receiving Form AD1006 for any of the selected sites for the the first phase of the project. Please indicate the generator locations and any access roads that have been constructed. I need this for an annual report to Congress of acres of converted prime farmland subject to FPPA guidelines.

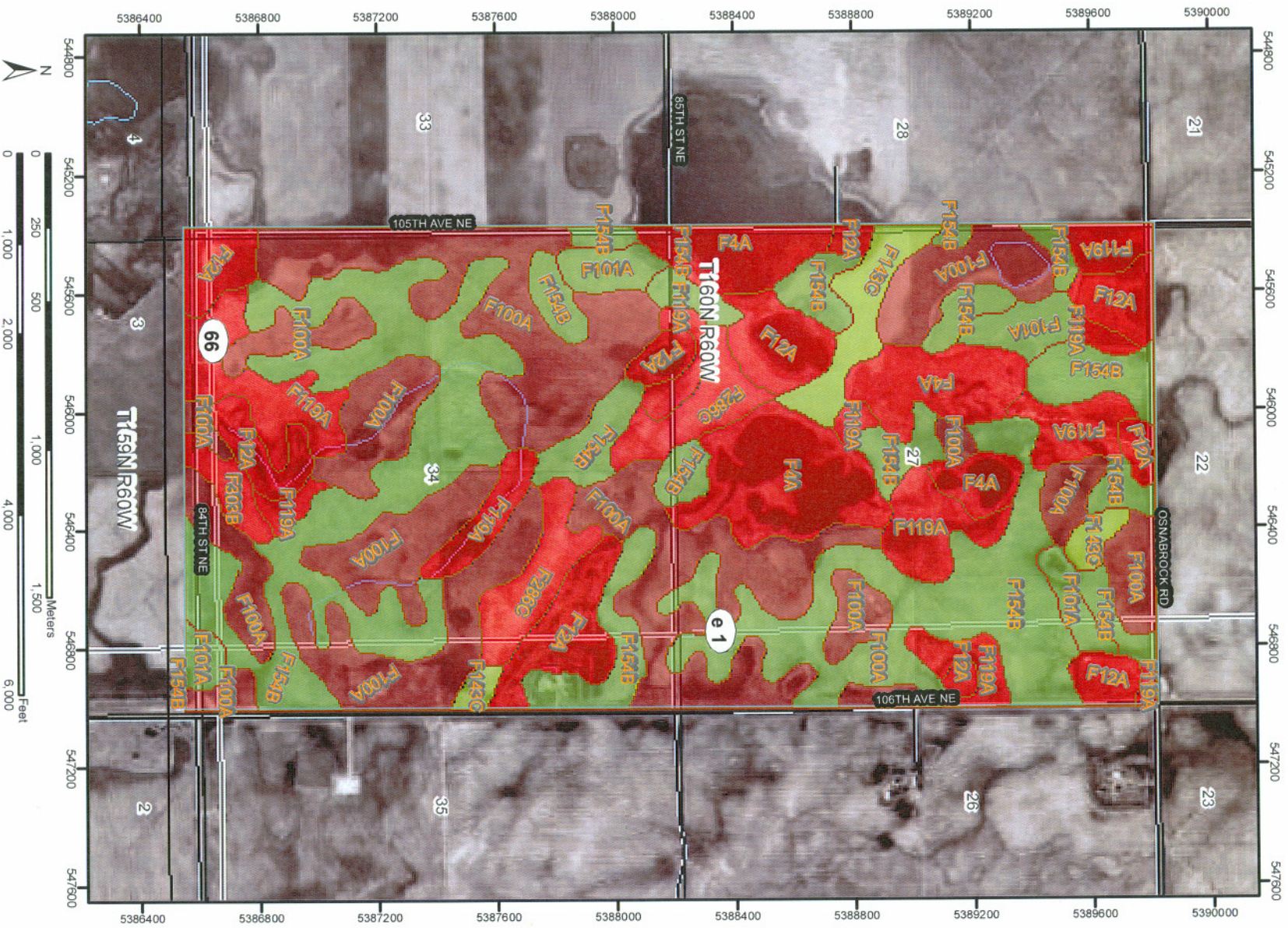
Please let me know if I can be of further assistance.

Sincerely,



Alan R. Gulsvig
Area Resource Soil Scientist
Ph. (701) 662-7967 ext. 5

Farmland Classification-Cavaller County, North Dakota
(Tetra Tech - Sec. 27 & 34, T.160N., R.60W.)



Farmland Classification—Cavalier County, North Dakota
(Tetra Tech - Sec. 27 & 34, T.160N., R.60W.)

MAP LEGEND









Area of Interest (AOI)








 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of local importance
-  Farmland of unique importance
-  Not rated or not available

Political Features

Public Land Survey

 Township and Range









 Section

Municipalities

 Cities

 Urban Areas

Water Features

-  Oceans
-  Streams and Canals
- Transportation**
-  Rails
- Roads**
-  Interstate Highways
-  US Routes
-  State Highways
-  Local Roads
-  Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 14N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cavalier County, North Dakota
Survey Area Data: Version 10, Mar 14, 2007

Date(s) aerial images were photographed: 9/13/1997;
10/15/1997

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Farmland Classification— Summary by Map Unit — Cavalier County, North Dakota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	127.7	9.7%
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	121.1	9.2%
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	396.0	30.1%
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	All areas are prime farmland	40.6	3.1%
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	132.6	10.1%
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	36.1	2.7%
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	404.9	30.7%
F286C	Fordville-Sioux complex, 2 to 9 percent slopes	Not prime farmland	47.3	3.6%
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	11.0	0.8%
Totals for Area of Interest (AOI)			1,317.3	100.0%

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.


Rating Options

Aggregation Method: No Aggregation Necessary









Tie-break Rule: Lower








Farmland Classification—Cavalier County, North Dakota
(Tetra Tech - Sec. 3 & 4, T.159N., R. 60W.)

MAP LEGEND

Area of Interest (AOI)
 Area of Interest (AOI)

Soils
 Soil Map Units

- Soil Ratings**
-  Not prime farmland
 -  All areas are prime farmland
 -  Prime farmland if drained
 -  Prime farmland if protected from flooding or not frequently flooded during the growing season
 -  Prime farmland if irrigated
 -  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
 -  Prime farmland if irrigated and drained
 -  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of local importance
-  Farmland of unique importance
-  Not rated or not available

Political Features









Public Land Survey

-  Township and Range
-  Section

Municipalities

-  Cities
-  Urban Areas

Water Features

-  Oceans
-  Streams and Canals
- Transportation**
-  Rails
- Roads**
-  Interstate Highways
-  US Routes
-  State Highways
-  Local Roads
-  Other Roads

MAP INFORMATION

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 Coordinate System: UTM Zone 14N

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Soil Survey Area: Cavalier County, North Dakota
 Survey Area Data: Version 10, Mar 14, 2007

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Farmland Classification

Farmland Classification— Summary by Map Unit — Cavalier County, North Dakota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	131.2	9.9%
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	88.7	6.7%
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	374.7	28.3%
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	All areas are prime farmland	78.3	5.9%
F116A	Easby clay loam, 0 to 1 percent slopes	Not prime farmland	62.9	4.8%
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	13.8	1.0%
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	28.3	2.1%
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	63.8	4.8%
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	5.3	0.4%
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	28.9	2.2%
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	423.1	32.0%
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	22.8	1.7%
Totals for Area of Interest (AOI)			1,321.7	100.0%

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower


Farmland Classification—Cavalier County, North Dakota
 (Tetra Tech - Sec. 9 & 10, T.159n., R.60W.)



Farmland Classification—Cavalier County, North Dakota
(Tetra Tech - Sec. 9 & 10, T.159n., R.60W.)

MAP LEGEND









Area of Interest (AOI)








 Area of Interest (AOI)

Soils

 Soil Map Units

Soil Ratings

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of local importance
-  Farmland of unique importance
-  Not rated or not available

Political Features









Public Land Survey

-  Township and Range
-  Section

Municipalities

-  Cities
-  Urban Areas

Water Features

-  Oceans
-  Streams and Canals
- Transportation**
-  Rails
- Roads**
-  Interstate Highways
-  US Routes
-  State Highways
-  Local Roads
-  Other Roads

MAP INFORMATION

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Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 14N

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Soil Survey Area: Cavalier County, North Dakota
Survey Area Data: Version 10, Mar 14, 2007

Date(s) aerial images were photographed: 9/13/1997

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Farmland Classification

Farmland Classification— Summary by Map Unit — Cavalier County, North Dakota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	7.9	0.6%
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	8.1	0.6%
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	42.0	3.3%
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	277.3	21.7%
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	All areas are prime farmland	23.8	1.9%
F116A	Easby clay loam, 0 to 1 percent slopes	Not prime farmland	0.8	0.1%
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	140.9	11.0%
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	358.1	28.1%
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	171.5	13.4%
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	28.3	2.2%
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	19.5	1.5%
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	162.7	12.8%
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	34.8	2.7%
Totals for Area of Interest (AOI)			1,275.8	100.0%

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary


Tie-break Rule: Lower

Farmland Classification—Cavalier County, North Dakota
(Tetra Tech - Sec. 14, T.159N., R.60W.)
















Farmland Classification—Cavalier County, North Dakota
(Tetra Tech - Sec. 14, T.159N., R.60W.)

MAP LEGEND

Area of Interest (AOI)
 Area of Interest (AOI)

Soils
 Soil Map Units

- Soil Ratings**
-  Not prime farmland
 -  All areas are prime farmland
 -  Prime farmland if drained
 -  Prime farmland if protected from flooding or not frequently flooded during the growing season
 -  Prime farmland if irrigated
 -  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
 -  Prime farmland if irrigated and drained
 -  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of local importance
-  Farmland of unique importance
-  Not rated or not available

Political Features


Public Land Survey

-  Township and Range
-  Section


Municipalities

-  Cities
-  Urban Areas

Water Features

-  Oceans
-  Streams and Canals

Transportation

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-  Interstate Highways
-  US Routes
-  State Highways
-  Local Roads
-  Other Roads

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Farmland Classification

Farmland Classification— Summary by Map Unit — Cavalier County, North Dakota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	29.4	4.4%
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	2.0	0.3%
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	All areas are prime farmland	43.3	6.5%
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	43.9	6.6%
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	116.3	17.5%
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	6.9	1.0%
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	142.9	21.5%
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	129.8	19.5%
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	84.2	12.6%
F302A	Vang loam, 0 to 2 percent slopes	All areas are prime farmland	31.7	4.8%
F303C	Vang-Coe complex, 6 to 9 percent slopes	Not prime farmland	2.6	0.4%
F523A	Lowe loam, channeled, 0 to 2 percent slopes	Not prime farmland	4.4	0.7%
M-W	Miscellaneous water	Not prime farmland	28.6	4.3%
Totals for Area of Interest (AOI)			666.0	100.0%

Description

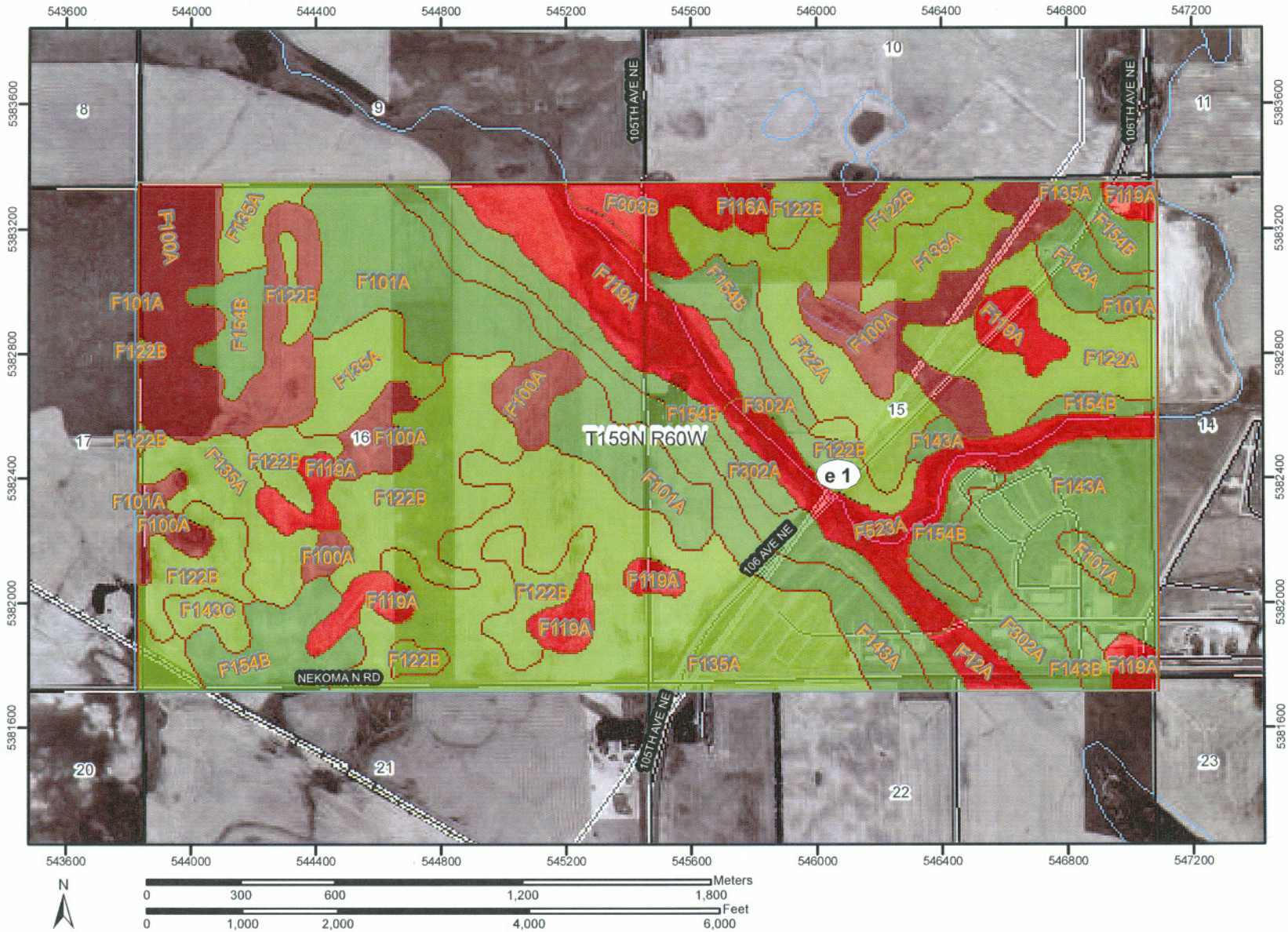
Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary


Tie-break Rule: Lower

Farmland Classification—Cavalier County, North Dakota
 (Tetra Tech - Sec. 15 & 16, T. 159N., R. 60W.)











Farmland Classification—Cavalier County, North Dakota
(Tetra Tech - Sec. 15 & 16, T.159N., R.60W.)








MAP LEGEND

Area of Interest (AOI)
 Area of Interest (AOI)

Soils
 Soil Map Units

Soil Ratings

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of local importance
-  Farmland of unique importance
-  Not rated or not available

Political Features

Public Land Survey

-  Township and Range
-  Section

Municipalities

-  Cities
-  Urban Areas

Water Features

-  Oceans
-  Streams and Canals

Transportation

-  Rails

Roads

-  Interstate Highways
-  US Routes
-  State Highways
-  Local Roads
-  Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: UTM Zone 14N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Cavalier County, North Dakota
 Survey Area Data: Version 10, Mar 14, 2007

Date(s) aerial images were photographed: 9/13/1997

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Farmland Classification— Summary by Map Unit — Cavalier County, North Dakota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	8.8	0.7%
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	170.6	12.9%
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	All areas are prime farmland	101.3	7.7%
F116A	Easby clay loam, 0 to 1 percent slopes	Not prime farmland	4.8	0.4%
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	112.6	8.5%
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	99.7	7.6%
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	148.5	11.3%
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	261.2	19.8%
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	145.5	11.0%
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	5.1	0.4%
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	8.6	0.7%
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	138.6	10.5%
F302A	Vang loam, 0 to 2 percent slopes	All areas are prime farmland	41.6	3.2%
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	20.6	1.6%
F523A	Lowe loam, channeled, 0 to 2 percent slopes	Not prime farmland	51.5	3.9%
Totals for Area of Interest (AOI)			1,319.1	100.0%

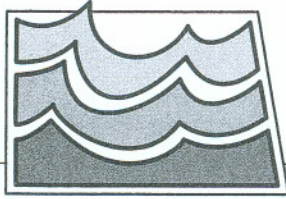
Description

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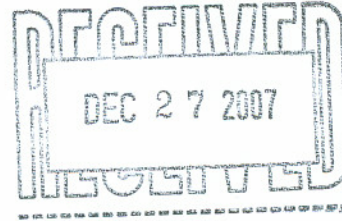


North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: <http://swc.nd.gov>

December 21, 2007

Jeffrey Rice
Tetra Tech
PO Box 30615
Billings, MT 59107



Dear Mr. Rice:

This is in response to your request for review of environmental impacts associated with the Project Area Environmental Scan, Cavalier County North Dakota, Tetra Tech Project No. 7551118A.600.

The proposed projects have been reviewed by State Water Commission staff and the following comments are provided:

- The property is not located in an identified floodplain and it is believed the project will not affect an identified floodplain.
- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.
- No sole-source aquifers have been designated in ND.

There are no other concerns associated with this project that affect State Water Commission or State Engineer regulatory responsibilities.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 328-4969.

Sincerely,

Larry Knudtson
Research Analyst

LJK:ds/1570