



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

**Application to the North Dakota Public Service Commission
for a Certificate of Site Compatibility**

Prepared for:
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TETRA TECH EC, INC.

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Case No.: PU-07-26

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1.0 INTRODUCTION

Langdon Wind, LLC (“Langdon Wind”) is submitting this application 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. Throughout the application, the 159 MW Project will be referred to as the Langdon Wind Energy Center. Additional facilities include operations and maintenance facilities, up to four meteorological towers, above and/or below ground electrical collection system(s) and cabling.

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 and collectively own and operate over 4,000 MW of renewable energy generation capacity, including ten projects in Iowa, Wisconsin, Minnesota, North Dakota, and South Dakota with a combined energy generation of over 600 MW.

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. 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 proposed 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 will submit an application for Conditional Use Permits from Cavalier County as well as Easby Township (collectively “County Siting”) for the wind project and transmission line. The proposed eleven mile 115 kV transmission line and the Project Substation that connects the wind farm collection system to the Langdon substation is an improvement associated with the transmission system and therefore does not require the submission of a Certificate of Corridor Compatibility (Corridor Certificate) or a Route Permit due to its 115 kV size. The 115 kV line will terminate at the Minnkota Power Cooperative (“MPC”) substation south of Langdon, North Dakota.

Table 1
Certificate Completion Checklist

State Authority	Description	Section
Chapter 49-22	PSC Guidelines: Energy Conversion and Transmission Facility Siting	1.1
Section A	Description	1.2, 1.3, 1.5, 4.4, 6.0-6.6, 9.0
1.	Type: Describe the type of energy conversion facility proposed and provide a diagram of the major process system or a flow diagram.	1.0, 4.1, Figure 6 and 7
2.	Product: Describe in general terms and technical terms the products to be produced by the proposed facility.	1.3.2, 6.1, 6.3
3.	Size and Design: Provide the following description of the production capacity and design	1.3.2, 4.1, 4.2, 4.3, 6.0
a.	Gross design capacity;	1.3.2
b.	Net design capacity;	1.3.2
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	1.3.1, 4.3, 5.1
e.	One (1) copy of all design data reports separate from the application.	Appendix B
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
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 C
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	1.3.1
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.	1.3.1, 1.3.2, 10.0-10.11, Figures 2 and 3
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 A
3.	Identify and map the criteria that led to the proposed facility location within the study area.	Figures 2 and 3, 1.2, 3.0
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, Figures 3 and 15
b.	Avoidance areas;	3.2, Figures 3 and 17
c.	Selection criteria;	3.3
d.	Policy criteria;	3.4
e.	Design and construction limitations; and	3.5
f.	Economic considerations.	3.6

State Authority	Description	Section
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, 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

State Authority	Description	Section
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 Siting

Wind facility siting is a process through which input is considered from several different entities. When considering where to locate the wind farm in North Dakota, Langdon Wind identified the current project area for further investigation due to its pre-existing infrastructure and its expected wind resource and transmission availability. Langdon Wind subsequently conducted environmental desktop and field studies of the project area, the results of which are embodied in the appropriate sections of this application, and further assessed wind resource and transmission. The Langdon project area was identified as an optimal site from environmental, wind resource, transmission, and economic perspectives.

The next step in the development process was to secure the site by entering into agreements with landowners that were interested in having Langdon Wind place wind turbines and associated facilities on their property.

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 County Siting requirements, and communications with Local, State and Federal agencies. These preliminary turbine locations are presented in this application for a Certificate (Figure 2). 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 issues.

Langdon Wind suggests that the Certificate define the site, maximum number of turbines, and structures related to wind generation to be located within the site. Within the permitted site, Langdon Wind proposes to locate turbines and other structures related to wind generation subject to required setbacks from environmentally sensitive areas, roads, residences or other setbacks described in the permit.

Once the Commission issues the Certificate, Langdon Wind will complete the additional studies required by the Certificate or Langdon Wind's siting process including geotechnical studies and more detailed wetland, biological, and cultural resource surveys. Langdon Wind will also further evaluate the site based on efficient construction of the Project. In addition, Langdon Wind will seek further input from

landowners regarding the location of wind facilities. Once these additional studies and communications are completed, preliminary turbine locations are re-evaluated for their appropriateness with the Certificate conditions and buffers. A final site plan for the Project will be submitted to the Commission prior to construction and a pre-construction meeting held with Commission staff to ensure that the site plan conforms to the Certificate requirements.

Wind project siting is unique in that the project occupies a large area and must not only conform to Certificate conditions but must also optimize the wind resource at the site. Ideally, the Certificate provides the parameters within which the developer may optimize the 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.

Langdon Wind believes that the aforementioned siting process is consistent with North Dakota siting rules and provides Langdon Wind the flexibility necessary to develop a timely, cost-effective project in an environmentally responsible manner.

1.3 Project Summary

Langdon Wind studied potential wind resources in North Dakota for siting an approximately 159 MW wind generation facility. Based on this review, Langdon Wind selected a Project area southeast of Langdon, North Dakota for additional study and preparation of a Certificate to the Commission. There were no alternative project areas considered during the initial project planning. Figure 2 identifies the selected Project Area. The Project Area was identified as optimal from wind resource, transmission interconnection, environmental, and economic perspectives. The proposed project area was selected considering the exclusion and avoidance criteria outlined in North Dakota Administrative Code (NDAC) 69-06-08 and was chosen as the location for the proposed wind generation site.

1.3.1 Proposed Site

The Project Study Area is the location within which leases from landowners have been obtained for the Project. The Project site was selected to include all areas within the Project Study Area so Langdon Wind can optimize wind resources, transmission interconnection opportunities, and economic factors, while avoiding and minimizing impacts to the environmental resources. The Project Site is located in Cavalier County within the following Township, Range, and Sections (Table 2):

Table 2
Project 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

The Project Site is approximately 30,400 acres (47.5 square miles) and the northwestern border of the site is located approximately one half mile southeast of the City of Langdon. The turbines will be placed throughout the Project Site. However, the Project Site will generally occupy less than one percent of the total land area. The Project Site location and preliminary layout is shown on Figures 1 through 5.

1.3.2 Projected Output

The Project will have a nameplate (gross) capacity of up to 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 MWhs. As with all wind projects, output is dependent upon wind resource, final design, site-specific features, and equipment.

1.4 Project Schedule

The commercial operation date is dependent upon permitting, equipment deliveries, and other development activities. Langdon Wind is targeting construction for June 2007 provided all pre-construction permits and approvals have been obtained.

1. Certificate of Site Compatibility: Langdon Wind anticipates the Certificate will be approved in May 2007.
2. Land Acquisition: Langdon Wind anticipates completion of sufficient easements from landowners in May 2007.
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. Completing permits is on the "critical path" for the Project and will allow Langdon Wind to move forward with other commitments on the Project including ordering long-lead time equipment.
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 June 2007, 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, 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 December 2007.
7. Commercial Operation: Langdon Wind anticipates commercial operation of the Langdon Wind Energy Center to begin December 2007.

As discussed in Section 1.3.2, 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 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 118.5 MW and OTP will own 40.5 MW. Langdon Wind will likely select a third-party contractor to perform the majority of the engineering and construction (E&C) of the wind farm. Langdon Wind and OTP will procure the turbine/tower package directly from a manufacturer for their respective projects.

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 5,954 MW of energy generated in 2006 in North Dakota, 68 percent was generated using coal-fired facilities. According to the report (PanAero Corporation 1999) prepared for the State of North Dakota Division of Community Services, "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, legal and accounting services), from commercial project Operations and Maintenance (O&M), 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/MISO region the opportunity to add to capacity adequacy requirements, to stabilize wholesale power prices, and to provide electricity from a clean, cost-effective renewable energy generation facility.

There is a critical need for additional energy production in the MAPP/MISO region. The July 1, 2003, MAPP Load and Capability Report stated that, under the minimum reserve requirements, deficits were expected as soon as 2008. MAPP members were urged to build additional capacity in order to maintain reserve levels higher than the MAPP minimum. The most recent MAPP report, dated August 1, 2006, indicates that deficits are now expected by 2011. Table 3 outlines the MAPP surplus/deficit forecasts through 2015.

Table 3
MAPP Summer Season Surplus/Deficit*

Year	MW	Reserve Margin Percentage
2006	1804	5.3%
2007	1464	4.2%
2008	1154	3.2%
2009	608	1.7%
2010	59	0.2%
2011	-568	-1.5%
2012	-1034	-2.7%
2013	-1729	-4.4%
2014	-2416	-6.0%
2015	-4017	-9.7%

* From Pages III-3 and III-4 of the MAPP 2006 Load and Capability Report

While the deficits have been identified, the new sources to fill these voids have not. North Dakota has a unique opportunity to begin providing capacity to meet those forecasted deficits with clean, efficient, renewable energy. The Project intends to be a significant source of energy for meeting the region's needs over the next 30 years.

2.2 Alternatives

Feasible technology alternatives to wind include generation 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 2007.

3.0 SITE SELECTION CRITERIA

Langdon Wind is evaluating the proposed 30,400 acre (47.5 square miles) site to determine the best locations for up to 106 wind turbines. Siting turbines is a process through which input from several different entities is considered. The Langdon Wind Energy Center Study Area was singled out as an optimal site from an environmental, wind resources, and economic perspective (Figure 2). Cities are considered avoidance areas.

Langdon Wind secured voluntary wind option agreements with landowners 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 has used this siting process in recent wind turbine projects, including projects in Minnesota and North Dakota. 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 site design. These criteria are discussed in this section.

3.1 Exclusion Areas

Per Section 69-06-08-01-1, the following geographical areas (Table 4) 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 5) 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 4
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 recommends establishing a buffer of 0.25 miles from Waterfowl Production Areas.	7.7, 7.9, 7.13, 7.14, 7.15, Figures 2, 3 and 9
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		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 0.1 percent of the yearly production for the top five commodities in Cavalier County.	7.9, 7.10, Figures 14 and 15
Irrigated land	None		7.9, Figure 14
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 (<i>Carex Backii</i>) is known to occur within the Project Area. This plant is a wetland species and will be avoided along with the wetland. Langdon Wind is working with USFWS and ND Game and Fish to avoid potential impacts.	7.13, 7.14, 7.15, 7.16

Table 5
Avoidance Areas

Avoidance Areas	Present within Project Site?	Proposed Buffer	Section Addressed
Historical resources which are not designated as exclusion areas	None	In consultation with the North Dakota SHPO, a professional archaeologist will survey the project area once exact turbine locations have been established and will establish buffers around any identified resources.	7.7, Appendix C.1
Areas within the city limits of a city or the boundaries of a military installation	City limits-None Military-None		7.3, Figures 2 and 3
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, 14 and 17
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 6).

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 7).

**Table 6
Selection Criteria**

Selection Criteria	Potential Adverse Effects	Section Addressed
The impact upon agriculture:		
Agricultural production	Assuming all turbines are 1.5 MW, therefore 106 turbines, approximately six acres of land will be impacted due to turbine placement and an additional 77.5 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, Figures 3, 4 and 5
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 16 and 17
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 17
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.	7.4
Governmental services and facilities	Governmental services and facilities will not be impacted.	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, Figures 4 and 10
Retail service facilities	No adverse impacts anticipated.	7.4

Table 6 (Continued)

Selection Criteria	Potential Adverse Effects	Section Addressed
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
The impact upon		
Local institutions	No impacts are anticipated.	7.4
Noise sensitive land uses	The noise sensitive land uses within the Project site 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, 5
Rural residences and businesses	No turbines will be placed within 1,400 feet of family homes.	7.2, 7.3, 7.10, Figures 3, 4 and 5
Aquifers	No impacts will occur.	7.11
The impact upon:		
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	No impacts to livestock are anticipated from operation of the facility. Based on biological surveys, there is a potential for small numbers of avian species and bat collisions with the turbines for the Project, but the impact is expected to be minimal. Mitigative measures in turbine siting will minimize the potential for these impacts. Langdon Wind is planning to conduct pre-construction monitoring of avian species.	7.10, 7.16, 7.15, Appendix C.2
Plant life	Assuming all turbines are 1.5 MW, approximately 84 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, Figure 14
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
The cumulative effect of the location of the facility in relation to existing and planned facilities and other industrial development	No impacts are anticipated to existing and planned facilities and other industrial development.	7.3

Table 7
Policy Criteria

Policy Criteria	Suitable Policy or Practice of Applicant	Section Address
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 9
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 and EPC will employ BMPs during construction to monitor soil impacts and segregate topsoil. All disturbance sites exceeding appropriate size criteria will prepare storm water prevention plans.	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 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 other wind farms. These setbacks limit the amount of land available for wind development. In addition, as noted in Section 3.6, proximity to adequate transmission is imperative to wind project siting.

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. Langdon Wind proposes setbacks from WPAs and plans to avoid all wetland easements (there are no grassland easements in the project area). Any direct impacts to USFWS wetland 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. Figure 9 identifies the USFWS WPAs and wetland easements within the Project site.

3.6 Economic Considerations

Economics were considered when selecting a location for the Project. As discussed above, it is important to select a site with a wind resource capable of generating energy. The Langdon Wind Energy Center has ample wind resources in the area. Information on the wind resource at the site is discussed in Sections 5.2 and 5.3.

Another factor that is considered in relation to economics is the availability of a transmission system in the vicinity of the Project site. Furthermore, having permission to interconnect into an existing transmission system is essential. If no transmission system is present, the cost of interconnection increases due to the need of constructing a lengthy transmission line and large substation to an existing electricity service provider. In the Project area, there is currently ample transmission injection capacity and the Project interconnects to a substation owned by MPC and OTP and located approximately five miles south of Langdon, North Dakota. Langdon Wind has filed an interconnect request with MPC that will allow a connection into the Langdon Substation.

One of the most important economic considerations related to the Project is the need to qualify for the Federal production tax credit (PTC). The PTC is approximately 1.8 cents per kWh for 10 years. The Project will not be viable without receiving the PTC, which has been extended through 2008. Approval of permits will help ensure Langdon Wind is operational before the 2008 expiration date of the PTC.

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 use up to 106 turbines. This application uses all GE 1.5 MW machine as a 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 kW. Each turbine will have an 80-meter (262 ft) hub height and a rotor diameter (RD) up to 82.5 meters (271 ft) (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 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 public ROW. Typically, this infrastructure is run adjacent to the 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 32 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. Figure 7 is a diagram of the path of energy from the wind farm to energy users. Figure 8 shows a typical wind farm facility layout. The feeder system distributes power to the Project Substation. At the Project Substation, the power will be transformed to 115 kV and transmitted via overhead 115 kV transmission lines, interconnecting at the Langdon Substation. The Project Substation and 115 kV interconnection into the Langdon Substation, and possible upgrades at the Langdon Substation, are associated facilities of the transmission system and will conform to MISO standards.

4.1.1 Wind Energy Center Layout

Langdon Wind will develop a site layout that optimizes wind resource 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. Analysis of wind direction data suggests that the optimal turbine string alignments are from west to east and from east-northeast to west-southwest. Design of the turbine array and collection system will minimize energy loss due to wind turbine wakes and turbulence and electrical line losses.

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 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 8 identifies the minimum setbacks applicable to the Project. Langdon Wind will request a Conditional Use Permit that will allow tower heights up to 80 meters with turbine rotor diameters up to 96 meters for a maximum turbine height of 420 feet.

Table 8
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

An Operations and Maintenance (O&M) building will be constructed within the Project site pending the interconnection study and the location of the Project Substation. See Section 6.5.4 for a description of the O&M building.

The electricity generated by each turbine is stepped up by a pad-mounted transformer at the base of each turbine to power collection line voltage of 34.5 kV. The electricity generated at each turbine is collected by a system of underground or overhead power collection lines within the Project site and brought to the Project Substation.

Langdon Wind will construct one or more meteorological towers within the Project site boundary. It is anticipated that the site will include up to 4 permanent meteorological towers.

4.3 Land Rights

Langdon Wind has obtained easements for an approximately 159 MW project. Land rights will encompass the proposed wind farm and all associated facilities, including but not limited to wind and buffer easements, wind turbines, access, 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 close proximity to existing transmission infrastructure, an existing substation, and landowners' interest in participating in the Project. Land-use patterns and environmentally sensitive features were factored into the site selection criteria. The site boundary encompasses an area of approximately 30,400 acres. However, the land occupied by the wind farm will be less than one percent of this area, assuming up to 106 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 120 acres, including aggregate-surfaced access roads up to 32 feet wide for the 1.5 MW turbines. See Section 7.0 for a detailed description of the Project Site impacts. Figures 4 and 5 show preliminary turbine locations for proposed turbine locations, which are subject to change during micrositing.

5.2 Wind Resource Areas – General

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 the wind resources within the Project vicinity are Class 4 winds or greater. Class 4 winds have an average annual wind speed of 13 miles per hour.

Langdon Wind has reviewed and analyzed meteorological information for Cavalier County and the Project Site. This information is described in Section 5.3.

5.3 Wind Characteristics in 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 site. The data from the Project Site was supplemented using Langdon NDAWN data and other data from a meteorological tower in Rolla, ND. 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 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 Project layout, turbines, electrical system, and associated facilities. A summary of this information is included in the Design Data Report (Appendix B). Additional information addressed in this section is project construction, schedule, operation, and decommissioning of the site. Currently, Langdon Wind wishes to preserve the right to evaluate and select turbine equipment of varying sizes and outputs. There are other turbines that are feasible choices for the Langdon site that are available from various manufacturers. Turbine type may affect the number and configuration of the turbine array. The current turbine array proposed utilizes up to 106 wind turbines. Since most of the turbines that will be used will be the GE 1.5 MWs and the others are unknown, details for the GE 1.5 MW turbines are presented below.

6.1 Langdon 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, storage areas, and O&M facilities will be installed as necessary to fully accommodate all aspects of Project construction, operation, and maintenance.

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 permits automatic, independent operation, and remote supervision, thus allowing the simultaneous control of many wind turbines. Langdon Wind will be responsible for Project operation and maintenance 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 assure 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 106 GE 1.5 MW turbines. Langdon Wind seeks the flexibility to select the most appropriate technology at the time for the Project 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.

6.2.1 Turbine

In this application Langdon Wind provides information on the GE 1.5 MW machine as a proxy for the 1.5 MW class of turbine. Figure 6 represents the components of a typical wind turbine. The GE 1.5 MW turbine begins operation in wind speeds of 3.5 m/s (7.8 mph) and reaches its rated capacity (1.5 MW) at a wind speed of approximately 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).

The 1.5 MW turbines have active yaw and pitch regulation and asynchronous generators. The turbines use a bedplate drive train design where all nacelle components are joined on common structures to improve durability.

The 1.5 MW turbines have Supervisory Control and Data Acquisitions (SCADA) communication technology to control and monitor the wind farm. SCADA communications system permits automatic, independent operation and remote supervision, thus allowing the simultaneous control of many wind turbines. Operations, maintenance and service arrangements between the turbine manufacturer and Langdon Wind will be structured so as to provide for timely and efficient operations. The computerized data network will provide detailed operating and performance information for each wind turbine. Langdon Wind will maintain a computer program and database for tracking each wind turbine's operational history.

Other specifications of the turbines include:

1. Rotor blade pitch regulation.
2. Gearbox with three-step planetary spur gear system.
3. Double fed three-phase asynchronous generator and an asynchronous 4-pole generator with a wound rotor.
4. A braking system for each blade (three self contained systems) and a hydraulic parking brake (disc brake).
5. Yaw systems are electromechanically driven.

6.2.2 Rotor

The rotor consists of three blades mounted to a rotor hub. The hub is attached to the nacelle, which houses the gearbox, generator, brake, cooling system and other electrical and mechanical systems. The preliminary 1.5 MW turbine design identifies a 70.5 m (231 feet) to an 82.5 m (271 feet) RD, with a swept area of 3,904 m² (42,022 ft²) for the 70.5 m RD and 5,346 m² (57,544 ft²) for the 82.5 m RD. The rotor speed will be 10.2 to 22.0 revolutions per minute (rpm) for the 1.5 MW turbines.

6.2.3 Tower

The towers are conical tubular steel with a hub height of 80 to 105 meters (262 to 345 feet). The turbine towers, on which the nacelle is mounted, consist of three to four sections manufactured from certified steel plates. All welds are made in automatically controlled power welding machines and ultrasonically inspected during manufacturing per American National Standards Institute (ANSI) specifications. All surfaces are sandblasted and multi-layer coated for protection against corrosion. Access to the turbine is through a lockable steel door at the base of the tower.

6.2.4 Lightning Protection

Each turbine is equipped with a lightning protection system. The turbine is grounded and shielded to protect against lightning. The grounding system will be installed during foundation work, and must be designed for local soil conditions. The resistance to neutral earth must be in accordance with local utility

or code requirements. Lightning receptors are placed in each rotor blade and in the tower. The electrical components are also protected.

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 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. An interconnection study for the Project is underway with MAPP. The electrical system design and interconnection details will be determined as a result of studies and discussions with MAPP. The existing Langdon Substation and transmission system will potentially require upgrades. The substation will, depending upon engineering requirements, be reconfigured with a four-breaker ring bus, and the existing Langdon to Hensel 69 kV circuit will be upgraded to 115 kV.

All utility protection and metering equipment will meet Langdon Wind and National Electric Safety Code (NESC) standards for parallel operations. The construction manager will ensure that proper interconnection protection is established.

6.4 Langdon Wind Energy Center 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 or underground feeder lines;
- design and construction of the Project Substation;
- 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 32 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
- 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
- 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 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
- Clearing and grading for the O&M building
- Installation of any site fencing and security
- 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 32 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 SCADA system.

6.5 Project Operation and Maintenance

Each wind turbine in the Project will communicate directly with the SCADA system for the purposes of performance monitoring, energy reporting and trouble-shooting. Under normal conditions each wind turbine operates autonomously, making its own control decisions. The Project will be operated and maintained by FPLE Operating Services.

Langdon Wind and the appropriate supplier will control, monitor, operate, and maintain the Project by means of a SCADA computer software program. In addition to regularly scheduled on-site visits, the wind farm may be monitored via computer.

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” facility 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 system.
- 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 the 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 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.

6.5.3 Operations and Maintenance Facility

The final location and layout of the O&M facility will be provided prior to construction. Typically buildings used for this purpose are approximately 5,000 square feet, which house all the necessary equipment to operate and maintain the Project. Generally, an associated septic system and a well are installed near the O&M building.

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 Project 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 considered as well as selection and policy criteria in the selection and design of the site. 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 is included in Appendix A.

7.1 Description of Environmental Setting (Introduction)

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. In 2005, Cavalier County had a population of 4,330, a decline of 10.4 percent from the 2000 census level. Cities and small unincorporated towns near the Project Area include Langdon (population 2,085), Osnabrock (population 200), Alsen (population 95), Nekoma (population 57), and Loma (population 24).

7.2 Demographics

7.2.1 Description of Resources

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. Information on demographics and housing for this section was taken from the 2000 U.S. Census with the exception of population statistics for Cavalier County, which were updated in 2005.

The site is located in portions of Perry, Easby, Nekoma, and Osnabrock Townships in Cavalier County, North Dakota. The population of Cavalier County is 4,330 and populations of the Townships within the Project are listed in the table below. The per capita income and poverty levels in these townships vary in comparison to the County average. Table 9 summarizes the population and economic characteristics within the Project site. According to the 2000 U.S. Census, the largest industries employing residents of Cavalier County are Agriculture and Services.

Table 9
Population and Economic Characteristics

Location	Population	Per Capita Income	Percentage of Population Below Poverty Level
Cavalier County (entire)	4,330	\$15,817	9.6%
Manilla Township	112	\$15,643	0%
Perry Township	47	\$24,143	0%
Easby Township	52	\$11,595	53.5%
Nekoma Township	47	\$13,527	27.8%
Osnabrock Township	48	\$35,734	0%

7.2.2 Impacts

Short-term impacts to socioeconomic resources will be relatively minor. Under the 1.5 MW turbine development scenario (for up to 106 turbines), up to 84 acres of agricultural land will be removed from production due to conversion to turbine sites and associated access roads. Landowner compensation will be established by individual lease agreements. In general, agricultural areas surrounding each turbine can still be farmed. In addition, in an environment of uncertain and often declining agricultural prices and yields, the supplemental income provided to farmers from wind energy leases will provide stability to farm incomes and thus will help assure the continued viability of farming in the Project area. Project construction will not cause additional impacts to leading industries within the Project site. There is no indication that any minority or low-income population is concentrated in any one area of the Project, or that the wind turbines will be placed in an area occupied primarily by any minority group.

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 as well as 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 counties and the state.

It is likely that general skilled labor is available either in the County or the State to serve the basic infrastructure and site development needs of the Project. Specialized labor will be required for certain components of the wind farm development; it is likely that this labor will be imported from other areas of the State or from other states as the relatively short duration of construction does not warrant special training of Local or Regional labor. Balancing the use of local contractors and imported specialized contractors will likely alleviate any labor relation issues.

No effects on permanent housing are anticipated. During construction, out-of-town laborers will likely use lodging facilities in and around the City of Langdon. Operation and maintenance of the facility will require few laborers; sufficient permanent housing is available within the county to accommodate these laborers.

Long-term beneficial impacts to the County's tax base as a result of the construction and operation of the wind farm 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.

Continuing to establish the north-east region of North Dakota as an important producer of renewable energy sources, such as wind, may spur the development of wind-related businesses in the area, in turn contributing to the economic growth in the region.

7.2.3 Mitigative Measures

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 the land from agricultural production.

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 east of North Dakota Highway 1 and near the towns of Langdon, Nekoma, and Osnabrock. The Project proposes to install approximately 159 MW of wind power, consisting of up to 106 wind turbines within the 47.5 square mile (30,400 acres) Project area. The current land use within the Project area is rural agricultural land used for crops and livestock grazing. The Project area is not within the Langdon city limits or within an area of known military installation. The development of the Langdon Wind Farm 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, database information, and visits to the Project site, it was determined that the majority of the land area at the site is agricultural land use. Table 10 identifies current land use in the Project site based on the USFWS database. Over ninety (90) percent of the Project site is used for agricultural purposes. Native grasslands form approximately three (3) percent of the site and are primarily used for grazing livestock. Approximately 808.81 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. Approximately four (4) percent of the site is wetland, lake, open water, or riparian area.

Table 10
Major Habitats and Their Relative Abundance in the Project Site

Habitat	Acreage	Percent of Project Site
Grassland	836.02	2.74%
Cropland	28,517.32	93.61%
Forest	7.22	0.02%
Wetlands (isolated and potentially jurisdictional)	1,101.04	3.62%
Lakes	2.67	0.01%
Conservation Reserve Program (CRP)	808.81	2.65%

7.3.2 Impacts

The development of the wind project will not result in a significant change in land use. The area will retain the rural sense and remote 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, landowners frequently plant crops and/or graze livestock to the edge of the access roads and turbine pads. The access roads are 32 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 if necessary reseeded with appropriate vegetation.

The permanent site layout has not been determined, but installation of an approximately 159 MW facility will result in the conversion of approximately six acres of land assuming 106 1.5 MW turbines and 77.5 acres of land for aggregate-surfaced access roads. The Project facilities will also include an O&M facility, Project Substation, and transmission line. These areas will be permanently converted from agricultural land use into wind facilities. Approximately two acres will be converted for the Project Substation and one acre will be converted for the O&M facility. Approximately 15 acres of land will be temporarily impacted for contractor staging and lay down areas.

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, OR, summarized survey results as:

“Views of wind turbines will not negatively impact property values. Based on a nation-wide 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 land use 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 site. The closest town to the Project site is the City of Langdon and is the Cavalier County seat. The City provides sanitary sewer, water, utility services, educational facilities, and recreational facilities such as arenas, theaters, and parks. 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 site visits.

Roads

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

Traffic

The existing traffic volumes on the area's county highways are documented in Table 11 and Figure 10. 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, or Average Daily Traffic (ADT). In general, the State Highways in and near the Project site carry higher levels of traffic for rural North Dakota, but represent only a fraction of the capacity of the roadway.

Additional county and township roads run through the Project site, 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 through northern portion of Project Area	1,775/310
Highway 66 through southern portion of Project Area	1,025/140

Source: 2005 Traffic Volumes from NDDOT, Bismarck

Water Supply

Townships have limited public infrastructure services, which is typical of most townships. Homes typically utilize septic systems and water wells 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. These areas are presented in Appendix D. The microwave interference study and worst case Fresnel Zone calculations from Comsearch are attached as Appendix C.2.

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 20 miles of aggregate-surfaced access roads assuming 106 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 approximately 32 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 site, the traffic impacts are considered negligible. Since many of the area roadways have minimal ADT currently, 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 site 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 site. 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; temporary dewatering of groundwater may be required during construction of turbine foundations. It is likely that the Project will require a single domestic-sized well for the O&M facility.

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 4 and 5.

Traffic

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

Water Supply

In the event wells are abandoned, they will be sealed as required by North Dakota law. 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 161North, Range 60 West. The airport is located one-half mile 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 fields (EMF) refers to electric and magnetic fields that are present around any electrical device. Electric fields arise from the voltage or electrical charges and magnetic fields arise from the flow of electricity or current that travels along transmission lines, power collection (feeder) lines, substation transformers, house wiring, and electrical appliances. The intensity of the electric field is related to the voltage of the line and the intensity of the magnetic field is related to the current flow through the conductors (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 relatively rural area of North Dakota. Hazardous wastes from large industrial or commercial activities are not likely. Potential hazards may exist in rural areas from old gasoline facilities, landfill sites, and private activities. A Phase I Environmental Site Assessment (ESA) of the Project site will be conducted to identify any Recognized Environmental Conditions (RECs) that may exist.

Potentially hazardous materials associated with the Project include fluids found in association with turbines and substation/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, power collection lines are expected to be similar to distribution lines that are present already (located along the edges of fields and roadways), 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 electric fields pose no risk to humans, the question of whether exposure to magnetic fields potentially can cause biological responses or even health effects continues to be the subject of research and debate. Based on the most current research on electromagnetic fields, 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 will be used to minimize risk associated with potential RECs as defined by the American Society for Testing and Materials (ASTM) standard that may pose a threat to human health and safety. Significant findings are not anticipated due to the known historic uses of the property. The Applicant does not anticipate generating 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 is coordinating with FAA on the Project layout and lighting and will seek approval 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 to EMF exposure such as encouraging conservation, encouraging distributed generation, continuing to monitor EMF research, encouraging utilities to work with customers on household EMF issues, and providing public education.

Hazardous Materials / Hazardous Waste

Since no significant findings are anticipated, no mitigation is proposed at this time. All petroleum fluids will be contained within the wind turbines and electrical equipment. Any petroleum wastes generated 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 ROW and 1,400 feet from occupied homesteads. 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 dBA except during periods of high wind when the turbines would be operating (Figure 11). During these times, 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

Langdon Wind is proposing to install up to 106 wind turbines over an approximate 47.5 square mile permit area near Langdon, North Dakota. 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 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 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 it 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.

7.6.2 Mitigative Measures

The primary mitigation measure used for wind turbines is setback distance. Langdon Wind is committed to the 1,400-ft 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 50dBA 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 Impacts

7.7.1 Description of Resources

Tetra Tech received a response from the North Dakota SHPO regarding a query letter requesting a list of historical sites within the Project Area. Based on the response, the SHPO recommended a Class I Survey of the Project Area and was unable to provide a list of historical sites within the Project Area.

A Class I Survey, including a search of the SHPO’s site and manuscript files, was conducted by Metcalf Archaeological Consultants, Inc. (Metcalf) for the Project Area. Based on the results of the Class I Survey, there have been seven archaeological and two architectural investigations in the region. No archaeological sites and only one prehistoric isolated find were on file for the Project Area. Among the 150 historic sites in the region, most are architectural (businesses and residences) in the city of Langdon. Additionally, there are five site leads for abandoned post offices, of which most lack maps or other more precise locational data.

Maps available for review at the time of this study do not depict cemeteries or other burial sites within the Project Area and no burial sites were observed during the Site visit.

Table 12
Previously Identified Archaeological Sites
within the Project Area

Site Number	Site Name	Type	Location			Comments
			Township	Range	Section	
32CV111	N/A	Architectural	159N	59W	2	Bridge; Not Eligible for NRHP (Hufstetler, 2000)
32CV16	N/A	Architectural	159N	59W	23	Lutheran Church Steeple; Not Eligible for NRHP (Vyzralek, 1985)
32CV75	N/A	Architectural	160N	59W	32	Building; Not Eligible for NRHP (Persinger, 1988).
32CV74	N/A	Architectural	160N	60W	12	Granary; Not Eligible for NRHP (Persinger, 1988).

7.7.2 Impacts

Based on the results of the Class I Survey, there are no archaeological sites and only a single isolated archaeological find (a projectile point) on record. The area is also relatively devoid of topographic relief beyond that created by the valley of the South Branch Park River. The area is expected to have only moderate to low potential for the presence of archaeological sites. Additionally, the majority of the area has been plowed and this would reduce the integrity of any sites present.

Langdon Wind informally consulted with the SHPO and the parties agreed that a pre-construction 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 would be appropriate (see survey protocol in Attachment E). Langdon Wind will make every effort to avoid impacts to identified archaeological resources. In the event that an impact would occur, Langdon Wind would determine the nature of the impact and consult with the SHPO on whether or not the resource was eligible for listing in the National Register of Historic Places (NRHP).

7.7.3 Mitigative Measures

Mitigation for project-related impacts on NRHP-eligible archaeological resources may include adjustment of the array during the micrositing phase of the project if necessary to minimize Project impacts on a resource and/or additional documentation through data recovery.

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 – Mandan – Hidatsa & Arikara Nation Phone: 701.627.4781	Ambrose Littleghost, THPO Spirit Lake Tribe Phone: 701.996.4477
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The Native American Graves Protection and Repatriation Act of 1990 allows Tribes to protect American Indian graves and to repatriate human remains. Tetra Tech has not received a response from the Tribal Historic Preservation Officers (THPO) or Tribal Cultural Preservation Officers (TCPO) regarding a query letter requesting a list of archeological sites within the Project Area. 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 site 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 USFWS Land Use Map, Figure 14. Cultivated land comprises approximately 28,517 acres of the Project site. Native grasslands comprise 836 acres of the land. Approximately 94 percent of the land in the Project site is utilized for agricultural purposes.

According to the 2002 Census of Agriculture, wheat is the most widely grown crop within the Project Site. Hay, sunflowers, and corn are additional crops in the Project site. 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 \$90,529,000. Crop sales account for approximately 98 percent of the total value of agricultural products sold.

Since crops comprise a large percentage of the value and 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 National Resource 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. Table 13 lists the soils considered Prime Farmland and soils of statewide or local importance within the Project site. Figure 15 shows the prime farmland soil distribution in the Project site.

According to the North Dakota State Water Commission, Water Permit Retrieval System, there is one property with an irrigation permit near the Project Area in Langdon. No irrigation permits or irrigation systems were identified within the Project Area. However, there are 52 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. Woodlands within the Project Area are depicted on Figure 3 and 14.

**Table 13
 Prime Farmlands Cavalier County**

Map Symbol	Soil Unit	Prime Farmland	Farmland of Statewide Importance	Prime Farmland Only When Drained
F143A	Barnes-Svea loams, 0-3 percent slopes	X		
F143B	Barnes-Svea loams, 3-6 percent slopes	X		
F154B	Svea-Buse loams, 3-6 percent slopes	X		
F302A	Vang loam, 0-2 percent slopes	X		
F122A	Svea-Cresbard loams, 0-3 percent slopes		X	
F122B	Barnes-Cresbard loams, 3-6 percent slopes		X	
F135A	Hamerlly-Cresbard loams, 0-3 percent slopes		X	
F143C	Barnes-Buse-Langhei loams 6-9 percent slopes			
F100A	Hamerlly-Cresbard complex, 0-3 percent slopes			X
F101A	Hamerlly-Wyardloams, 0-3 percent slopes			X

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 0.057 acres of land due to turbine placement. Roads will be 32 feet wide and will vary in length. Currently, road impacts are estimated at approximately 77.5 acres assuming 106 1.5 MW turbines. Approximately 15 acres of land will be temporarily impacted for contractor staging and lay down areas. 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.

Most of the soil considered prime farmland within the Project site is located in the southern and eastern portions of the site (Figure 15). Approximately six percent of the site is comprised of prime farmland and 11 percent prime farmland if drained. The final layout will site only a limited number of turbines and facilities in prime farmlands. The preliminary layout includes up to 45 turbines and associated access roads (three acres) in prime farmland. Assuming all 1.5 MW turbines were used and associated facilities were placed within prime farmland areas, approximately six acres of prime farmland will be impacted, or 0.06 percent of prime farmland in the Project site. Using the scenario with all turbines and facilities located in prime farmland, the maximum 0.06 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 2006). 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 family homes. 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 as much as possible. Only land for the turbine 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

Thirty seven soil map units are currently mapped at the NRCS Order III level in the Project Area (Figure 16). 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 twenty-five (25) and nineteen (19) percents respectively. The next five most common soil types are Svea-Cresbard loams (10%), Svea-Buse loams (9%), Vallers-Hamerly loams (8%), Hamerly-Cresbard loams (8%), and Cavour-Cresbard loams (5%). 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 0 to 3 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 0 to 1 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 0 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 0 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 0 to 6 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 3 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 0 to 3 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 0 to 6 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 0.057 acres per turbine for access roads and turbine foundations. The total impact assuming 106 1.5 MW turbines, is expected to be six acres. Approximately 15 acres of land will be temporarily impacted for contractor staging and lay down areas. 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.

The potential for wind and water erosion exists in the soil types found on the site. Construction practices will minimize soil erosion during and after turbine construction, and impacts are not expected to be measurable.

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, BMPs for erosion and sediment control (SN 19389 9/99) will be utilized. Construction sites will maintain sediment control practices in accordance with the stormwater Pollution Prevention Plan (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 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. Field review of the Project Area identified several gravel pits; the location of these pits is presented in Table 14.

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. It is probable that operations and maintenance water requirements will be satisfied with a single domestic sized water well. Depending on the location of wind turbines and supporting infrastructure, it is possible that sand and gravel resources could be made unavailable for development.

Table 14
Identified Gravel Pit Locations

Township	Range	Section	Quarter
159N	60W	24	SW
159N	59W	21	SE

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 structures. Wind turbines will be sited so as to avoid sand and gravel resources identified in the Project Area. Where sand and gravel resources cannot be avoided, Langdon Wind will coordinate with landowners regarding impacts and any necessary mitigation. No other 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 17.

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 site. The wind turbines will be built on uplands; this will 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 DOH prior to construction of the Project.

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.

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. Some wetlands within areas of agricultural production appear to have been converted to vegetated, grassed waterways. The wetland depressions have cool season grasses planted that are then harvested for hay. Many other wetlands are subject to heavy cattle grazing and many have been excavated to provide more permanent water sources for cattle. 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.

Within the Project Area, there are also 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 Figures 2 and 9.

7.13.2 Impacts

Some of the proposed turbine locations may impact possible wetland features. Proposed access roads and buried collectors may also result in impacts to wetlands regulated under the jurisdiction of the United States Army Corps of Engineers (USACE)-Bismarck District. Only the USACE can make a jurisdictional

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

determination and such determinations are generally not made until a permit application is filed or potential compliance issue exists.

Potential wetlands in relation to the proposed turbine array and transmission line are shown on Figure 17. On-site delineation of these features prior to construction will help identify those sites which should be avoided where practicable. The wetland inventory protocol that Langdon Wind will follow is contained in Attachment E. 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 proposed 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 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 are unavoidable, then Langdon Wind will seek coverage under a Section 404 USACE Nationwide Wetland Permit. 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 Best Management Practices (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 a flat to gently rolling landscape 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 and transmission 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 NDGF during micro-siting to minimize impacts to vegetation within the Project Area. Langdon Wind will conduct a pre-construction inventory of existing wetlands, native prairie, and woodlands. The pre-construction inventories will have varying levels of detail with the most specific detail in the vicinity of construction. These pre-construction inventory reports will be filed with the PSC and applicable agencies prior to construction. 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.

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 wind farm site was obtained from a variety of sources including observations during a Site visit, communication with local residents and information from the North Dakota Game and Fish Department (NDGFD), North Dakota Parks and Recreation Department (NDPRD), North Dakota Natural Heritage Inventory (NDNHI), University of North Dakota (UND) Extension Office and USFWS.

Wildlife in the Project site consists of birds, mammals, fish, reptiles, amphibians, and insects, both resident and migratory, which utilize the Project site 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, mink, skunk, weasel, white-tailed deer, coyote, red fox, badger, porcupine, and rabbit. During field visits of the site white-tailed deer (*Odocoileus virginianus*), red fox (*Vulpes fulva*), moose (*Alces alces*), white-tailed jackrabbit (*Lepus townsendi*), thirteen-lined ground (*Spermophilus tridecemlineatus*) were observed. Avian species observed during field visits include bald eagle (*Haliaeetus leucocephalus*), rock dove (domestic pigeon; *Columba livia*), prairie falcon (*Falco mexicanus*), snow bunting (*Plectrophenax nivalis*), grey partridge (*Perdix perdix*), european starling (*Sturnus vulgaris*).

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.

7.15.2 Impacts

During Tetra Tech's site visit no stick nests were observed within the Project Area. The Project Area has similar general habitat and species composition compared to other wind farms, particularly in the upper

Midwest, and it is anticipated that bird fatality rates documented at other locations will be similar to the proposed Project. Studies outside of California have identified an average of 1.83 fatalities/turbine/year for all birds (0.006 are raptors). Studies at Buffalo Ridge in Minnesota estimated 0.98 fatalities/turbine/year. Potential indirect impacts to breeding birds due to displacement is possible in the immediate vicinity of the turbines.

Potential bat roosting habitat at the site includes trees and old farm buildings. Bats may forage over the entire Project area, although the extent of use is not known. Bat fatalities have been reported for most wind farms where post-construction monitoring data is available. Reported estimates of bat mortality at wind farms through 2001 ranged from 0.07 to 10 bats/turbine/year. Bat fatality rates in the Upper Midwest are estimated at 1.7 bats/turbine/year or 2.7 bats/MW/year (NWCC 2004). Most bat casualties at wind farms have been migratory species that conduct long migrations between summer roosts and winter hibernacula. The proposed site does not contain topographic features that may funnel bats during migration.

The impact of the proposed Project on wildlife is expected to be minimal. There is potential for avian and bat collisions with facility turbines or meteorological towers. Additional impacts may include a small reduction in the available habitat that some of the wildlife uses for forage or cover. Operation of the wind farm will not change the existing land use.

7.15.3 Mitigative Measures

Langdon Wind has conducted environmental studies of the Project site to aid in the initial placement of turbines, roads, and associated facilities to avoid or minimize impacts to wildlife and habitat. Also, Langdon Wind is coordinating with USFWS and NDGF regarding 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 site 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.
- Conduct pre-construction avian monitoring at the site. Pre-construction avian monitoring protocols are contained in Appendix E.
- Langdon Wind will conduct pre-construction inventories of wetlands in the vicinity of proposed turbines, access roads, and associated facilities to minimize impacts at the site. Initial site inventories have been conducted and more detailed inventories will occur once turbine siting is completed to assess the construction zone. These inventory reports will be filed with the PSC and applicable agencies prior to Project construction.
- 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 site. Langdon Wind will design their facility 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 departments were contacted to review the Project site 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)
- Bald Eagle (Threatened)
- 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 Bald eagle (*Haliaeetus leucocephalus*) 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.

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 NDGFD reviewed the Project and identified native prairie habitats as potential areas of concern. Langdon Wind will conduct a pre-construction inventory of native prairie habitats and will strive to minimize impacts to high quality prairie areas.

The NDPRD maintains a Natural Heritage Inventory Database (NHID), which is the most complete source of data on North Dakota’s rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features. Three plants identified by the NDPRD as being rare are located near the project area. Only one of these plants, Back’s sedge (*Carex backi*), is actually located within the project area, however it is located 15,840 feet (3 miles) from any project facilities. Big bluestem (*Andropogon gerardii*) and nodding locoweed (*Oxytropis deflexa*) are known to exist outside of the project area to the west and north respectively.

7.16.2 Impacts

Impacts to Rare and Unique Resources are unlikely. The three T&E species listed by the USFWS may be occasional visitors to the area and will not likely be affected by this proposed action. Back’s Sedge is the only Rare or Unique plant found within the project area. Sedges are generally found in shallow marshes, sedge marshes, and fresh (wet) meadows. These 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 15 summarizes the resources that will be impacted as a result of the Project and the appropriate mitigation.

Table 15
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 84 acres of land will be impacted for aggregate-surfaced access roads and six acres of land will be impacted. An additional 13 acres of land will be required for the O&M facility and substation. Approximately 15 acres of land will be temporarily impacted for contractor staging and lay down areas.	Langdon Wind will work with landowners and regulatory agencies to minimize impacts of the Project.

Table 15 (Continued)

Resource	Impact	Mitigation
Public Services	No impacts are anticipated.	Langdon Wind will utilize station service from the local electrical utility. MISO 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 so the maximum level of 50 dBA is not exceeded at occupied residences.
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	No impacts to previously identified cultural resources are anticipated.	Langdon Wind has completed a Class I Cultural Resources Inventory for the Project. Langdon Wind will conduct a Class II inventory 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 prior to construction.
Recreational Resources	Visual impacts will likely occur.	Visual impacts to recreational resources are likely and are limited to individuals using the resources. No other impacts are expected to recreational resources within the Project Area.
Land Based Economies	Assuming all turbines are 1.5 MW, a total of 84 acres of land will be impacted. Associated facilities will impact approximately 13 acres of land. Approximately 15 acres of land will be temporarily impacted for contractor staging and lay down areas. Approximately 91 percent of the site is agricultural land.	Langdon Wind will work with landowners to minimize impact to their land.

Table 15 (Continued)

Resource	Impact	Mitigation
Soils	Assuming all turbines are 1.5 MW, approximately 84 acres of land will be impacted for the turbines and access roads. Approximately 13 acres of land will be impacted by the associated facilities. Approximately 15 acres of land will be temporarily impacted for contractor staging and lay down areas. Impacts will be limited to land needed for the turbine foundations, access roads, and associated facilities.	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.
Geologic and Groundwater Resources	No impacts to groundwater resources are anticipated. It is possible that sand and gravel resources could be made unavailable.	Wind turbines will be sited to avoid known sand and gravel resources to the extent practicable.
Surface Water and Floodplain Resources	Access roads and turbines will be located and constructed in such a manner that no impacts are anticipated.	Impacts to surface waters will be avoided. Langdon Wind will implement BMPs to minimize erosion and sedimentation at the site.
Wetlands	Minor impacts are anticipated.	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.
Vegetation	Final project plans have not yet been made. Assuming all turbines are 1.5 MW, approximately 84 acres of land will be impacted for the turbines and access roads. Approximately 13 acres of vegetation will be impacted by the O&M facility and substation. Approximately 15 acres of land will be temporarily impacted for contractor staging and lay down areas.	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.	A variety of mitigative measures will be implemented, as discussed in Section 7.15.3. These include designing the facility to specifically minimize avian impacts. Pre-construction monitoring will be completed for avian species. 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 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 and Langdon Wind seeks a conditional use permit from the County.

Langdon Wind and their representatives have been working with key state and federal agencies including the Department of Commerce, the USFWS and the North Dakota Game and Fish Department 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 16. Permits dependent on the final site layout will be applied for after receiving PSC approval, but prior to construction.

**Table 16
 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	3	If constructing in wetlands within wetland easements or in WPAs, then compatibility analysis by USFWS is required.
	Right of Way Permit	3	If use is compatible, then a Right of Way Permit is required for permanent disturbance in wetlands within wetland easements.
	Special Use Permit	3	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. Further investigation is required to determine USACE jurisdiction of wetlands within the Project area.
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.
USDA NRCS	Form AD-1006	3	Required for each turbine located on soils in any of the categories except 'not prime farmland'.

Table 16 (Continued)

Agency	Type of Approval	Status*	Need
State of North Dakota			
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 1 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	2	Required for installation of septic system at 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	2	Permit required for construction of access roads from State Highways.
	Utility Permit/Risk Management Documents	2	Permit required for utility crossings on State Highway ROW.
Local Permits			
Cavalier County	Conditional Use Permit	2	Permit required for project construction.
	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
2 Will Apply Once Certificate is Received
3 Final Layout will Determine Whether Permit/Approval is needed

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 84 acres of land assuming all turbines are 1.5 MW. Approximately 10 acres of land will be acquired for the O&M facility and Project Substation, of which three acres will be occupied by the footprint of these facilities.

10.5 Alternatives to the Proposed Site

No alternatives were considered for 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, but include those 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 84 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 wind farm 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, in turn contributing 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

A Class I Survey, including a search of the SHPO's site and manuscript files, was conducted by Metcalf Archaeological Consultants, Inc. (Metcalf) for the Project Area (Appendix C). Based on the results of the Class I Survey, there have been seven archaeological and two architectural investigations in the area. No archaeological sites and only one prehistoric isolated find were on file for the Project Area. Among the 150 historic sites identified in the region, most are architectural (businesses and residences) in the city of Langdon. Additionally, there are five site leads for abandoned post offices, of which most lack maps or other more precise locational data. Currently, no impacts are anticipated to known cultural resources in the site. 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

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 and bat collisions with facility turbines or meteorological towers. The site will be designed to minimize impacts to those species.

10.11 Agency Comments

Agencies were contacted to comment on the Project. The following summaries of comments received apply to the proposed Langdon Wind Energy Center.

10.11.1 North Dakota Game and Fish Department

The NDGFD stated that their primary concern within the Project area is the disturbance of native Prairie (Appendix D). Langdon Wind will conduct pre-construction avian monitoring per the protocol described in Appendix E. Langdon Wind will survey the site for biological resources such as native prairie and will address potential impacts during micro-siting as required.

10.11.2 U.S. Fish and Wildlife Service

Concerns of the USFWS focus on migratory birds, wetlands, native grasslands, woodland resources, and threatened and endangered species. Both perpetual wetland easement tracts and Waterfowl Production Areas (WPAs) are recorded within the Project Area 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. Langdon Wind will conduct pre-construction biological monitoring per the protocol presented in Appendix E.

Additionally, Cameron Sillers, council for the Cavalier County Water Resource Board (WRB), responded to the USFWS with a letter stating that while the WRB has 18 acres of wetland easements within Sections 29 and 32 of Township 159 North, Range 59 West, Langdon Wind may utilize this particular land for the Project as long as activities do not adversely affect any of the wetlands.

10.11.3 North Dakota SHPO

The SHPO recommend that a Class I cultural resources inventory be completed for areas that may be impacted by the Project. Based on the results of the Class I Survey and review of SHPO records no archaeological sites and only a single archaeological isolated find was on file for the Project area (Table 12). Based on the results of a phone conversation between Metcalf and SHPO on February 21, 2007, SHPO stated that performing 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 would suffice. Protocol for the Class II Pedestrian Survey is included in Appendix E.

10.11.4 North Dakota Geological Survey

Langdon Wind sent a letter to the North Dakota Geological Survey dated December 21, 2006 (Appendix D). No response has been received.

10.11.5 North Dakota Parks and Recreation Department

The Natural Heritage Inventory listed one rare plant (*Carex Backii*) known to occur within the Project Area. This plant is a wetland species and will be avoided to the extent practicable along with the wetland. The North Dakota Parks and Recreation Department (NDPRD) stated 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 (Appendix D).

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 D).

10.11.7 North Dakota Department of Commerce

Langdon Wind sent a letter to the North Dakota Department of Commerce dated December 21, 2006 (Appendix D). 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 D.

10.11.9 North Dakota Department of Transportation

The North Dakota DOT sent a response letter 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 the utility 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. Additionally, a 2007 Spring Load Restriction map was provided for Langdon Wind's information and is included in Appendix D.

10.11.10 North Dakota State Water Commission

The State Water Commission stated that Sovereign Lands and/or drain permits may be required from the Commission if the Project requires disturbance of wetlands located within the Project Area. No floodplain was identified in the Project site (Appendix D).

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. They stated that the primary purpose of the FPPA is to reduce the conversion of highly productive farmland to non-agricultural uses. The Project may result in the conversion of such farmland, depending on the placement and amount of land disturbed from wind turbines and access roads. Once the final layout of the Project has been determined, Form AD-1006 will be required for each site that will be developed on soils in any of the categories except 'not prime farmland'. A copy of the response letter and associated prime farmland maps provided by NRCS are included in Appendix D.

10.11.12 North Dakota State Land Department

Langdon Wind sent a letter to the North Dakota State Land Department dated December 21, 2006 (Appendix D). No response has been received.

10.11.13 U.S. Army Corps of Engineers

A letter dated February 20, 2007 was sent to USACE requesting preliminary jurisdictional determination of waters within the Project area. Further investigation will likely be required to determine the presence of USACE jurisdictional waters within the Project area. If further investigation determines that wetlands within the Project area are jurisdictional, formal delineation would be required by USACE. Communication with USACE will continue as investigation into the jurisdiction of wetlands commences.

10.11.14 Aeronautics Commission

Langdon Wind sent a letter to the Aeronautics Commission dated December 21, 2006 (Appendix D). No response has been received.

10.11.15 North Dakota Department of Agriculture

Langdon Wind sent a letter to the North Dakota Department of Agriculture dated December 21, 2006 (Appendix D). No response has been received.

10.11.16 North Dakota Department of Human Services

Langdon Wind sent a letter to the North Dakota Department of Human Services dated December 21, 2006 (Appendix D). No response has been received.

10.11.17 North Dakota Department of Labor

Langdon Wind sent a letter to the North Dakota Department of Labor dated December 21, 2006 (Appendix D). No response has been received.

10.11.18 North Dakota Department of Career and Technical Education

Langdon Wind sent a letter to the North Dakota Department of Career and Technical Education dated December 21, 2006 (Appendix D). No response has been received.

10.11.19 North Dakota Governor

Langdon Wind sent a letter to North Dakota Governor John Hoeven dated December 21, 2006 (Appendix D). No response has been received.

10.11.20 North Dakota Indian Affairs

Langdon Wind sent a letter to the North Dakota Indian Affairs dated December 21, 2006 (Appendix D). No response has been received.

10.11.21 North Dakota Office of Management and Budget

Langdon Wind sent a letter to the North Dakota Office of Management and Budget dated December 21, 2006 (Appendix D). No response has been received.

10.11.22 North Dakota Soil Conservation Committee

Langdon Wind sent a letter to the North Dakota Soil Conservation Committee dated December 21, 2006 (Appendix D). No response has been received.

10.11.23 Cavalier County Soil Conservation District

Langdon Wind sent a letter to Cavalier County Soil Conservation District dated December 21, 2006 (Appendix D). No response has been received.

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
KENNETH STEIN Principal environmental Specialist FPL Energy	J.D University of Oregon, Environmental Law B.S University of Michigan, Environmental Science
DICK RAUSCH Construction Project Manager	Provided input on route from a "constructability" perspective
LARRY LEVIN Construction Project Leader	Representing FPL Energy on landowner discussions and selection of corridor.
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	Representing FPL Energy on landowner discussions and selection of corridor.
BRIAN BJELLA Attorney for Applicants Fleck, Mather & Strutz,	J.D. degree, University of North Dakota Applicant's counsel.
SCOTT SCOVILLE 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
TRACEY MARTORANO Project Manager Tetra Tech, 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.

NAME PROJECT ROLE	EDUCATION AND PROFESSIONAL EXPERIENCE
JEFFREY RICE Environmental Group Manager Tetra Tech, Inc.	<p>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. He has served in an oversight capacity for landfill monitoring, petroleum hydrocarbon release, hazardous waste and other environmental regulatory consulting projects. Mr. Rice has facilitated numerous training classes related to EPA, OSHA, and DOT training courses.</p> <p>Association of Ground Water Scientists and Engineers B.S., Land Resources (Soil Science), Montana State University, 1982</p>
HAVEN WESTERMAN Environmental Scientist Tetra Tech, Inc.	<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>
JENNY ERICKSON Environmental Scientist/GIS Analyst Tetra Tech, Inc.	<p>Ms. Erickson has over four years experience in federal and state regulatory compliance projects. She has prepared stormwater pollution prevention plans; spill prevention, control and countermeasure plans; and source water delineation and assessment reports of Montana public water supplies. Ms. Erickson has experience in geographic information system mapping and is adept at using field equipment, including pH meters, conductivity meters, oxidation-reduction potential composites, water level indicators, and dual interface probes.</p> <p>American Water Resources Association Montana Geological Society Montana Wilderness Association B.A., Environmental Studies, Montana State University-Billings, 2003</p>
ADDISON MOHLER Natural Resources Specialist Tetra Tech, Inc.	<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>

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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 Certificate	The capability of a system, circuit, or device for storing electronic charge
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
CRP	North Dakota Public Service Commission
Corridor Certificate	Conservation Reserve Program
dB	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	Florida Power and Light 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
MAPP	Mid-Continent Area Power Pool

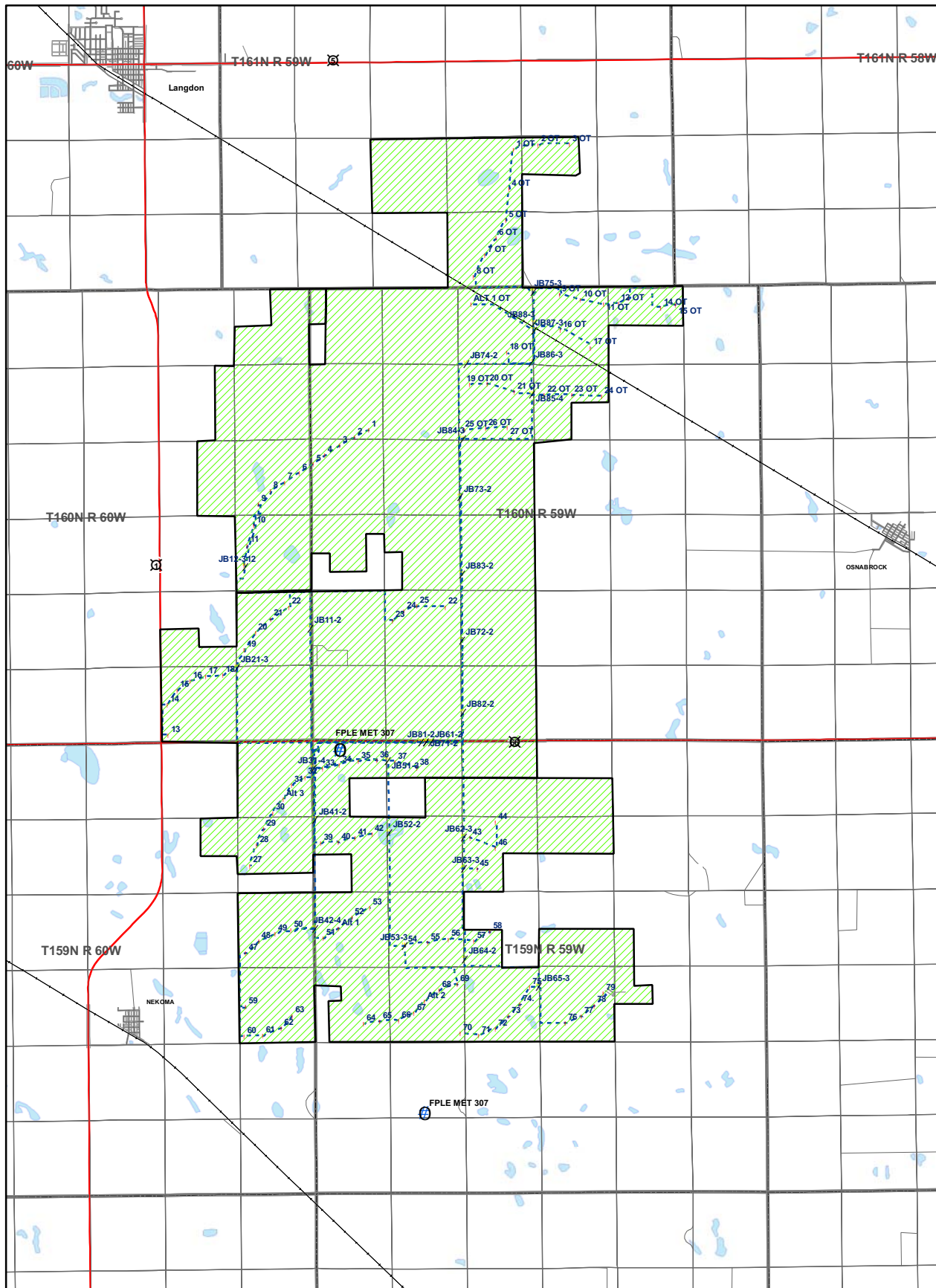
Micrositing	The process in which the wind resources, potential environmentally sensitive areas, soil conditions, and other site factors, as identified by local, state and federal agencies, are evaluated to locate wind turbines and associated facilities.
MISO	Midwest Independent System Operator
mph	miles 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
Project, the	Rugby Wind Farm
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
SCADA	Supervisory Control and Data Acquisitions (communications technology)
SHPO	North Dakota State Historic Preservation Office
Step-up Transformer Substation	A transformer that increases voltage
SWPPP	A subsidiary station in which electric current is transformed
Torque	Storm Water Pollution Prevention Plan
Transformer	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
Transmission	An electrical device by which alternating current of one voltage is changed to another voltage
USACE	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
USFWS	US Army Corps of Engineers
UT	US Fish and Wildlife Service
	Unincorporated Township

WMD
WPAs
Yaw

Wetland Management District
Waterfowl Protection Area

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



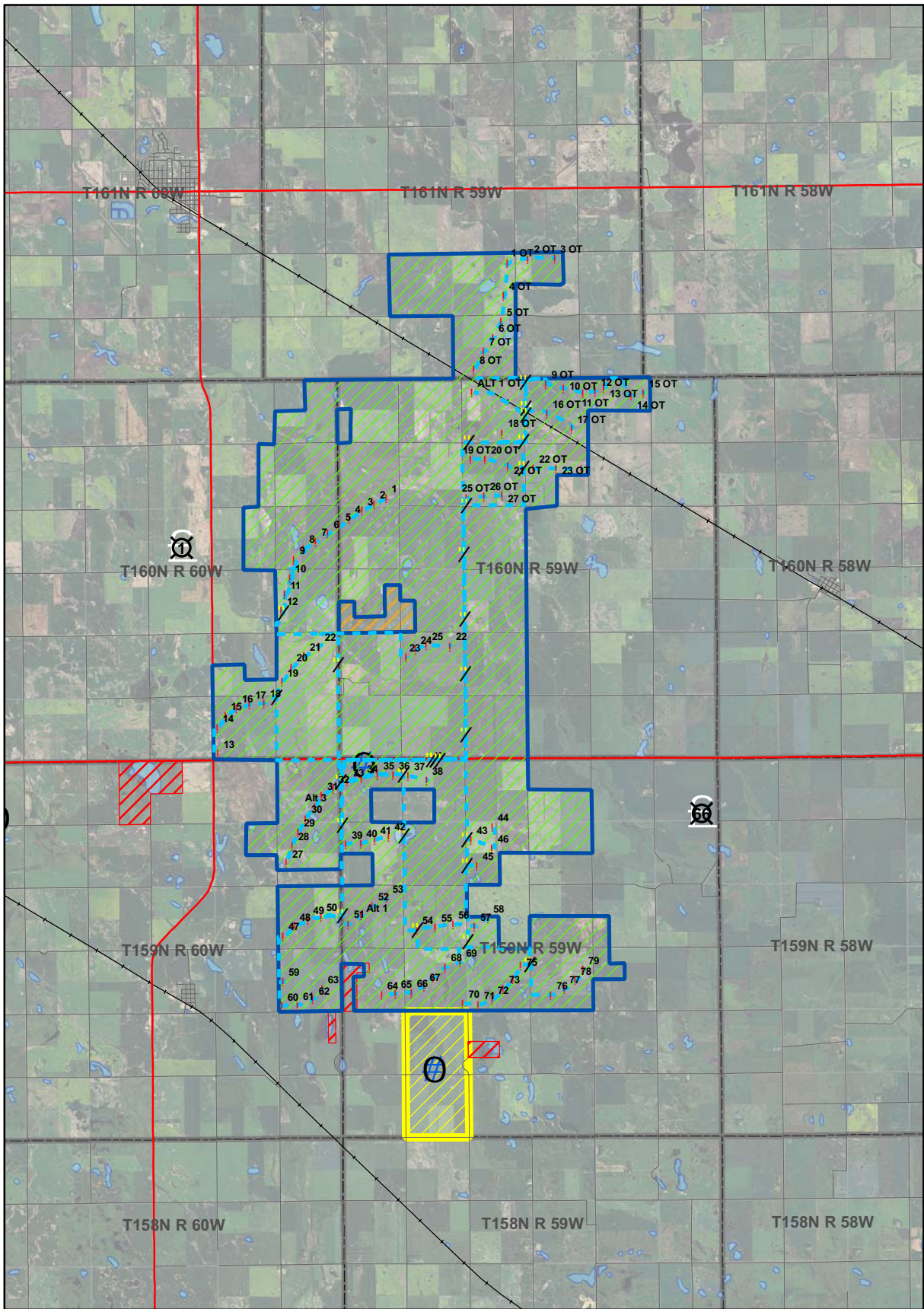
Legend

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

TETRA TECH EC, INC.

0 0.5 1 Miles
1:120,000

Figure 1. Project Vicinity
Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota



Legend

- Proposed Turbine Locations
- MET (Meteorological Tower)
- Collection Lines
- Wetland Easement
- WPAs
- USFWS Easements
- PLSS Townships
- PLSS Sections
- Ponds/Lakes
- Railroads
- Highways
- County Roads

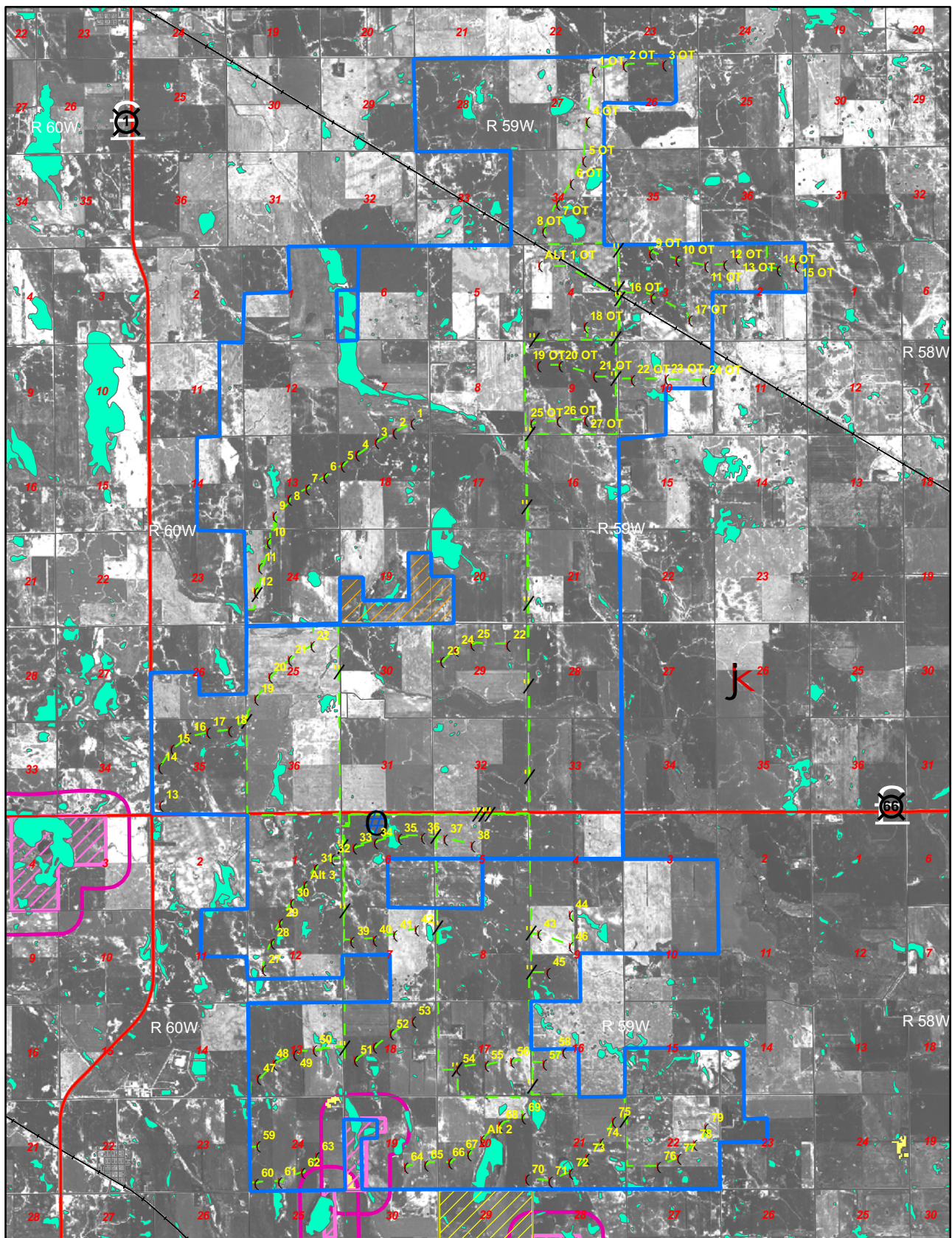


TETRATECH EC, INC.

0 1 Miles

1:120,000

**Figure 2. Project Area Map
Langdon Wind Energy Center
Langdon Wind, LLC
Cavlier County, North Dakota**



Legend

- Proposed Turbine Locations
- MET (Meteorological Tower)
- Collection Lines
- Collection Junction Box
- Highways
- Railroads
- Approximate Project Area
- Public Land Survey System (PLSS) Townships
- PLSS Sections

Exclusion Areas

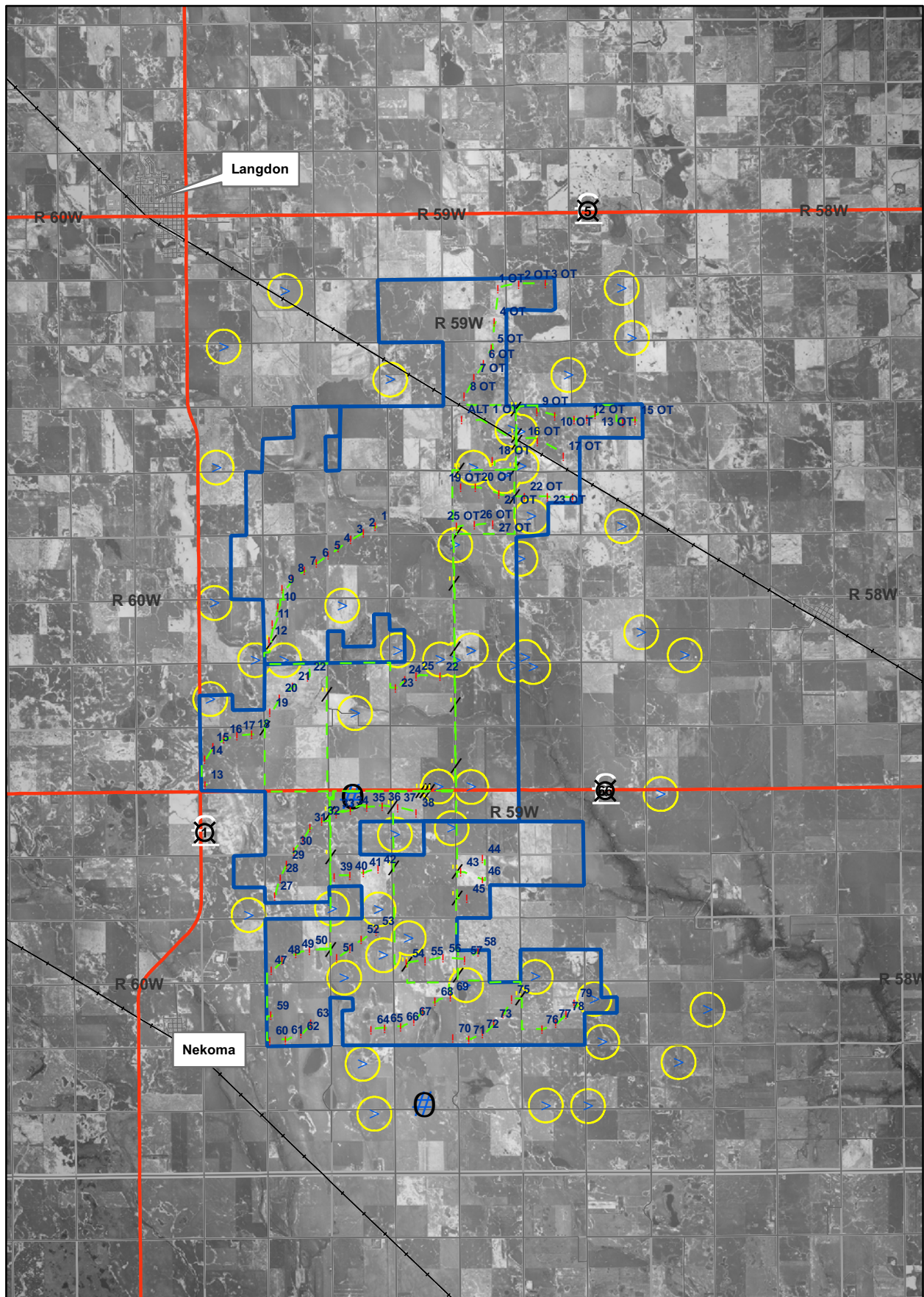
- Wetland Easement
- USFWS Wetland Easements
- Waterfowl Production Area (WPA)
- .25 Mile WPA Buffer

Avoidance Areas

- Wetland Areas
- Woodland Areas
- Sensitive Plant Species: *Carex backii*



Figure 3. Exclusion and Avoidance Areas.
Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota



Legend

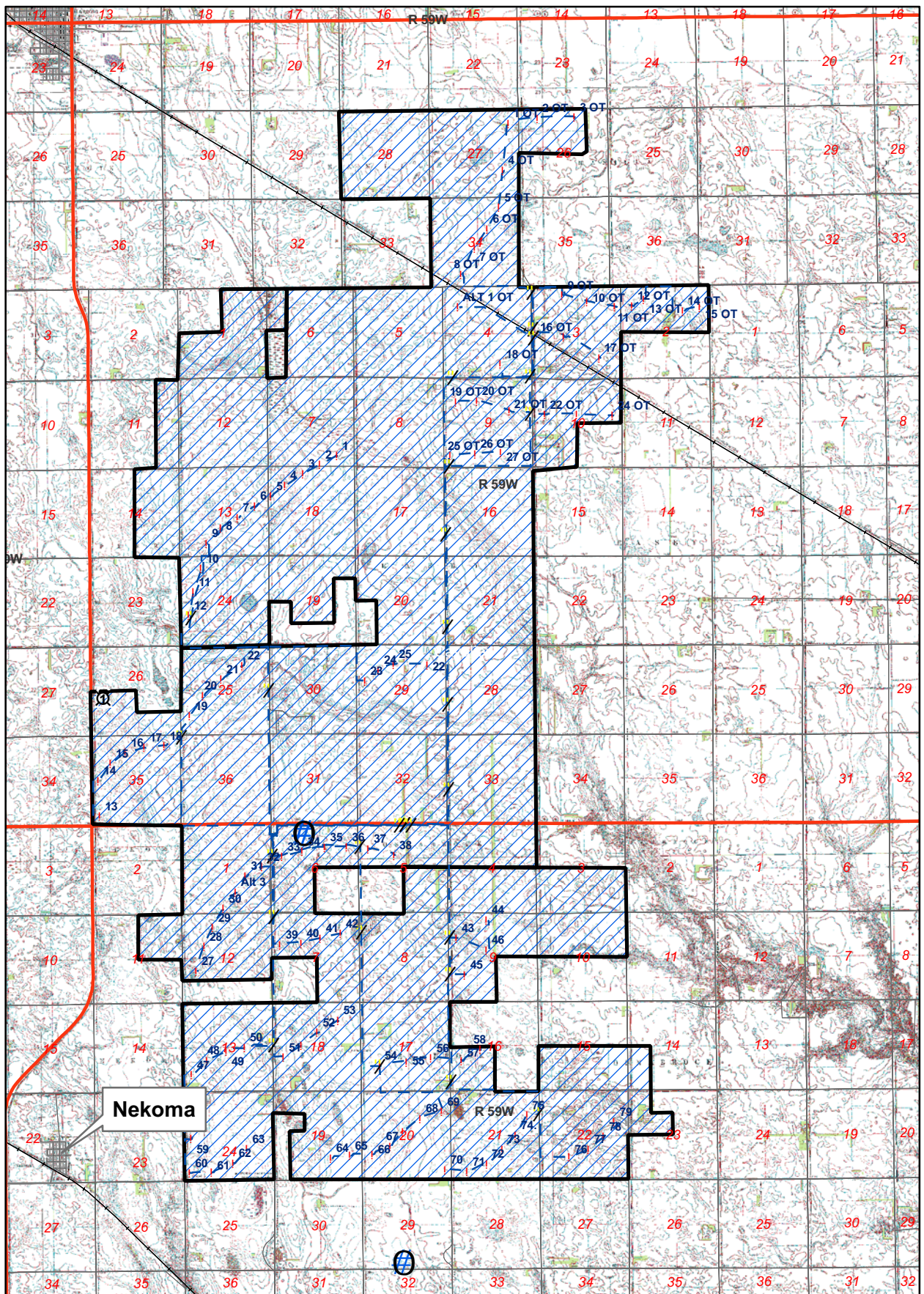
- Proposed Turbine Locations
- MET (Meteorological Tower)
- Collection Lines
- Collection Junction Box
- Highways
- Railroads
- Approximate Project Area
- Public Land Survey System (PLSS) Townships
- PLSS Sections
- Residences
- 1,400 Ft. Residential Buffer












0 0.5 1 2 Miles

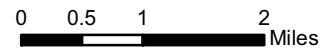
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**Figure 4. Project Location Map (Aerial)
Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota**



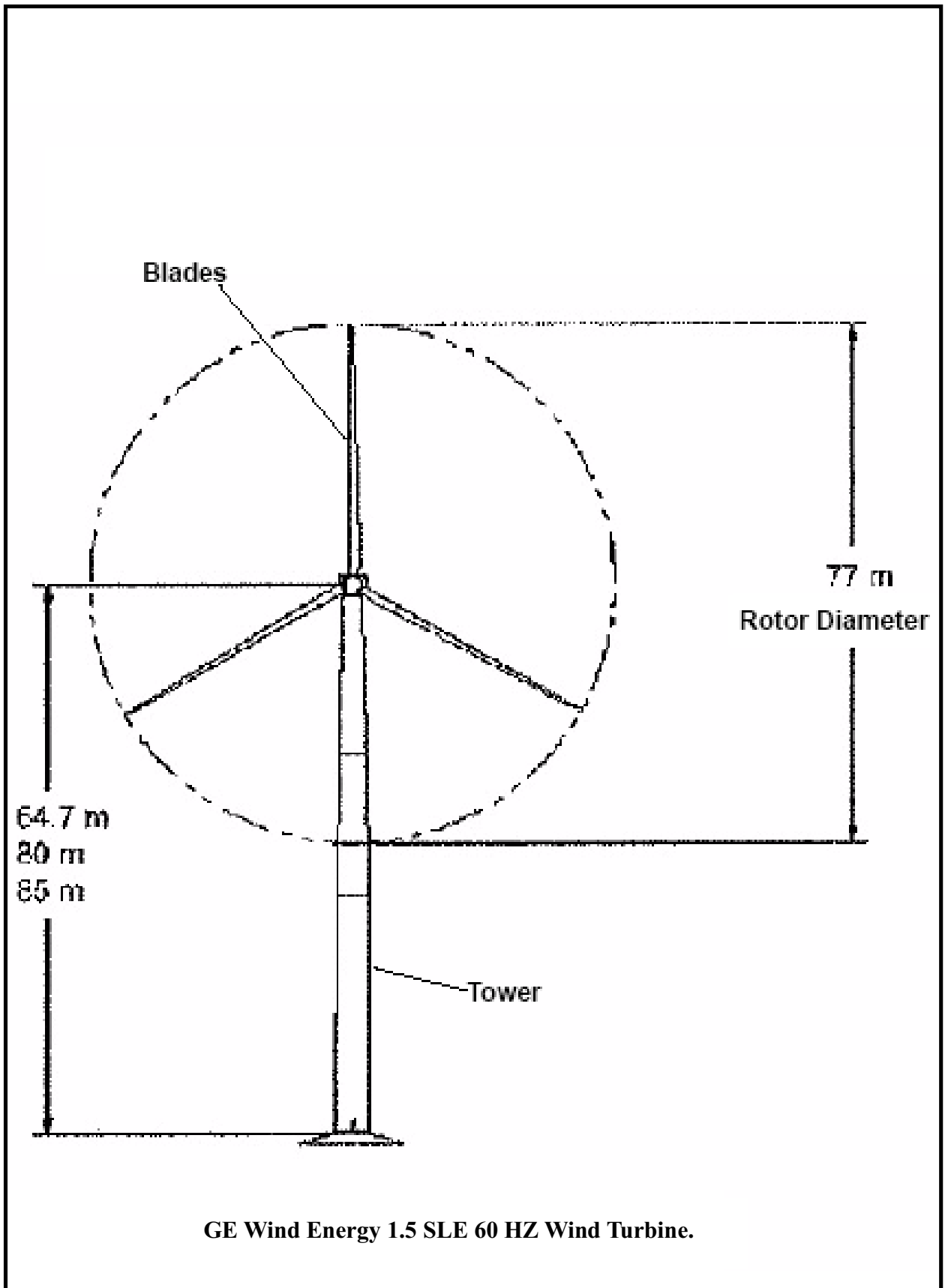
Legend

-  Proposed Turbine Locations
-  MET (Meteorological Tower)
-  Collection Lines
-  Collection Junction Box
-  Highways
-  Railroads
-  Approximate Project Area
-  Public Land Survey System (PLSS) Townships
-  PLSS Sections



1:100,000

**Figure 5. Project Location Map (Topograph)
Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota**



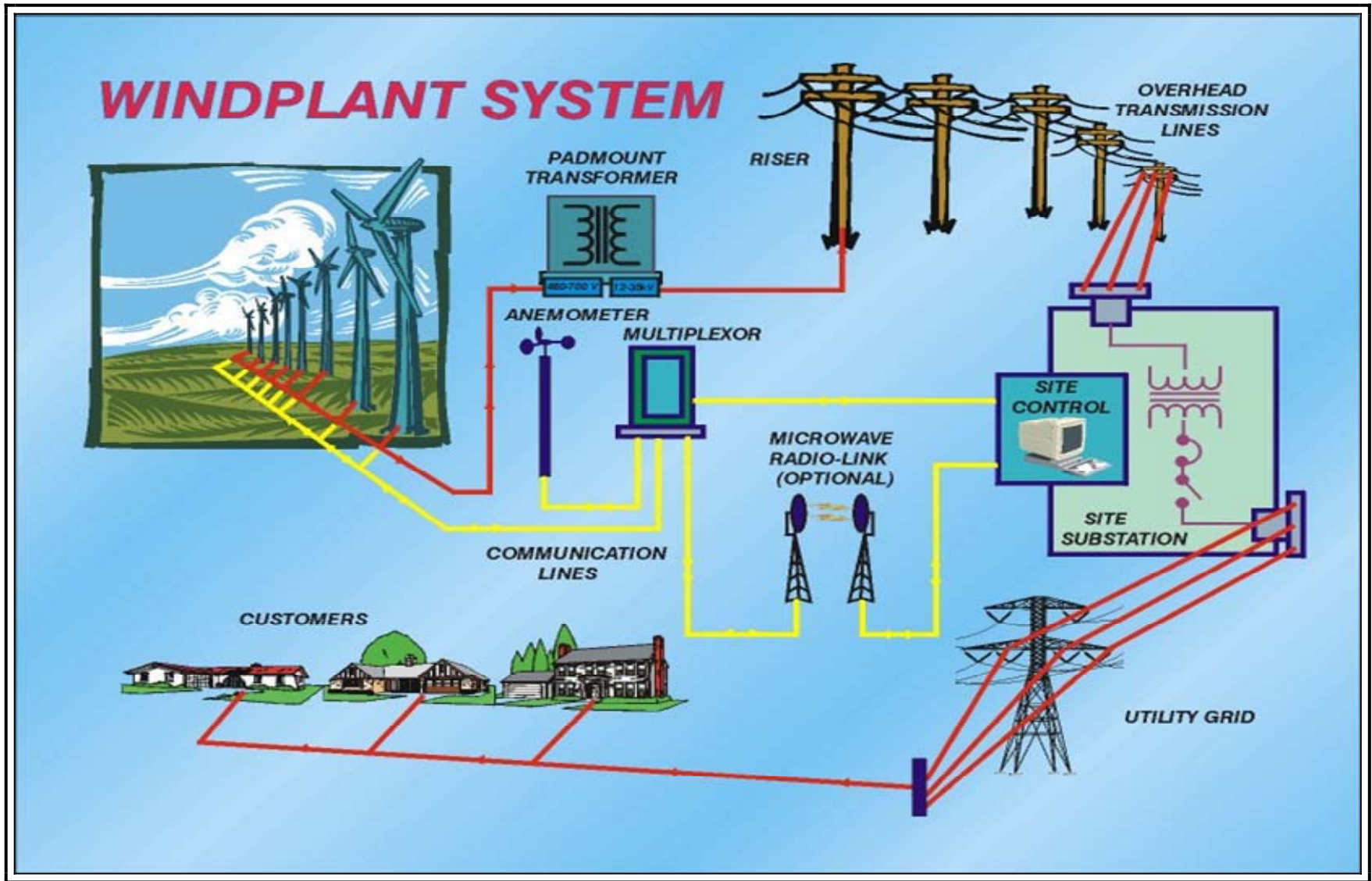
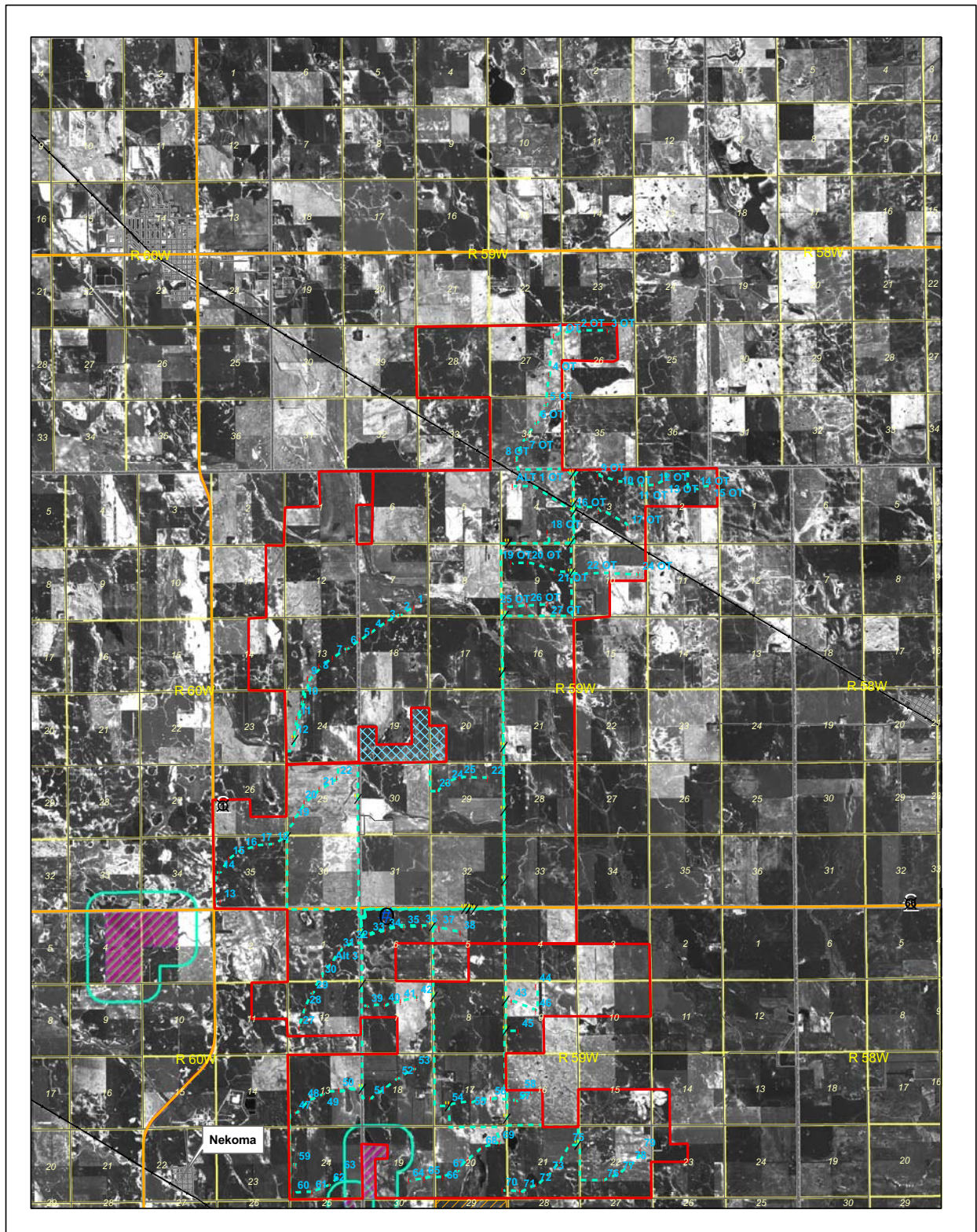















Figure 7. Path of Energy Diagram
 Langdon Wind Energy Center
 Langdon Wind, LLC
 Cavalier County, North Dakota



**Figure 8. Typical Wind Energy Center Layout
Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota**



Legend

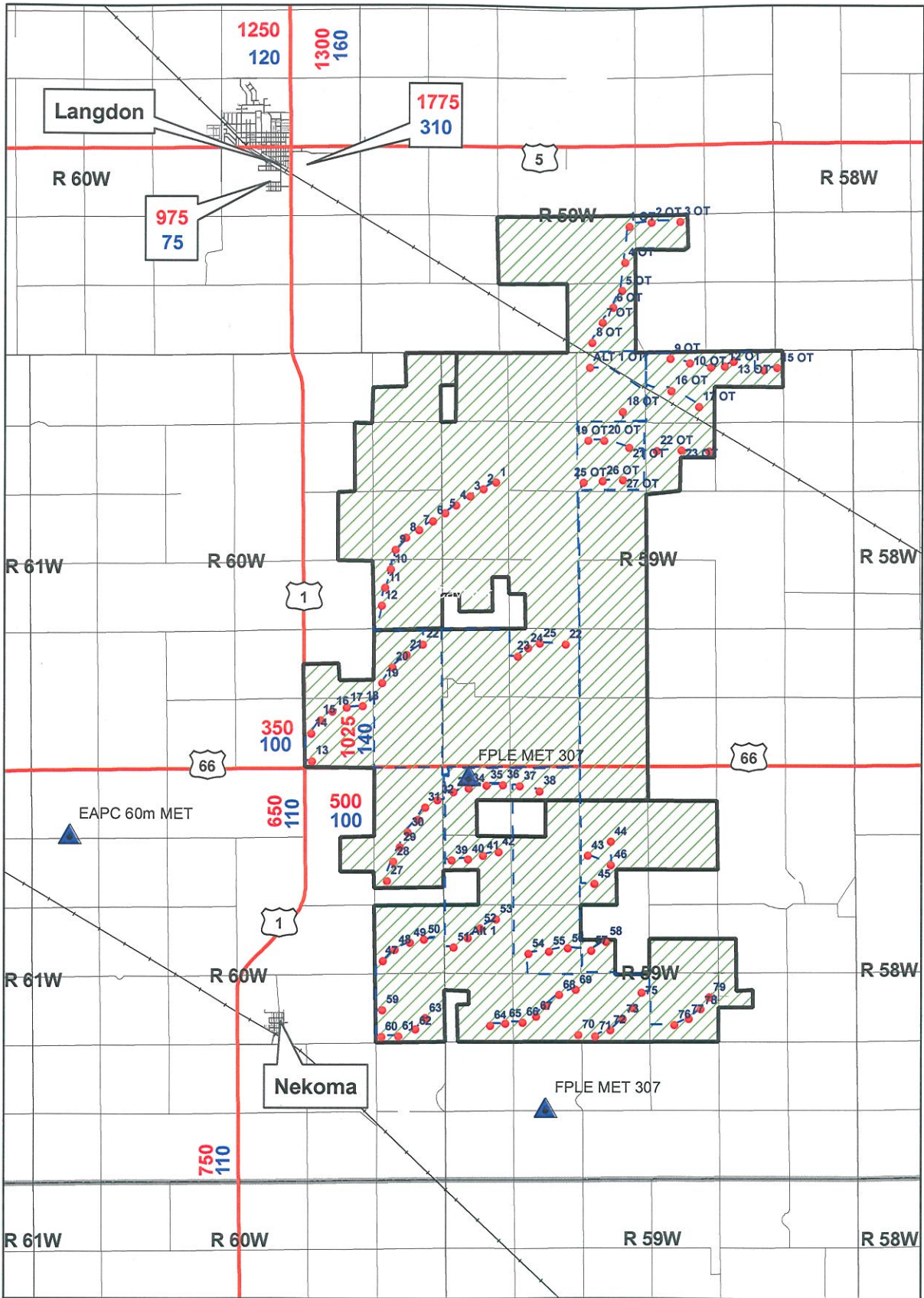
-  Proposed Turbine Locations
-  MET (Meteorological Tower)
-  Collection Lines
-  Collection Junction Box
-  Highways
-  RailRoads
-  Public Land Survey System (PLSS) Sections
-  PLSS Townships
-  Approximate Project Area
-  USFWS Wetland Easements
-  Wetland Easements
-  USFWS Waterfowl Production Areas (WPA)
-  1/4 Mile WPA Buffer



0 0.5 1 2 Miles

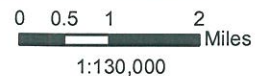
1:85,000

**Figure 9. Public Lands and Easements
Langdon Wind Energy Center
Langdon, LLC
Cavalier County, North Dakota**



Legend

- Proposed Turbine Locations
- ▲ MET (Meteorological Tower)
- - - Collection Lines
- 123 Average Daily Traffic (ADT)
- 123 Commercial Truck Traffic
- Highways
- Railroads
- County Roads
- ▨ Approximate Project Area
- ▭ Public Land Survey System (PLSS) Townships
- ▭ PLSS Sections



**Figure 10. Average Daily Traffic Map
Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota**

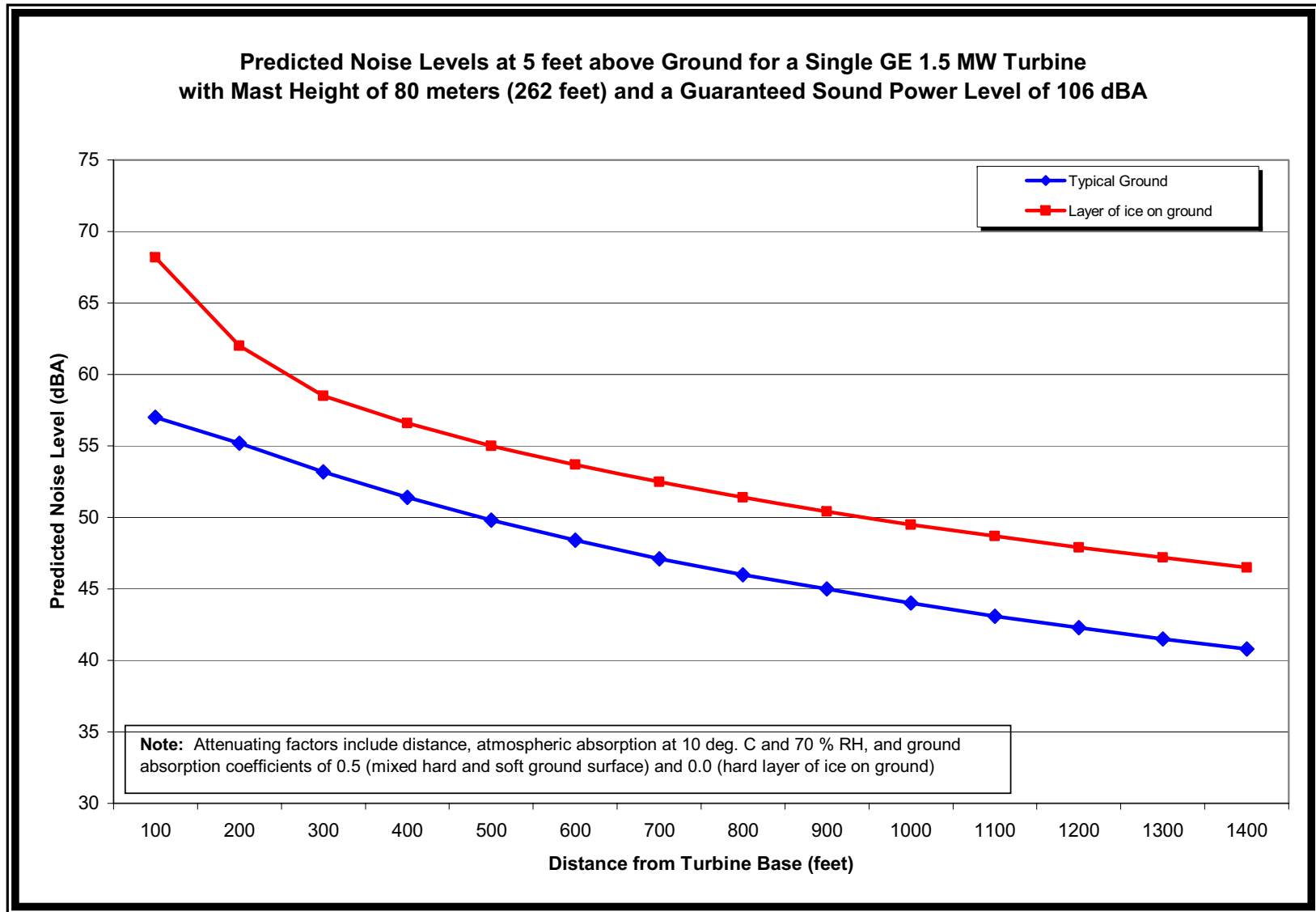
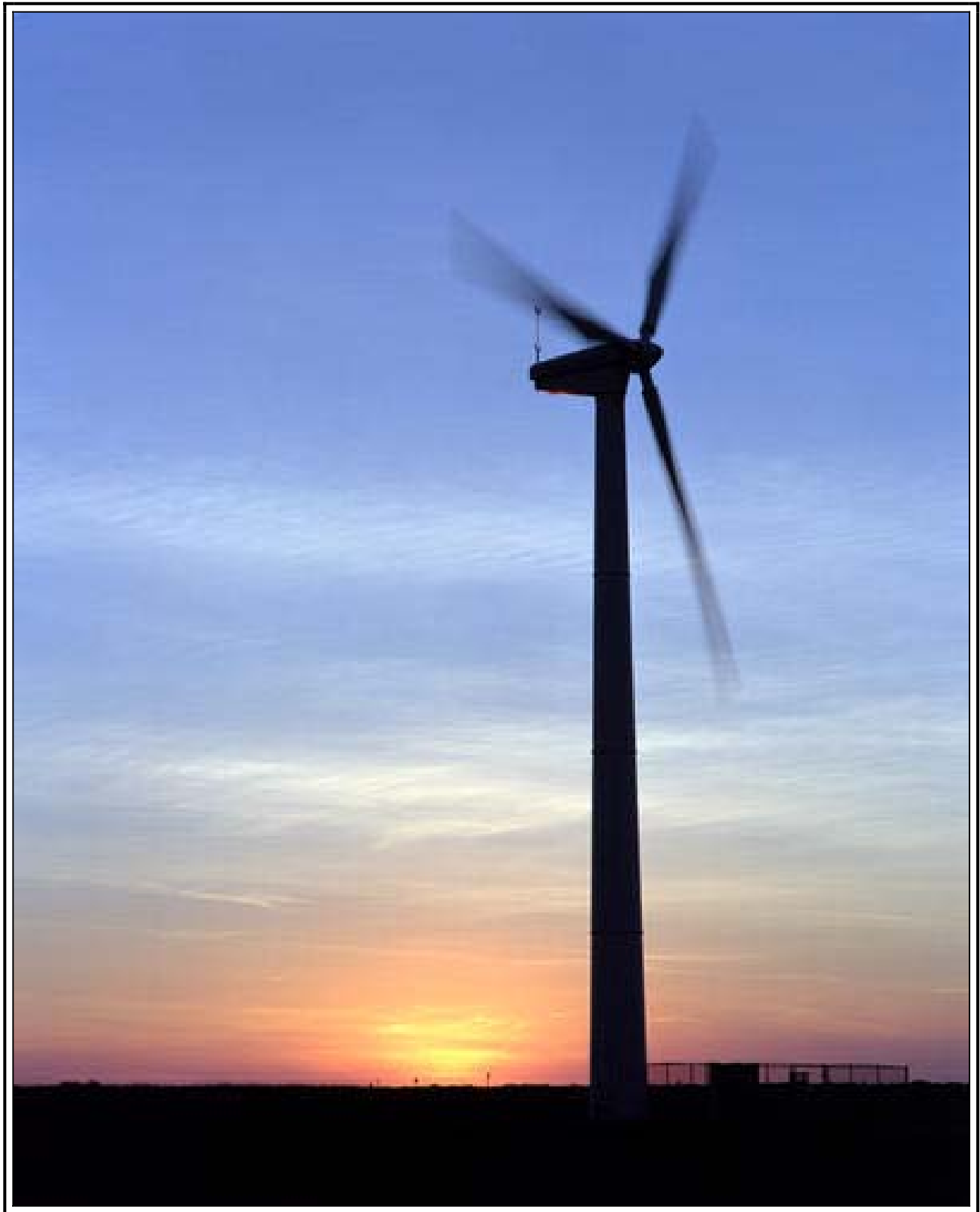


Figure 11. Predicted Noise Levels for 1.5 MW Wind Turbines (dBA)
Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota

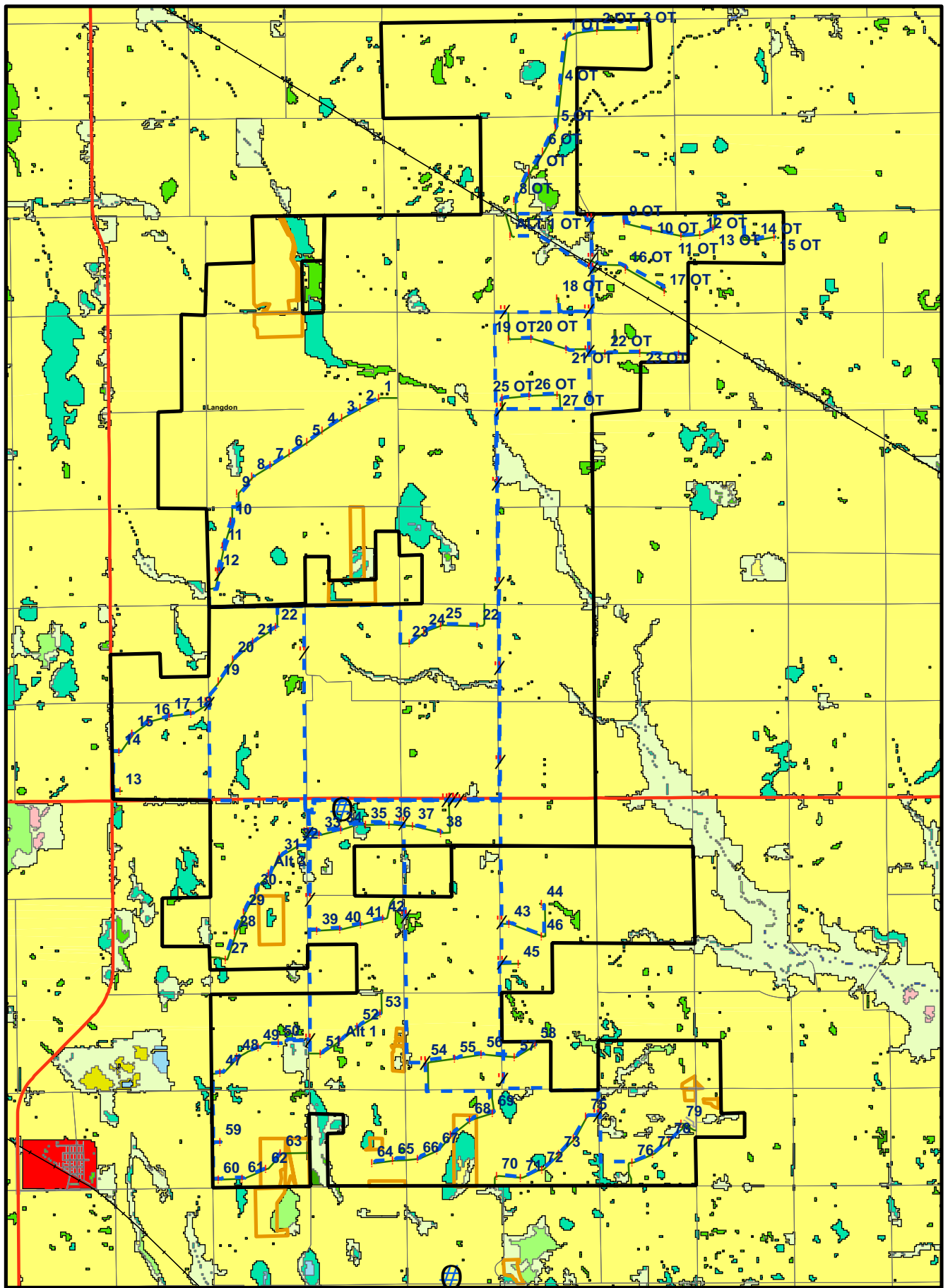


**Figure 12. Photo of Typical Landscape
Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota**



TETRA TECH EC, INC.

**Figure 13. Photo Simulation
Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota**

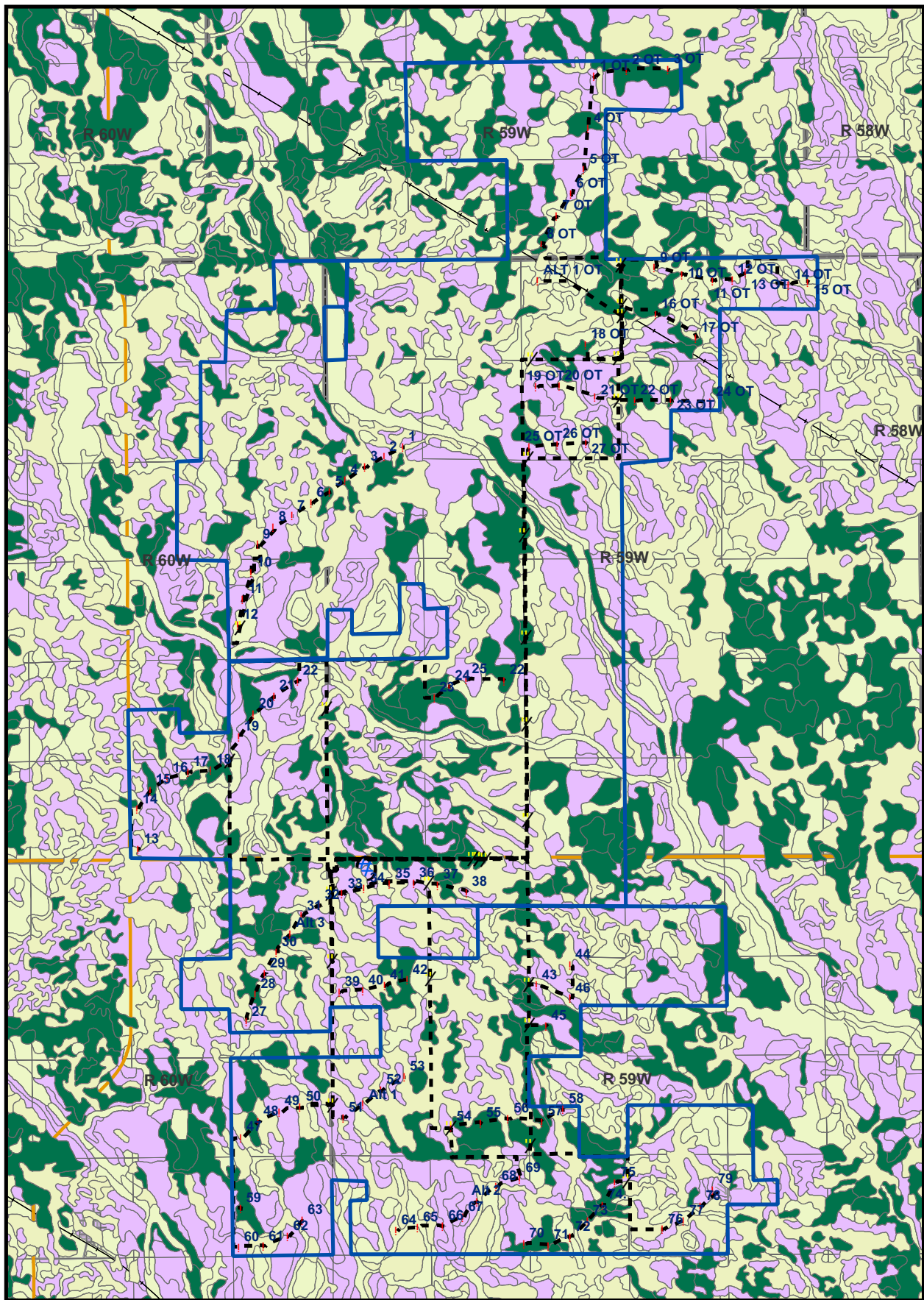


Legend

- Proposed Turbine Locations
- MET (Meteorological Tower)
- Collection Lines
- Collection Junction Box
- Approximate Project Area
- Cropland
- Planted Cover
- Grassland
- Urban
- Forest
- CRP Land
- Semipermanent Wetland
- Seasonal Wetland
- Temp Wetland
- River
- Lake



**Figure 14. Land Cover Map
Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota**



Legend

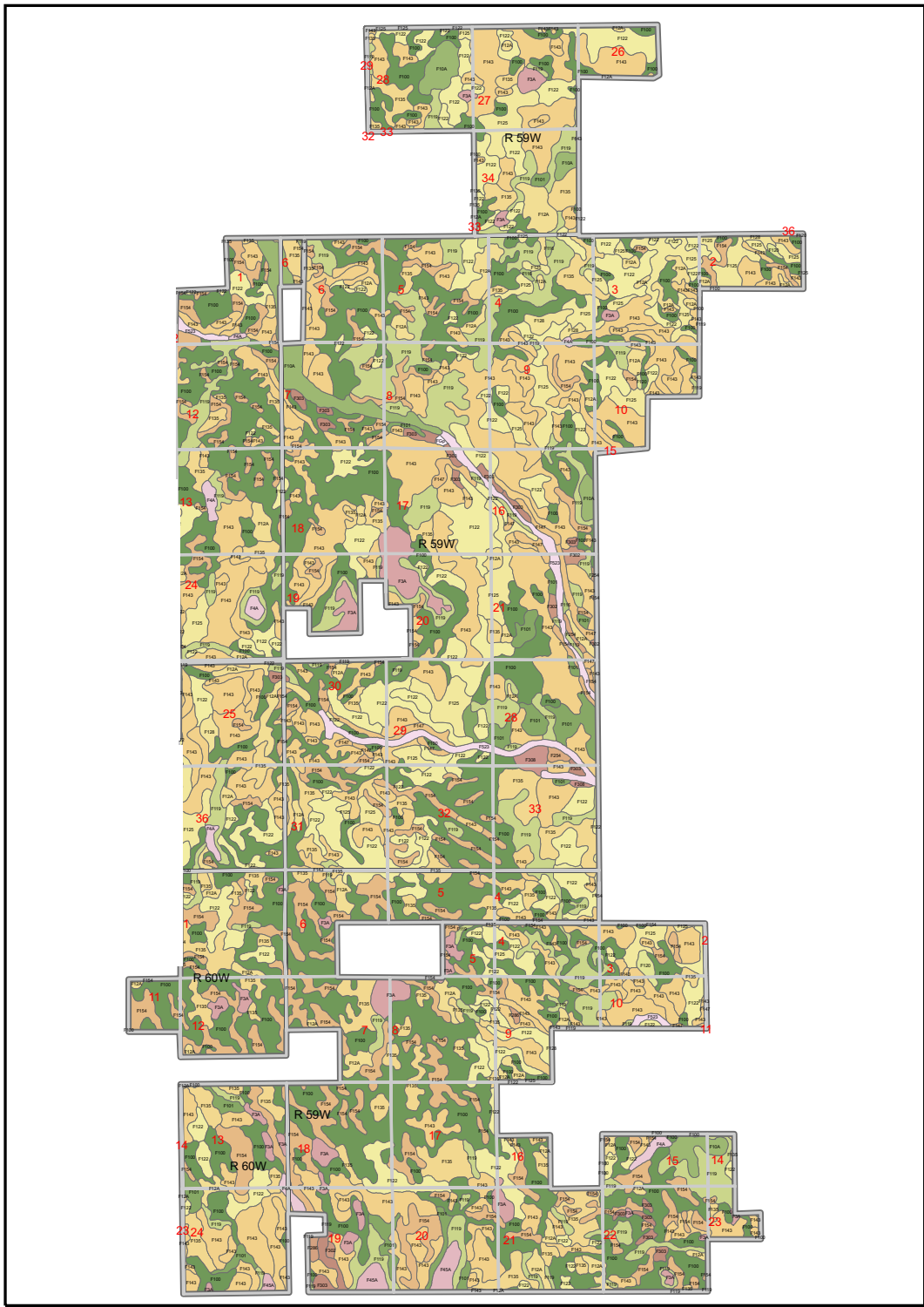
- Proposed Turbine Locations
- MET (Meteorological Tower)
- Collection Lines
- Collection Junction Box
- Approximate Project Area

- Public Land Survey System (PLSS) Townships
- PLSS Sections
- Farmland of Statewide Importance
- Prime Farmland
- Prime Farmland if Drained
- Not Prime Farmland



TETRATTECH, INC. 0 0.4 0.8 1.6 Miles
1:90,000

Figure 15. Prime Farmland Soil Distribution Map.
Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota



Legend
Map Unit Symbol*

- F100A Hamerly-Tonka complex, 0-3 percent slopes
- F101A Hamerly-Wyard loams, 0-3 percent slopes
- F10A Roliss silt loam, 0-1 percent slopes
- F116A Esby clay loam, 0-1 percent slopes
- F119A Vallery-Hamerly loams, saline, 0-3 percent slopes
- F120A Vallery-saline-Manfred complex, 0-1 percent slopes
- F122A Svea-Cresbard loams, 0-3 percent slopes
- F122B Barnes-Cresbard loams, 0-3 percent slopes
- F125A Cavour-Cresbard loams, 0-3 percent slopes
- F128A Ferney-Cavour loams, 0-3 percent slopes
- F12A Vallery-saline-Parnell complex, 0-1 percent slopes
- F135A Hamerly-Cresbard loams, 0-3 percent slopes
- F143A Barnes-Svea loams, 0-3 percent slopes
- F143B Barnes-Svea loams, 3-6 percent slopes
- F143C Barnes-Buse-Langhei loams, 6-9 percent slopes
- F143D Barnes-Buse-Langhei loams, 9-15 percent slopes

- F144B Barnes-Buse loams, 3-6 percent slopes
- F147C Buse-Barnes-Darnen loams, 3-9 percent slopes
- F147D Buse-Barnes-Darnen loams, 6-15 percent slopes
- F147F Buse-Barnes-Darnen loams, 9-35 percent slopes
- F154B Svea-Buse loams, 3-6 percent slopes
- F254A Divide loam, shaly, 0-2 percent slopes
- F256A Divide loam, shaly, loamy substratum, 0-2 percent slopes
- F270A Arvilla sandy loam, 0-2 percent slopes
- F286C Fordville-Sioux complex, 2-9 percent slopes
- F302A Vang loam, 0-2 percent slopes
- F303B Vang-Coe complex, 2-6 percent slopes
- F303C Vang-Coe complex, 6-9 percent slopes
- F308A Brantford loam, 0-2 percent slopes
- F311B Walsh-Vang loams, 2-6 percent slopes
- F3A Parnell silty clay loam, 0-1 percent slopes
- F45A Colvin silty clay loam, 0-1 percent slopes

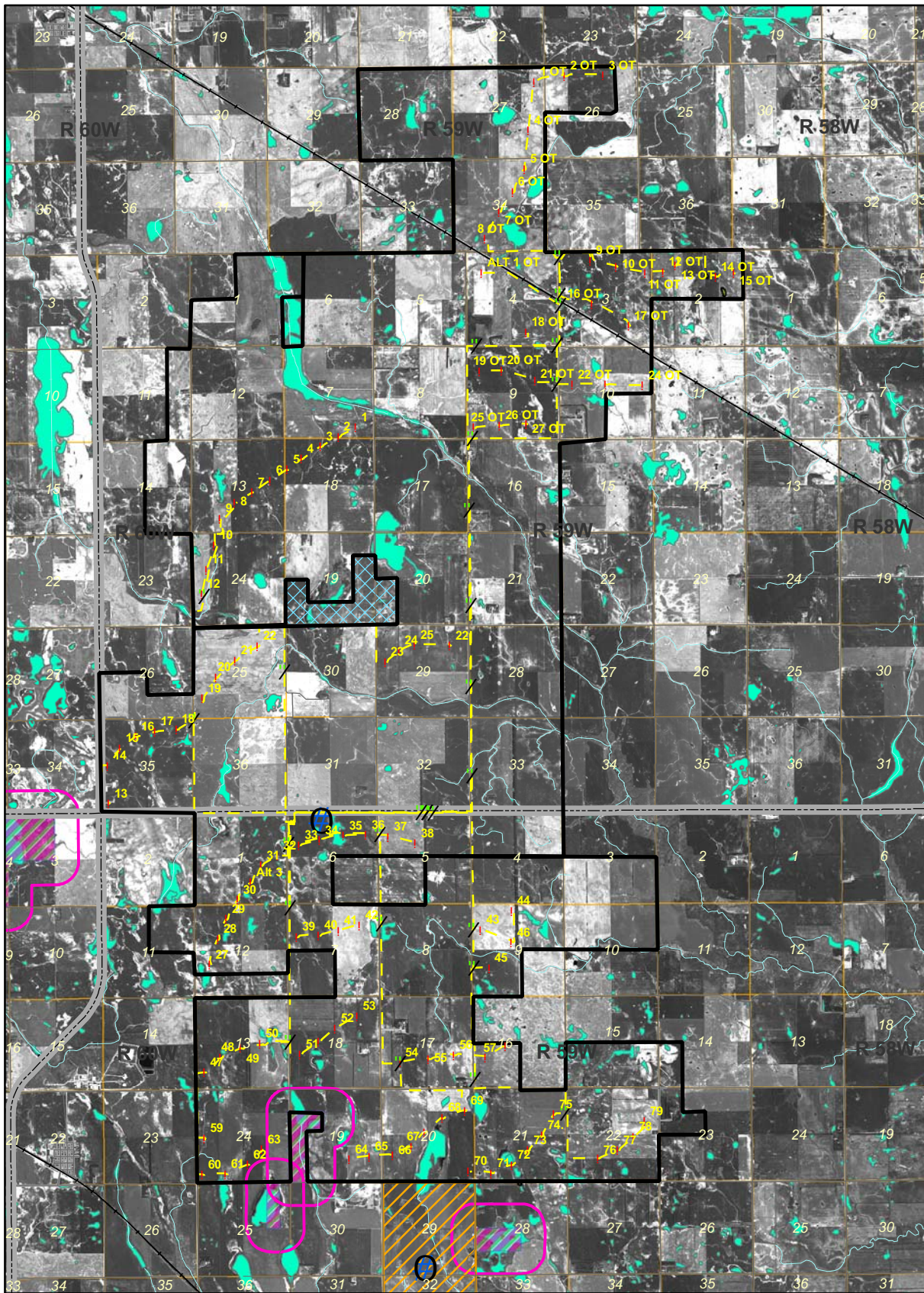
- F4A Southam silty clay loam, 0-1 percent slopes
- F523A Lowe loam, channeled, 0-2 percent slopes
- F563B Fairdale loam, channeled, 0-2 percent slopes
- F592F Kloten-Walsh-Edgeley loams, 6-35 percent slopes
- FGp Pits, gravel and sand

- Public Land Survey System (PLSS) Townships
- PLSS Sections
- Approximate Project Area



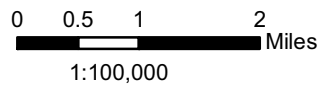
**Figure 16. State Soils Association Map
Langdon Wind Energy Center
Langdon Wind, LLC
Cavalier County, North Dakota**

*Natural Resources Conservation Service (NRCS) Soil Classification
@http://soildatamart.nrcs.usda.gov



Legend

- Proposed Turbine Locations
- MET (Meteorological Tower)
- Collection Lines
- Collection Junction Box
- Approximate Project Area
- Highways
- Intermittent Stream
- Perennial Stream
- Public Land Survey System (PLSS) Sections
- USFWS Wetland Easements
- Wetland Easements
- USFWS Waterfowl Production Area (WPA)
- 1/4 Mile WPA Buffer
- Freshwater Forested/Shrub Wetland
- Freshwater Emergent Wetland



**Figure 17. National Wetlands Inventory and Surface Waters Map
Langdon Wind Energy Center
Langdon, LLC
Cavalier County, North Dakota**

APPENDIX A

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 \$887 million or \$2.45* per share in 2004, compared with \$890 million or \$2.50* 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 \$890 million or \$2.46* per share in 2004, compared with \$871 million or \$2.45* 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 Jeanne, 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 \$2.50 to \$2.60 (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 \$1.2 billion, and invested more than \$1.9 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 \$700 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 — barring 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 \$17 billion in capital investments. Since 1999, base rates have been reduced twice, providing savings to customers totaling nearly \$4 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 \$48 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 \$250,000 to the Loggerhead Marinelifelife 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 \$1.4 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 \$138 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 \$3.5 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 \$615,000. In 2004, FPL Group’s annual United Way campaigns raised more than \$2.3 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 event 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 Juno

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
- Kids 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 Jeanne 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 \$250,000 matching grant to the American Red Cross. FPL employees and customers almost doubled that target by donating \$490,000. FPL provided a matching gift of \$277,000 to the Florida Hurricane Relief

Fund, to which FPL customers also donated \$400,000. Combined, FPL helped raise nearly \$1.4 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 \$2 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 \$520 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 \$4 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.

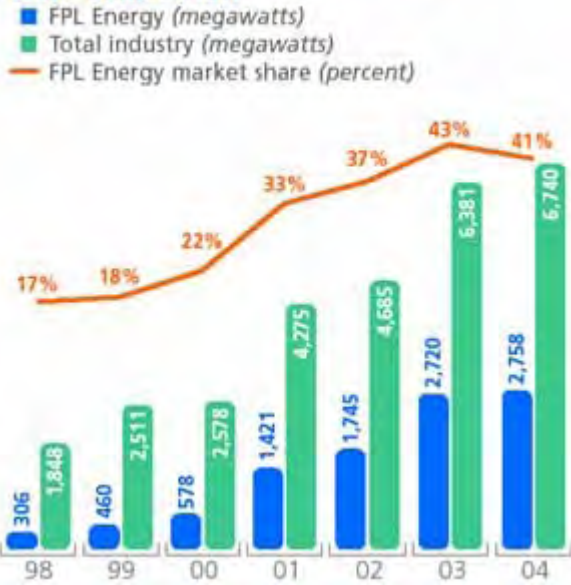
The company also has focused on improving customer satisfaction, and this was reflected by high scores in residential and business surveys conducted in 2004. The J.D. Power and Associates' Electric Utility Customer Satisfaction Study™ of the nation's largest electric utilities placed FPL tied for second 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.

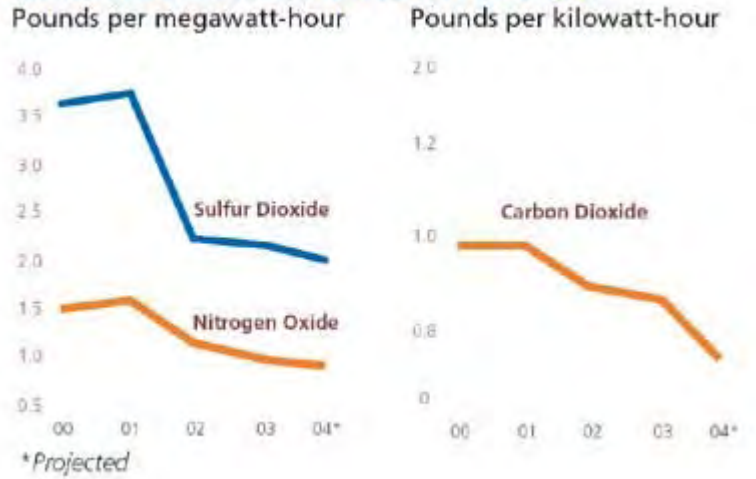
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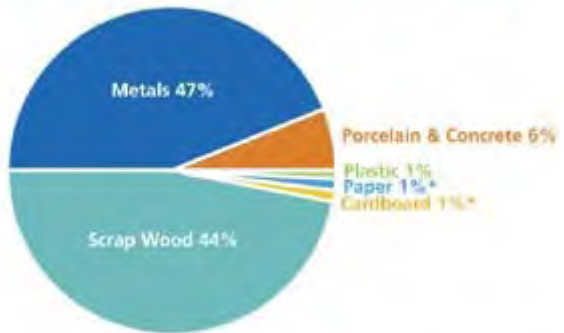
SIGNIFICANT MARKET SHARE IN U.S. WIND GENERATION



REDUCING EMISSIONS RATES AT FPL GROUP



TYPE OF MATERIAL RECYCLED 2000-2004

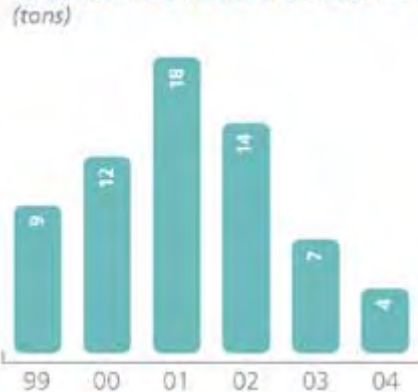


* A large quantity of paper and cardboard are recycled by local vendors

TOTAL MATERIAL RECYCLED 2000-2004



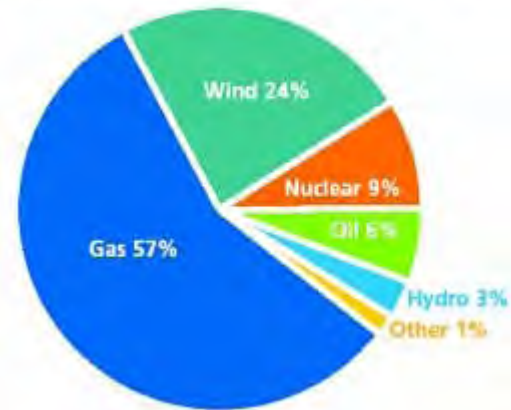
HAZARDOUS WASTE GENERATED 1999-2004



DIVERSIFIED ENERGY MIX
Based on megawatt-hours produced in 2004



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



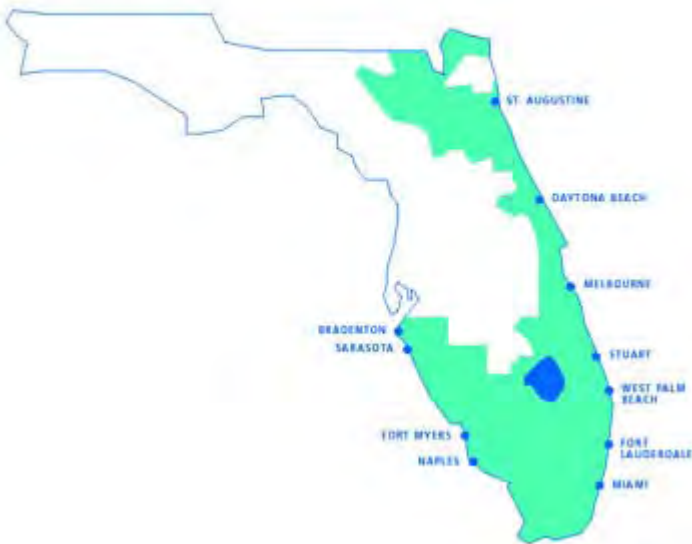
FPL Energy: A Leading Clean Energy Provider

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).

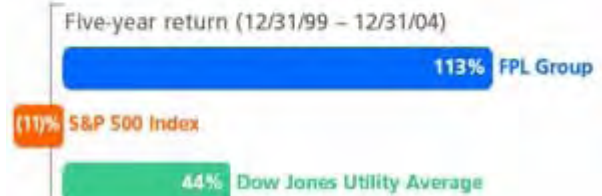
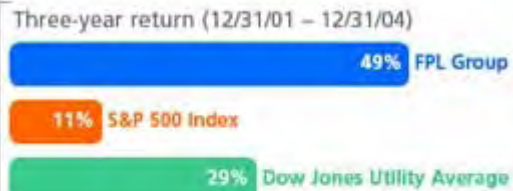


FPL: Serving A Fast-Growing State

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



FPL GROUP COMPARATIVE TOTAL SHAREHOLDER RETURN

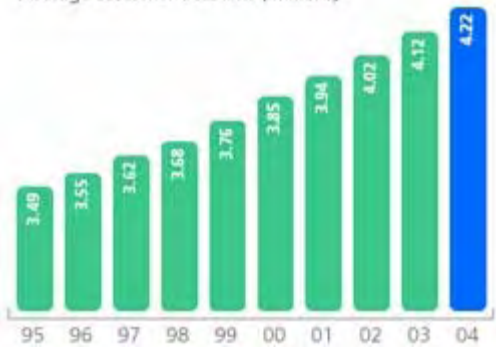


STEADILY GROWING DIVIDEND

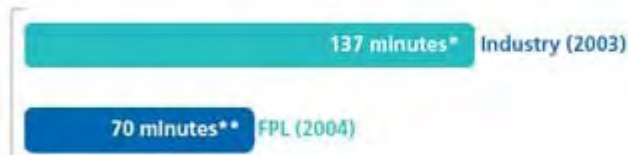
Dividends per share*



STEADY CUSTOMER GROWTH
Average customer accounts (millions)



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

APPENDIX B
DESIGN DATA REPORT



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

Design Data Report

Project Overview

- 159 MW wind energy center
- Up to 106 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	Multiple 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	
Approximate Substation Area	3 Ac
Main Transformer Rating	115/34.5 kV, 107/142/178 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 C
STUDIES AND ASSESSMENTS

APPENDIX C.1

CLASS I CULTURAL RESOURCES INVENTORY



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

(970) 328-6244
FAX: (970) 328-5623
P.O. Box 899
Eagle, CO 81631
e-mail: mac@metcalfarchaeology.com

(701) 258-1215
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 C.2

MICROWAVE INTERFERENCE STUDY



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.

$$Rn \cong 17.3 \sqrt{\frac{n}{F\text{GHz}} \left(\frac{d_1 d_2}{d_1 + d_2} \right)}$$

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



Snyder & Associates, Inc.
Cavalier County Wind Energy Center

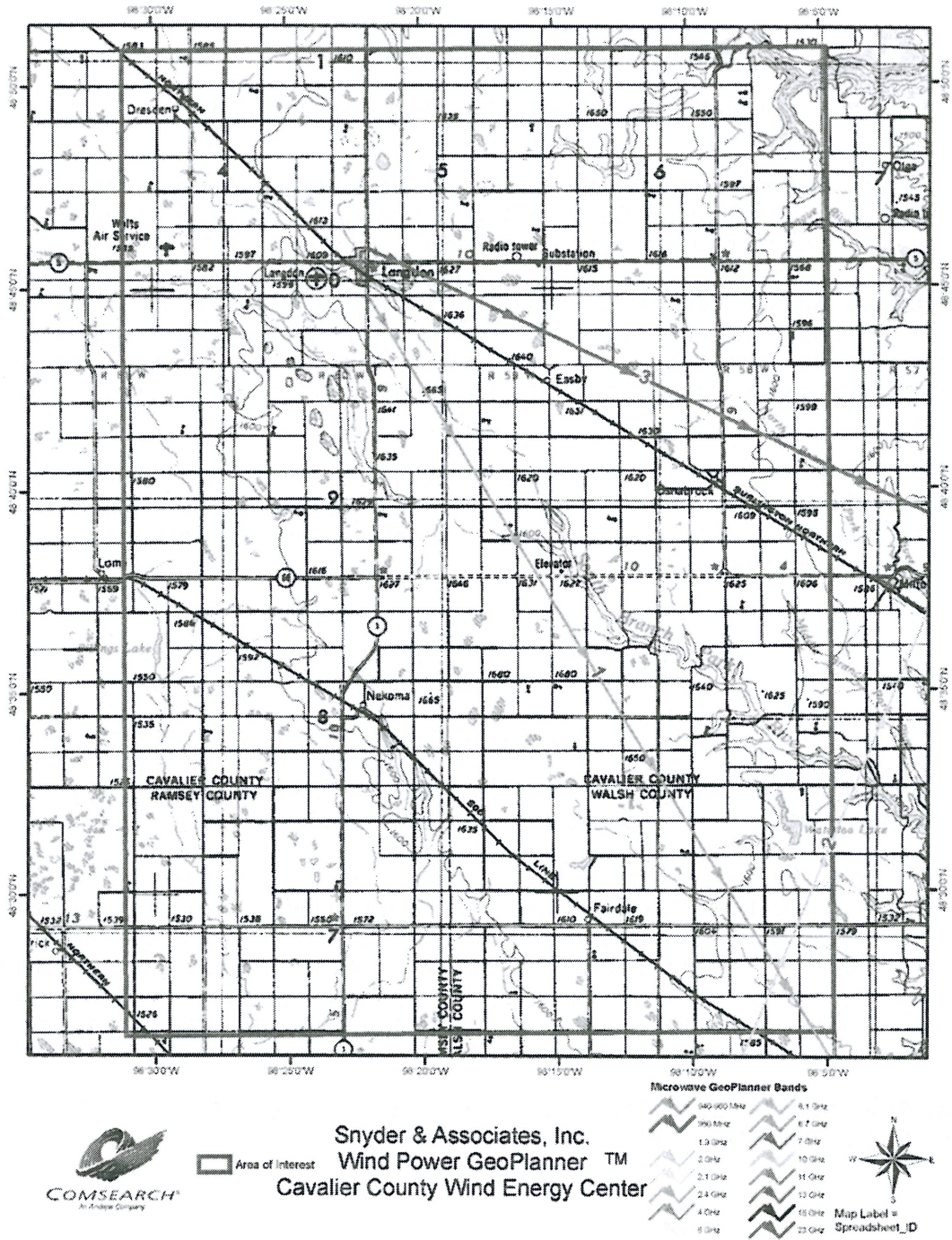
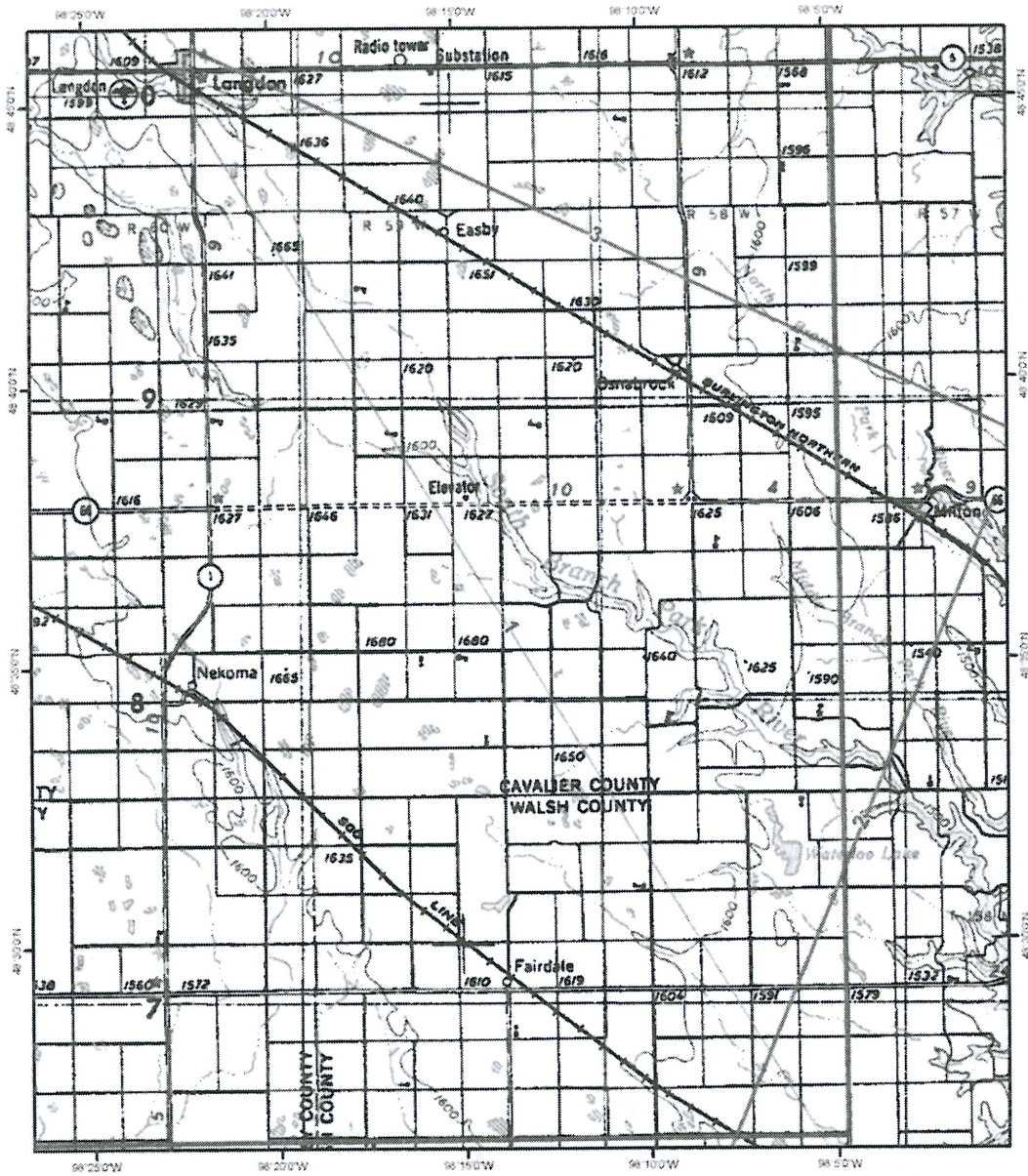


Figure 1 – Wind Power GeoPlanner™



Snyder & Associates, Inc.
Wind Power GeoPlanner™
Cavalier County Wind Energy Center

WCFZ
Area of Interest

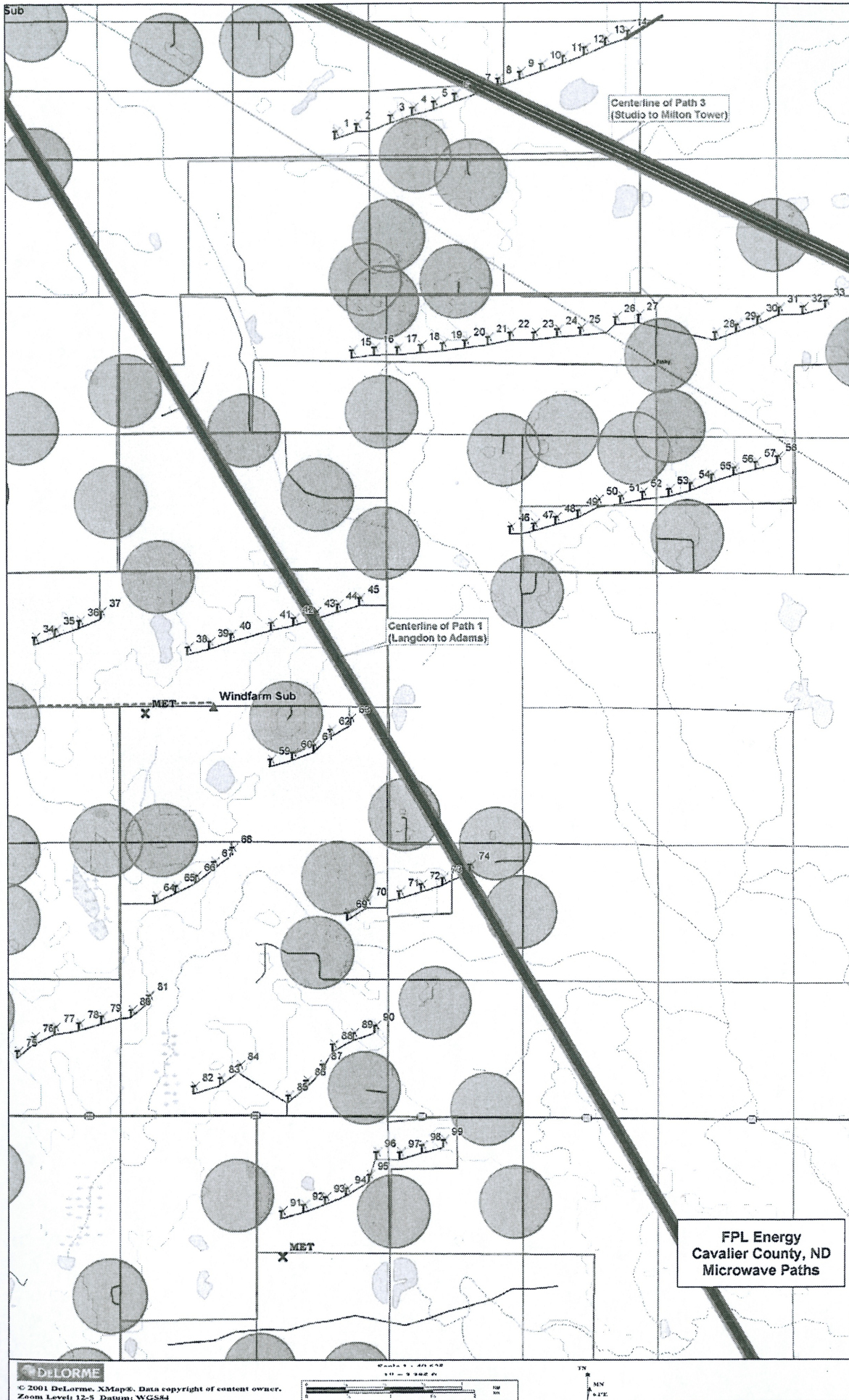


Figure 2 – Wind Power GeoPlanner™ & WCFZ



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)*



Centerline of Path 3
(Studio to Milton Tower)

Centerline of Path 1
(Langdon to Adams)

Windfarm Sub

FPL Energy
Cavalier County, ND
Microwave Paths

DeLORME

© 2001 DeLorme, XMap®. Data copyright of content owner.
Zoom Level: 12-5 Datum: WGS84



APPENDIX D
AGENCY LETTERS



TETRA TECH, INC.

December 21, 2006

Ms. Pam Sharp, Director
North Dakota Office of Management and Budget
600 East Boulevard Avenue, Department 110
Bismarck, North Dakota 58505-0400

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Ms. Sharp:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

The proposed wind farm and associated transmission line will be located in the following Townships, Ranges, and Sections in Cavalier County, North Dakota:

Township	Range	Sections
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160 N	60W	25, 26, 35, 36
159 N	60W	1, 2, 11-13, 24-24, 25, 36
161 N	59W	19, 20, 29-36
160 N	59W	1-36
159 N	59W	1-36
161 N	58W	31
<i>Development will not occur in areas located within the city limits of Langdon</i>		

Pam Sharp
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

Mr. Gary R. Ness, Director
Aeronautics Commission
P. O. Box 5020
Bismarck, North Dakota 58502-5020

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Mr. Ness:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

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161 N	59W	19, 20, 29-36
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159 N	59W	1-36
161 N	58W	31

Development will not occur in areas located within the city limits of Langdon

Gary Ness
December 21, 2006
Page 2

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Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

Attorney General Wayne Stenehjem
State Capitol
600 East Boulevard Avenue, Department 125
Bismarck, North Dakota 58505

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Mr. Stenehjem:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

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<i>Development will not occur in areas located within the city limits of Langdon</i>		

Wayne Stenehjem
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

Mr. Richard Webb, NRCS District Conservationist
Cavalier County Soil Conservation District
800 9th Avenue E, Suite B
Langdon, North Dakota 58249

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Mr. Webb:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

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Richard Webb
December 21, 2006
Page 2

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Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

Mr. Roger Johnson, Agriculture Commissioner
North Dakota Department of Agriculture
600 East Boulevard Avenue, Department 602
Bismarck, North Dakota 58505-0020

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Mr. Johnson:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

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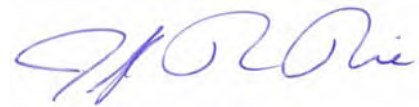
Roger Johnson
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

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: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Mr. Kutzer:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

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Wayne Kutzer
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

Mr. Shane Goettle, Commissioner
North Dakota Department of Commerce
1600 East Century Avenue, Suite 2
P. O. box 2057
Bismarck, North Dakota 58503

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Mr. Goettle:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

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<i>Development will not occur in areas located within the city limits of Langdon</i>		

Shane Goettle
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

Dr. Terry Dwelle, M.D.
State Health Officer
North Dakota Department of Health
600 East Boulevard Avenue
Bismarck, North Dakota 58505-0200

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Dr. Dwelle:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

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Terry Dwelle
December 21, 2006
Page 2

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Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

Ms. Carol K. Olson, Executive Director
North Dakota Department of Human Services
600 East Boulevard Avenue, Department 325
Bismarck, North Dakota 58505-0250

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Ms. Olson:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

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Carol Olson
December 21, 2006
Page 2

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Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

Ms. Lisa Fair McEvers, Commissioner of Labor
North Dakota Department of Labor
600 East Boulevard Avenue, Department 406
Bismarck, North Dakota 58505-0340

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Ms. McEvers:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

The proposed wind farm and associated transmission line will be located in the following Townships, Ranges, and Sections in Cavalier County, North Dakota:

Township	Range	Sections
161 N	60W	25, 26, 35, 36
160 N	60W	25, 26, 35, 36
159 N	60W	1, 2, 11-13, 24-24, 25, 36
161 N	59W	19, 20, 29-36
160 N	59W	1-36
159 N	59W	1-36
161 N	58W	31
<i>Development will not occur in areas located within the city limits of Langdon</i>		

Lisa McEvers
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



November 9, 2006

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
Maxim Project No. 7551118.100

Dear Mr. Towner:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for a confidential client. While many details, including the exact location of the project have yet to be determined, the area shown in the attached figure is the primary focus of our investigation.

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 project area includes portions of the following tracts:

Township	Range	Sections
161 N	60W	25, 26, 35, 36
160 N	60W	25, 26, 35, 36
159 N	60W	1, 2, 11-13, 24-24, 25, 36
161 N	59W	19, 20, 29-36
160 N	59W	1-36
159 N	59W	1-36
161 N	58W	31
<i>Development will not occur in areas located within the city limits of Langdon</i>		

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 wetlands.

Jeff Towner
November 9, 2006
Page 2

We would appreciate a response by November 27, 2006. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech, Inc.

Jeffrey R. Rice
Project Manager, Natural Resources

JRR(JLE)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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November 9, 2006

Dan Cimarofci, State Program Manager
US Army Corp of Engineers
Regulatory Division
1513 S. 12th Street
Bismarck, ND 58504

**RE: Project Area Environmental Scan
Maxim Project No. 7551118.100**

Dear Mr. Cimarofci:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for a confidential client. While many details, including the exact location of the project have yet to be determined, the area shown in the attached figure is the primary focus of our investigation.

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 wetland resources and any other special or sensitive environmental conditions that exist in or near the study area.

The project area includes portions of the following tracts:

Township	Range	Sections
161 N	60W	25, 26, 35, 36
160 N	60W	25, 26, 35, 36
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159 N	59W	1-36
161 N	58W	31
<i>Development will not occur in areas located within the city limits of Langdon</i>		

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.

Dan Cimarofiti
November 9, 2006
Page 2

We would appreciate a response by November 27, 2006. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech, Inc.

Jeffrey R. Rice
Project Manager, Natural Resources

JRR(JLE)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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November 9, 2006

Jesse Hanson, Division Director
North Dakota Parks and Recreation Department
1600 E. Century Avenue, Suite 3
Bismarck, ND 58503

**RE: Project Area Environmental Scan
Maxim Project No. 7551118.100**

Dear Mr. Hanson:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for a confidential client. While many details, including the exact location of the project have yet to be determined, the area shown in the attached figure is the primary focus of our investigation.

We are consulting the North Dakota National 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. We are specifically interested in any additional information relating to the location of wetland resources, notable State wildlife interests, sensitive species habitats, and any other special or sensitive environmental conditions that you may be aware of within the project area.

The project area includes portions of the following tracts:

Township	Range	Sections
161 N	60W	25, 26, 35, 36
160 N	60W	25, 26, 35, 36
159 N	60W	1, 2 ,11-13, 24-24, 25, 36
161 N	59W	19, 20, 29-36
160 N	59W	1-36
159 N	59W	1-36
161 N	58W	31
<i>Development will not occur in areas located within the city limits of Langdon</i>		

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.

Jesse Hanson
November 9, 2006
Page 2

We would appreciate a response by November 27, 2006. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech, Inc.

Jeffrey R. Rice
Project Manager, Natural Resources

JRR(JLE)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure

n\typing\Env-fac\7551118\Query Letters\Langdon\North Dakota National Heritage Program)Agency letter



November 9, 2006

Merl Paaverud, ND SHPO
North Dakota Historical Society
612 East Boulevard Avenue
Bismarck, ND 58505-0830

**RE: Project Area Environmental Scan
Maxim Project No. 7551118.100**

Dear Mr. Paaverud:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for a confidential client. While many details, including the exact location of the project have yet to be determined, the area shown in the attached figure is the primary focus of our investigation.

We are hoping that your office can tell us if there are any historical sites within the boundaries of the tracts listed below that would influence a decision regarding the use of the land. We, of course, are not requesting the name or exact location of the site(s) beyond that which you would normally provide to the public, just an indication of the location and whether the site would preclude development in a particular location.

The project area includes portions of the following tracts:

Township	Range	Sections
161 N	60W	25, 26, 35, 36
160 N	60W	25, 26, 35, 36
159 N	60W	1, 2, 11-13, 24-24, 25, 36
161 N	59W	19, 20, 29-36
160 N	59W	1-36
159 N	59W	1-36
161 N	58W	31
<i>Development will not occur in areas located within the city limits of Langdon</i>		

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.

Merl Paaverud
November 9, 2006
Page 2

We would appreciate a response by November 27, 2006. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech, Inc.

Jeffrey R. Rice
Project Manager, Natural Resources

JRR(JLE)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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TETRA TECH, INC.

November 9, 2006

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
Maxim Project No. 7551118.100**

Dear Mr. Prince:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for a confidential client. While many details, including the exact location of the project have yet to be determined, the area shown in the attached figure is the primary focus of our investigation.

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 project area includes portions of the following tracts:

Township	Range	Sections
161 N	60W	25, 26, 35, 36
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161 N	58W	31

Development will not occur in areas located within the city limits of Langdon

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.

618 South 25th Street , Billings, MT 59101
PO Box 30615, Billings, MT 59107
Tel 406.248.9161 Fax 406.248.9282
www.tetrattech.com

Brian Prince
November 9, 2006
Page 2

We would appreciate a response by November 27, 2006. Please contact me at 406-248-9161 if you have any questions.

Thank you for your assistance.

Respectfully submitted,
Tetra Tech, Inc.

Jeffrey R. Rice
Project Manager, Natural Resources

JRR(JLE)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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TETRA TECH, INC.

December 21, 2006

Mr. Thomas Christensen, Chairman
North Dakota State Soil Conservation Committee
2718 Gateway Avenue, Unit #104
Bismarck, North Dakota 58503

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Mr. Christensen:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

The proposed wind farm and associated transmission line will be located in the following Townships, Ranges, and Sections in Cavalier County, North Dakota:

Township	Range	Sections
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159 N	59W	1-36
161 N	58W	31
<i>Development will not occur in areas located within the city limits of Langdon</i>		

Thomas Christensen
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

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: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Mr. Larson:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

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<i>Development will not occur in areas located within the city limits of Langdon</i>		

Rick Larson
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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TETRA TECH, INC.

December 21, 2006

Mr. Dale Frink, State Engineer
North Dakota State Water Commission
900 East Boulevard
Bismarck, North Dakota 58505-0850

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Mr. Frink:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

The proposed wind farm and associated transmission line will be located in the following Townships, Ranges, and Sections in Cavalier County, North Dakota:

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160 N	59W	1-36
159 N	59W	1-36
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<i>Development will not occur in areas located within the city limits of Langdon</i>		

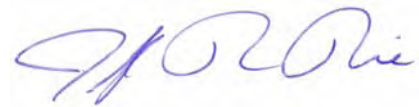
Dale Frink
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

Ms. Maren Daley, Executive Director
Job Service North Dakota
1000 East Divide Avenue
Bismarck, North Dakota 58502-5507

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Ms. Daley:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

The proposed wind farm and associated transmission line will be located in the following Townships, Ranges, and Sections in Cavalier County, North Dakota:

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159 N	59W	1-36
161 N	58W	31
<i>Development will not occur in areas located within the city limits of Langdon</i>		

Maren Daley
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

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: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Ms. Kulas:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

The proposed wind farm and associated transmission line will be located in the following Townships, Ranges, and Sections in Cavalier County, North Dakota:

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<i>Development will not occur in areas located within the city limits of Langdon</i>		

Cheryl Kulas
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure

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TETRA TECH, INC.

December 21, 2006

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: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Mr. Zainhofsky:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

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<i>Development will not occur in areas located within the city limits of Langdon</i>		

Scott Zainhofsky
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

Governor John Hoeven
600 East Boulevard Avenue, Department 101
Bismarck, North Dakota 58505-0001

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Governor Hoeven:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

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Development will not occur in areas located within the city limits of Langdon

John Hoeven
December 21, 2006
Page 2

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Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

December 21, 2006

Mr. Edward C. Murphy, State Geologist
North Dakota Geological Survey
600 East Boulevard Avenue
Bismarck, North Dakota 58505-0840

**RE: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Mr. Murphy:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

The proposed wind farm and associated transmission line will be located in the following Townships, Ranges, and Sections in Cavalier County, North Dakota:

Township	Range	Sections
161 N	60W	25, 26, 35, 36
160 N	60W	25, 26, 35, 36
159 N	60W	1, 2, 11-13, 24-24, 25, 36
161 N	59W	19, 20, 29-36
160 N	59W	1-36
159 N	59W	1-36
161 N	58W	31
<i>Development will not occur in areas located within the city limits of Langdon</i>		

Edward Murphy
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



December 21, 2006

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: Proposed Langdon Wind Energy Center, Cavalier County, North Dakota
Tetra Tech Project No. 7551118.100**

Dear Ms. Christianson:

On behalf of FPL Energy, Tetra Tech, EC Inc. (Tetra Tech) is notifying you of the above-mentioned project in accordance with NDCC 69-06-01-05. Tetra Tech is in the process of preparing an application for a Certificate of Site Compatibility to the North Dakota Public Services Commission (PSC). We request that you review the proposed project and provide comments and information about applicable permits that may be required from your office. You will also be receiving notice once the application is filed.

The proposed Langdon Wind Energy Center is proposed to consist of approximately 105 wind turbines with a combined capacity of up to 160 MW. The most likely turbine size is 1.5 MW wind turbine with a rotor diameter of 77 meters (231 to 269 feet). The wind turbines will be situated on 80 meter (262 feet) tall steel tubular towers secured to a concrete foundation. The exact turbine locations have not been determined to date. An approximately 12 mile 115 kV transmission line will be needed to connect the wind project substation to the interconnection substation near Langdon, ND.

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159 N	60W	1, 2, 11-13, 24-24, 25, 36
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160 N	59W	1-36
159 N	59W	1-36
161 N	58W	31
<i>Development will not occur in areas located within the city limits of Langdon</i>		

Kim Christianson
December 21, 2006
Page 2

Enclosed is a map detailing the location of the proposed Langdon Wind Farm project location to facilitate your review. Comments received by January 21 will be included in the Certificate of Site Compatibility Application to the PSC. If you require further information or have questions regarding this matter, please call me at (406) 248-9168.

Thank you for your assistance.

Respectfully submitted,

Tetra Tech, Inc.



Jeffrey R. Rice
Project Manager, Natural Resources

HMW(JRR)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure



TETRA TECH, INC.

November 9, 2006

Dawn Roppel, County Auditor
Cavalier County Planning and Zoning
901 3rd Street Suite 15
Langdon, ND 58249

**RE: Project Area Environmental Scan
Maxim Project No. 7551118.100**

Dear Ms. Roppel:

Tetra Tech is conducting an investigation of property in Cavalier County as a potential location for a confidential client. While many details, including the exact location of the project have yet to be determined, the area shown in the attached figure is the primary focus of our investigation.

We are consulting the Cavalier County Planning and Zoning board 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 any additional information relating to planning or zoning issues, county regulations, planned infrastructure improvements, or any other issues you may be aware of within the project area.

The project area includes portions of the following tracts:

Township	Range	Sections
161 N	60W	25, 26, 35, 36
160 N	60W	25, 26, 35, 36
159 N	60W	1, 2, 11-13, 24-24, 25, 36
161 N	59W	19, 20, 29-36
160 N	59W	1-36
159 N	59W	1-36
161 N	58W	31

Development will not occur in areas located within the city limits of Langdon

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 would appreciate a response by November 27, 2006. Please contact me at 406-248-9161 if you have any questions.

Dawn Roppel
November 9, 2006
Page 2

Thank you for your assistance.

Respectfully submitted,
Tetra Tech, Inc.

Jeffrey R. Rice
Project Manager, Natural Resources

JRR(JLE)rr

cc: Tracey Martorano (TtEC, Boston)

Enclosure

n\typing\Env-fac\7551118Query Letters\Langdon\Cavalier County_Plan and Zoning_Agency letter



TETRA TECH

BUSINESS CONFIDENTIAL

February 20, 2007

Daniel Cimarosti
U.S. Army Corps of Engineers
Omaha District, North Dakota Regulatory Office
1513 South 12th Street
Bismarck, ND 58504
(Ph: (701) 255-0015

**Subject: Request for U.S. Army Corps of Engineers Jurisdictional
Determination**

Dear Mr. Cimarosti:

Tetra Tech is providing environmental permitting services to a proponent proposing to develop a project within Cavalier County, North Dakota (ND). The proposed project is to be located approximately five miles southeast of Langdon, ND. The project is currently in the preliminary planning stages and, on behalf of the project proponent, Tetra Tech respectfully requests the U.S. Army Corps of Engineers to provide a Jurisdictional Determination (JD) of waters of the U.S. (i.e. wetlands) within the project boundaries indicated on the enclosed map. Tetra Tech has provided a U.S.G.S. topography based Site Location Map to assist in your determination.

This determination will assist in the design of a project that avoids and/or minimizes impacts to jurisdictional wetlands to the greatest extent practicable. If you have any questions or comments regarding this project, do not hesitate to call me at (406) 656-1713. Thank you for your time.

Sincerely,

TETRA TECH

Jeffrey R. Rice
Environmental Group Manager

JRR/rr

n:\typing\Env-fac\7551118\USAOCE Cimarosti letter

Enclosure
cc: Tracey Martorano

Tetra Tech
P.O. Box 30615, Billings, MT 59107
618 South 25th Street, Billings, MT 59101
Tel 406.248.9161 Fax 406.248.9282 www.tetratech.com



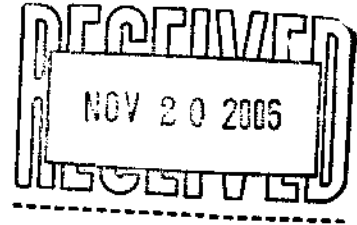
John Hoeven, Governor
Douglass A. Prchal, Director

1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

November 14, 2006

Jeffrey R. Rice
Tetra Tech, Inc.
PO Box 30615
Billings, MT 59107

Re: Maxim Project No. 7551118.100
Cavalier County, North Dakota



Dear Mr. Rice:

The North Dakota Parks and Recreation Department (NDPRD) has reviewed the above referenced project located in Sections 25, 26, 35, and 36, T161N, R60W; Sections 25, 26, 35, and 36, T160N, R60W; Sections 1, 2, 11-13, 24, 25, and 36, T159N, R60W; Sections 19, 20, 29-36, T161N, R59W; Sections 1-36, T160N, R59W; Sections 1-36, T159N, R59W; and Section 31, T161N, R58W, Cavalier County.

Our agency scope of authority and expertise covers recreation and biological resources (in particular rare plants and ecological communities). The project as defined does not affect state park lands that we manage or Land and Water Conservation Fund recreation projects that we coordinate.

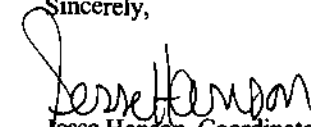
The North Dakota Natural Heritage Inventory has records indicating the presence of several occurrences within or adjacent to the project area including: *Oxytropis deflexa* (drooping locoweed), *Carex backii* (Back's sedge), and *Andropogon gerardii* – (*Sorghastrum nutans* – *Muhlenbergia richardsonis*) tallgrass prairie (mesic tallgrass prairie). Please see attached spreadsheet and map for more information on these species.

The NDPRD recommends that the project be accomplished with minimal impacts and that all efforts be made to ensure that critical habitats not be disturbed in the project area to help secure rare species conservation in North Dakota. Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

It is our policy to charge out-of-state requests for data services including data retrieval, data analysis, manual and computer searches, packaging and collection of data. An invoice for services provided has been enclosed.

Thank you for the opportunity to comment on this project. Please contact Kathy Duttonhefner (701-328-5370 or kgduttonhefner@nd.gov) of our staff if additional information is needed.

Sincerely,


Jesse Hanson, Coordinator
Planning and Natural Resources Division

R.USNDNHI*1734

.....
Play in our backyard!

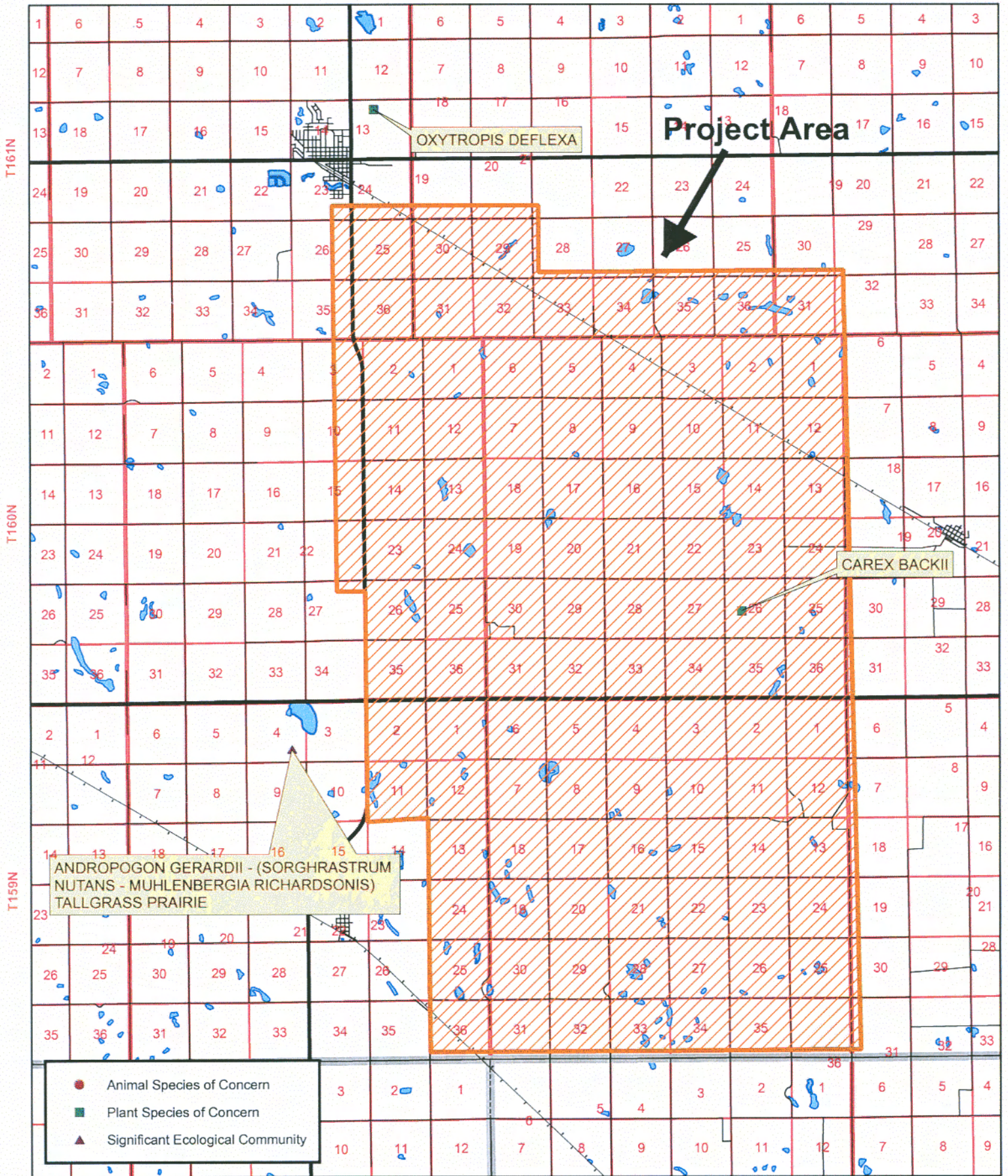
North Dakota Natural Heritage Inventory
Species of Concern and Significant Ecological Communities

State Scientific Name	State Common Name	Township & Range	Section	TRS Notes	State Rank	Global Rank	Federal Status	Last Observation
ANDROPOGON GERARDII - (SORGHRASTRUM NUTANS - MUHLENBERGIA RICHARDSONIS) TALLGRASS PRAIRIE	MESIC TALLGRASS PRAIRIE	159N060W	04		S1			1996-09-05
OXYTROPIS DEFLEXA	DROOPING LOCOWEED	161N060W	13		S1S2	G5		1918-07-18
CAREX BACKII	BACK'S SEDGE	161N058W	33		S2S3	G4		1958-06-13

North Dakota Natural Heritage Inventory Biological and Conservation Data Disclaimer

The quantity and quality of data collected by the North Dakota Natural Heritage Inventory are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in North Dakota have never been thoroughly surveyed, and new species are still being discovered. For these reasons, the Natural Heritage Inventory cannot provide a definite statement on the presence, absence, or condition of biological elements in any part of North Dakota. Natural Heritage data summarize the existing information known at the time of the request. Our data are continually upgraded and information is continually being added to the database. This data should never be regarded as final statements on the elements or areas that are being considered, nor should they be substituted for on-site surveys.

North Dakota Natural Heritage Inventory Species of Concern and Significant Ecological Communities



Project Area

OXYTROPIS DEFLEXA

CAREX BACKII

ANDROPOGON GERARDII - (SORGHRASTRUM NUTANS - MUHLENBERGIA RICHARDSONIS) TALLGRASS PRAIRIE

- Animal Species of Concern
- Plant Species of Concern
- ▲ Significant Ecological Community

R60W

R59W



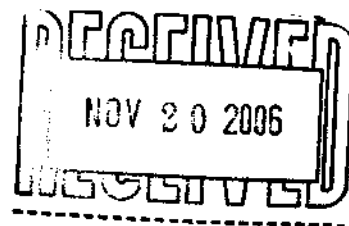
United States Department of the Interior



FISH AND WILDLIFE SERVICE

Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

NOV 16 2006



Mr. Jeffrey R. Rice
Tetra Tech, Inc.
P.O. Box 30615
Billings, Montana 59107

Re: Maxim Project No. 7551118.100

Dear Mr. Rice:

The U.S. Fish and Wildlife Service (Service) has reviewed your letter of November 9, 2006, concerning a property investigation Tetra Tech is conducting on behalf of a confidential client. The property investigation focuses on 99 sections of land located in Cavalier County, North Dakota. We offer the following comments to assist with project planning in accordance with the provisions of the Endangered Species Act (16 U.S.C. 1531 et seq.) and Executive Order 11990 concerning the protection of wetlands.

The Service administers both perpetual wetland easement tracts and Waterfowl Production Areas (owned in fee title) within the identified project area as part of the National Wildlife Refuge System. The attached plat book maps show the Service property interests in the identified project area. Wetland easement tracts are highlighted in yellow or blue and Waterfowl Production Areas are shown in green.

If easement wetlands or Waterfowl Production Areas are affected outside the existing right-of-way by construction activities, stockpiling of material, or acquiring of borrow material, a Service permit and a Section 4(f) evaluation, including an environmental assessment, will be required. Service permits are subject to a refuge compatibility review. Please contact Roger Hollevoet, Project Leader, Devils Lake Wetland Management District, (701) 662-8611, if Service properties will be affected by construction.

There are also numerous freshwater wetlands with temporary, seasonal, and semi-permanent water regimes located in the project area. We recommend using information from the National Wetland Inventory website that is maintained by the Service. This site provides specific information by section and maps depicting the wetland resources in the project area. The web address for this site is <http://www.fws.gov/nwi>.

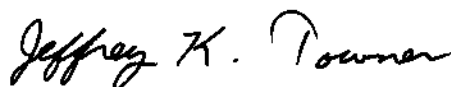
A list of federally endangered, threatened, and candidate species that have been documented in Cavalier County is enclosed. This list fulfills requirements of the Fish and Wildlife Service under Section 7 of the Endangered Species Act.

If a Federal agency authorizes, funds, or carries out a proposed action, the responsible Federal agency, or its delegated agent, is required to evaluate whether the proposed action "may affect" listed species. If the Federal agency determines the action "may affect" a listed species, then the responsible Federal agency shall request formal section 7 consultation with this office. If the evaluation shows a "no effect" situation on the listed species, further consultation is not necessary.

A 404 permit may be required if fill material will be placed in aquatic sites, including some wetlands. We suggest you contact Mr. Dan Cimarosti, Regulatory Office, Corps of Engineers, 1513 South 12th Street, Bismarck, North Dakota 58504, (701-255-0015), to determine their permit requirements. If a 404 permit is required, the Service will provide recommendations on this project to the Corps of Engineers.

Thank you for the opportunity to provide information concerning the land investigation that is being conducted by Tetra Tech in Cavalier County, North Dakota. The information provided in this letter is general in nature because of the size of the property investigation area. As planning for this project progresses and the scope of the work is better defined, please contact this office for site specific recommendations to minimize impacts to fish and wildlife resources and their habitats.

Sincerely,



Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

Enclosures

cc: Project Leader, Devils Lake WMD
COE, Regulatory Office, Bismarck
(Attn: Dan Cimarosti)
Director, ND Game and Fish Dept., Bismarck
(Attn: Mike McKenna)

FEDERAL THREATENED AND ENDANGERED SPECIES
FOUND IN CAVALIER COUNTY
NORTH DAKOTA
November 2006

ENDANGERED SPECIES

Birds

Whooping crane (Grus Americana): Migrates through west and central counties during spring and fall. Prefers to roost on wetlands and stockdams with good visibility. Young adult summered in North Dakota in 1989, 1990, and 1993. Total population 140-150 birds.

Mammals

Gray wolf (Canis lupus): Occasional visitor in North Dakota. Most frequently observed in the Turtle Mountains area.

THREATENED SPECIES

Birds

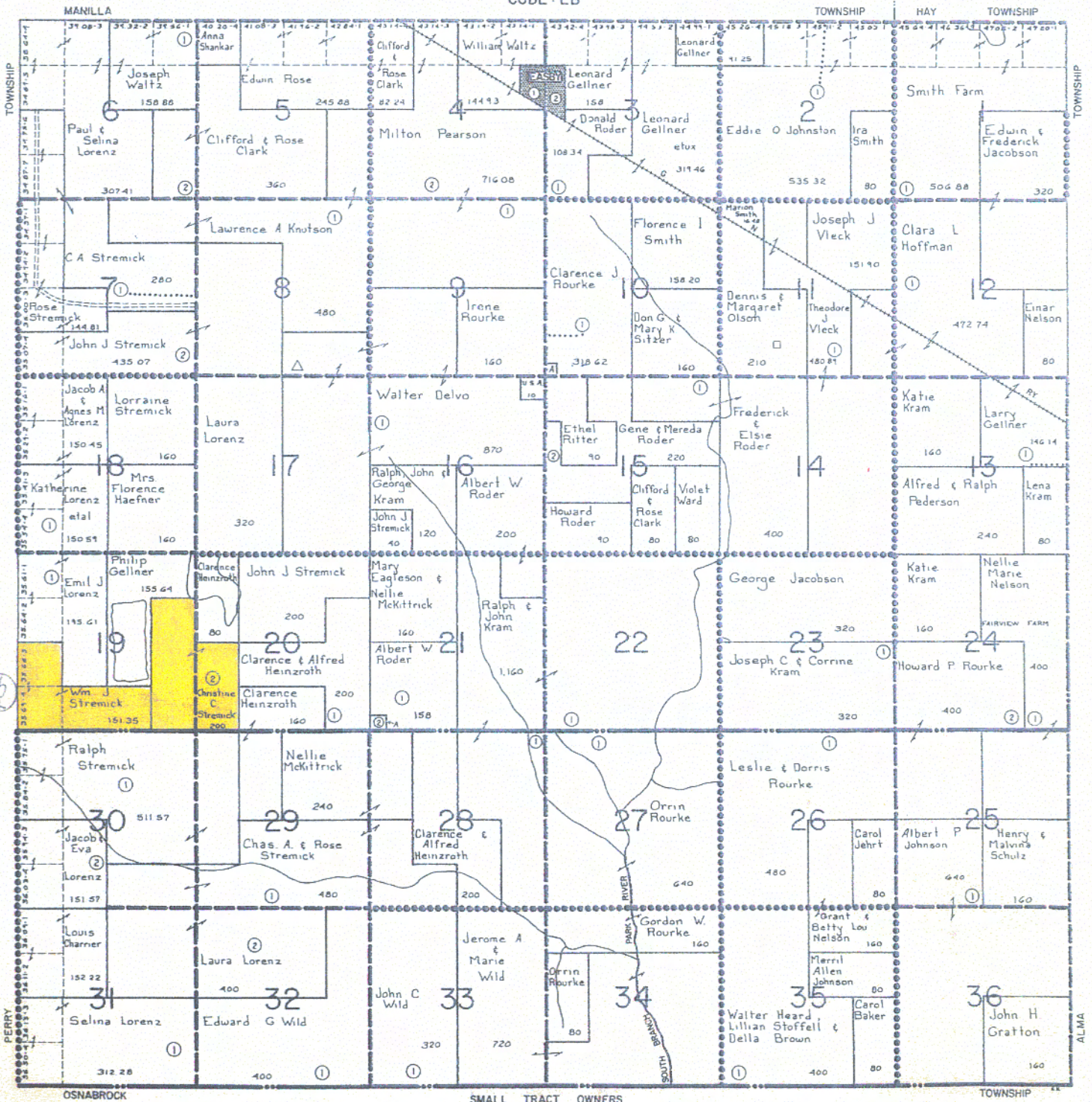
Bald eagle (Haliaeetus leucocephalus): Migrates spring and fall statewide but primarily along the major river courses. It concentrates along the Missouri River during winter and is known to nest in the floodplain forest.

EASBY

TOWNSHIP : 160 N.

RANGE : 59 W.

CODE : EB



SMALL TRACT OWNERS

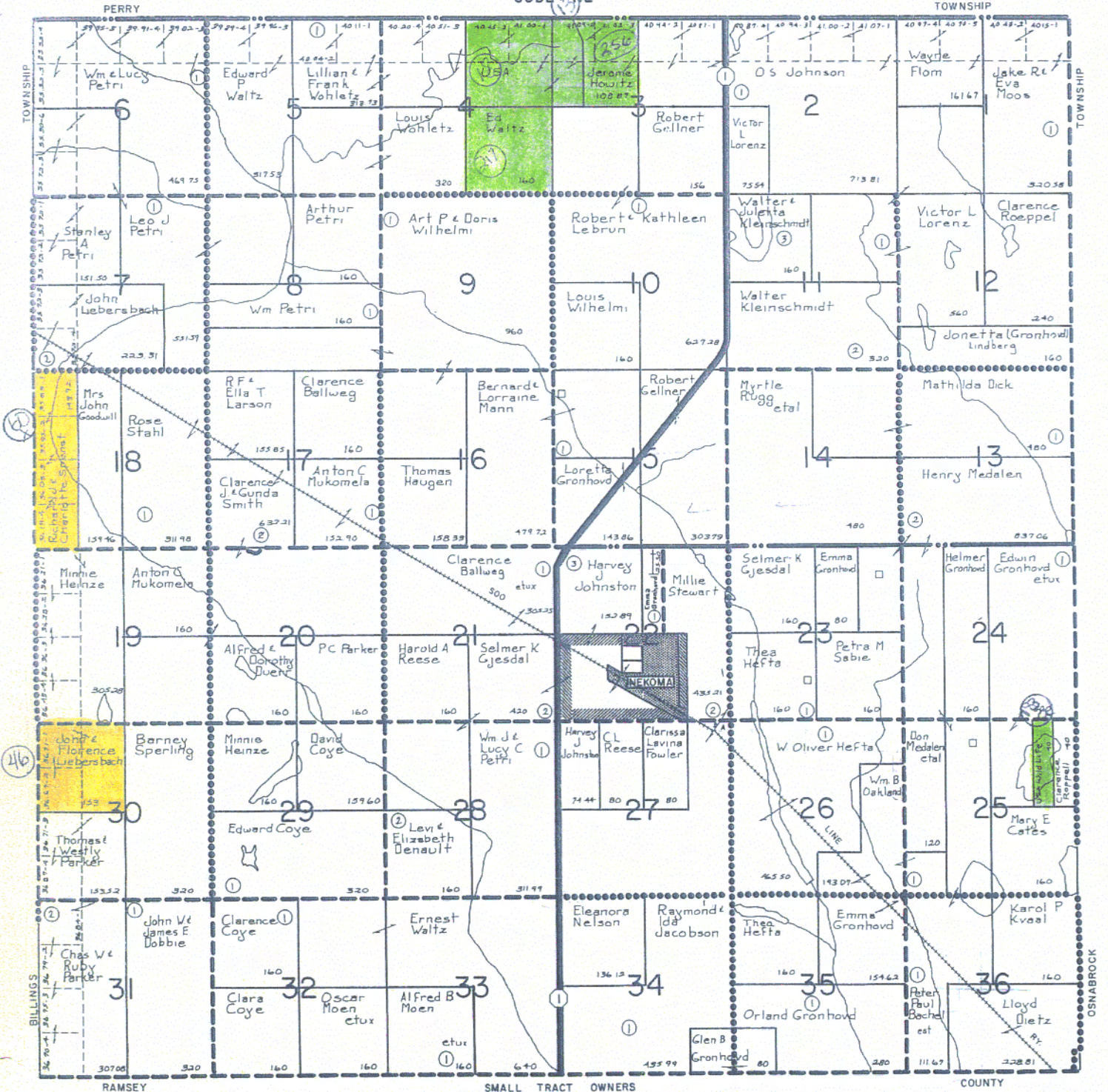
SEC.	LOT	NAME	ACRES
10	A	Minnesota Power Co-op Inc	...
21	A	George Roder	...

NEKOMA

TOWNSHIP : 159 N.

RANGE : 60 W.

CODE 1 NE



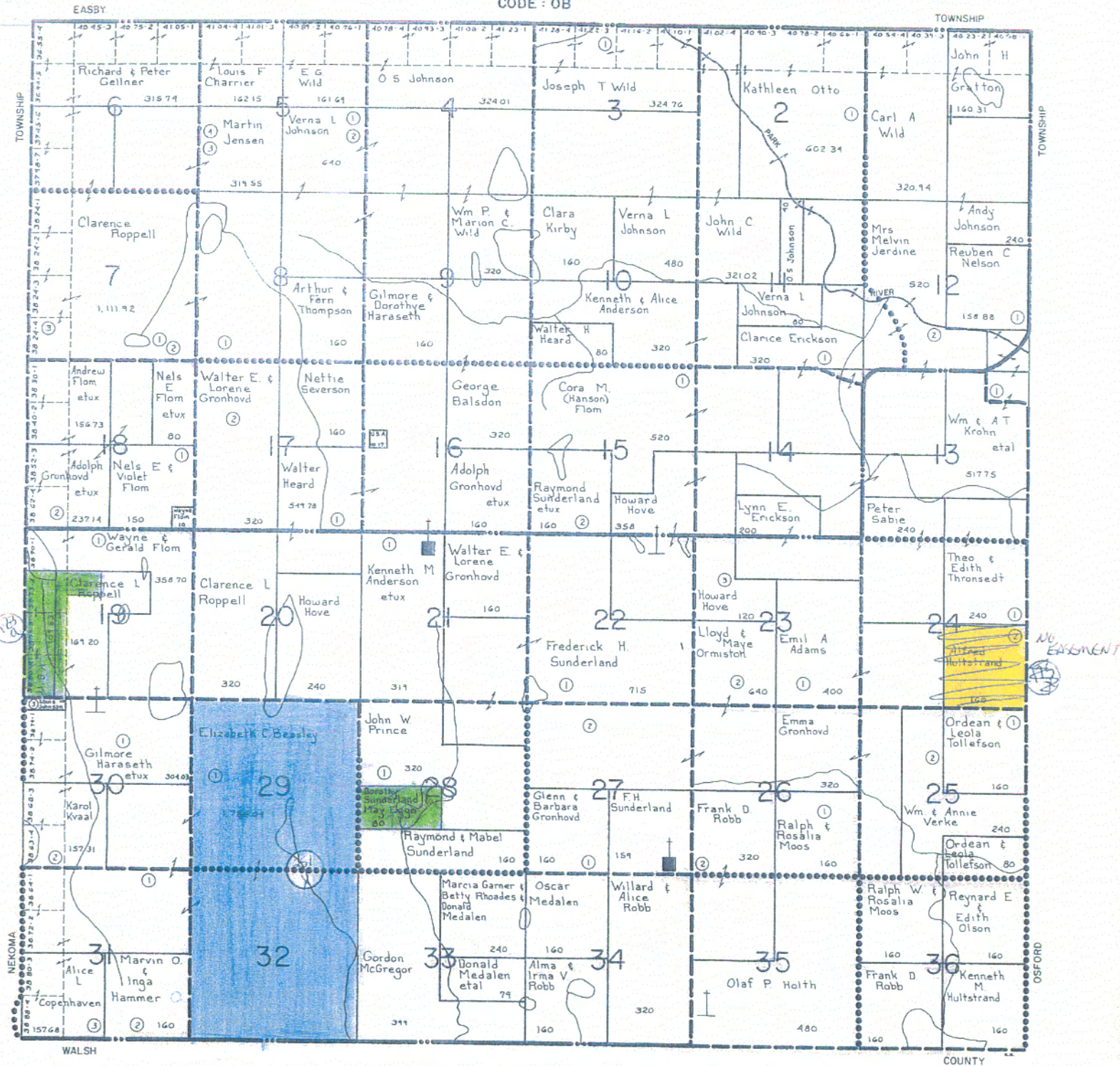
SEC	LOT NAME	ACRES
27	A Dorothy Sunderland	1.50
27	B Robert & Lucille Heck	-

OSNABROCK

TOWNSHIP : 159 N.

RANGE : 59 W.

CODE : OB



December 5, 2006

Tanya Wirth

Cavalier County Tax Director
901 3rd Street, Suite 15
Langdon, ND 58249
Ph: (701) 256-2229
Fax: (701) 256-2546
twirth@nd.gov

Jenny,

I apologize for our office not issuing you a response sooner; hopefully this information will help with your project.

Some of the townships you inquired about have their own zoning ordinances – which are on file with the County Recorder. The County Recorder can be reached at:

Vicki Kubat
Cavalier County Recorder
901 3rd St
Langdon, ND 58249
(701) 256-2136

Other townships that have not filed their own zoning ordinances abide by the Cavalier County Zoning Regulations. This is about a 30 page manual that is, unfortunately, not in electronic format. I would be able to either fax it or mail to you if you wish.

The zoning information for the individual townships is as follows:

Elgin – Zoning ordinances are on file with Cavalier County Recorder
Randy Mikkelsen – Chairman
10543 Elgin Lane
Langdon, ND 58249
(701) 256-3124

Perry – this township abides by Cavalier County Zoning Regulations
Hans Reinhardt - Chairman
10453 89th St NE
Langdon, ND 58249
(701) 256-3054

Nekoma – this township abides by Cavalier County Zoning Regulations
Robert Wilhelmi – Chairman
PO Box 116
Nekoma, ND 58355
(701) 949-2781

Manilla – Zoning ordinances are on file with Cavalier County Recorder
Randy Evans - Chairman
10931 94th St NE
Langdon, ND 58249
(701) 256-3145

Easby – Zoning ordinances are on file with Cavalier County Recorder

Don Smith – Chairman

11271 88th St NE

Osnabrock, ND 58269

(701) 256-5933

Osnabrock – this township abides by Cavalier County Zoning Regulations

Duane Gronhvd – Chairman

PO Box 111

Nekoma, ND 58355

(701) 949-2797

Hay – Zoning ordinances are on file with Cavalier County Recorder

Tom Balsdon - Chairman

11552 Hwy 5

Osnabrock, ND 58269

(701) 256-5877

I am unaware of any planned infrastructure improvements or any other issues with these areas.
If you have any further questions or require further information, please do not hesitate to call or email our office.

Tanya Wirth

Cavalier County Tax Director

State of North Dakota
County of Cavalier
Recorded: 04/14/2004 At 09:30 AM

PREAMBLE

AN ORDINANCE ESTABLISHING COMPREHENSIVE ZONING REGULATIONS FOR
HAY TOWNSHIP.

THE INTENT OF WHICH IS TO:

Promote the health, safety morals, and
general welfare of the township people
and the orderly development of township
lands;

Preserve and maintain agricultural lands
for farm use;

Encourage non-farm growth to locate
within existing communities or
community-service district,

Promote a healthy and visually
attractive environment,

Promote the development of utility
corridors which utilize the least
productive agricultural land,

Regulate development in the drainage
basin so as to reduce flood damage
and protect stream flows,

Discourage development which exceeds the
carrying capacity of the land, air, or
water resources,

Discourage any development which places
an excessive financial burden on the
township or county government.

THIS ORDINANCE IS HEREBY ADOPTED EFFECTIVE THIS 13
DAY OF April, 1987.

John Berg
CHAIRMAN, TOWNSHIP BOARD

Theresa Balaban
CLERK, TOWNSHIP BOARD

Gay - 161-58

223100

Pg 2 of 15

State of North Dakota)
County of Cavalier)
Recorded: 04/14/2004 At 09:30 AM

ARTICLE I

Introduction

- I. Authority: This ordinance is adopted under the authority granted in Chapter 58-03 of the North Dakota Code.
- II. Purpose: The purpose of this ordinance is to preserve the agricultural use of the land, promote the health, safety, morals, general welfare, and orderly development of Hay Township in Cavalier County.
- III. Severability: If any provision or section of this ordinance is adjudged invalid by a court of competent jurisdiction, the remainder of the ordinance shall not be affected.
- IV. Repeal: All other ordinances or parts of ordinances of Hay Township in conflict with this ordinance are hereby repealed.
- V. Title: This ordinance shall be known as "Zoning Ordinance of Hay Township".
- VI. Effective Date: This ordinance shall become effective after a public hearing and adoption by the Hay Township Board of Supervisors.

ARTICLE II

Definitions of Terms Used In This Ordinance

1. Definitions: For the purpose of this ordinance, the following definitions have been adopted:
 - A. Rules:
 1. Words used in the present shall include the future, the singular number shall include the plural.
 2. The word person includes a firm, partnership, association, corporation or individual.
 3. The word shall is mandatory.

State of North Dakota)
County of Cavalier)
Recorded: 04/14/2004 At 09:30 AM

E. List of Definitions:

1. Agriculture: The use of land for agricultural purposes, including the necessary buildings or structures for farm or farm labor use. Agriculture shall include farming, dairying, pasturage, horticulture, animal and poultry husbandry, and accessory uses and buildings for packing, treating or storing produce, providing accessory uses are secondary to normal agricultural activities.
2. Accessory Use or Accessory Structure: A use or structure incidental and subordinate to the main use of the property and located on the same lot as the main use, such as a garage or tool shed.
3. Building: Any structure used for shelter or enclosure of persons, animals, or chattels.
4. Conditional Use: A use conditionally permitted in order to reduce any adverse effects on surrounding property.
5. Dwelling: A building or portion thereof occupied exclusively for residential purposes, but not including mobile recreational vehicles.
6. Dwelling, Farm: A single family dwelling or mobile home located on a farm which is occupied by the farm's owner or person employed thereon.
7. Dwelling, Non-Farm: A single family dwelling or mobile home located on a farm or otherwise of which the occupant does not derive at least 50 percent of his gross income from agricultural activities.
8. Family: A group of one or more persons occupying a single premise and living as a single housekeeping unit.
9. Farm: Any aggregate area operated by one person, family, partnership, corporation or joint venture for agriculture or farming purposes.
10. Feedlot: The use of land or buildings for the exclusive purpose of concentrated feeding or fattening of livestock for marketing. The application of feedlot regulations shall be limited to non-farm related enterprises.

- 11. Home Occupation: Any occupation (1) which is carried on solely by members of the family residing on the premise, (2) is clearly secondary to the use of the dwelling for residential purposes, (3) and does not create excess noise, traffic, or other disturbances.
- 12. Junk Yard: Any land or building used for commercial storage, sale or dismantling of obsolete vehicles, junk and other machinery.
- 13. Lot: A parcel of land sufficient to provide the yard requirements of the regulations.
- 14. Mobile Home: A mobile home is a dwelling unit designed for transport after construction. A recreational travel trailer is not to be considered a mobile home.
- 15. Non-Conforming Use: Any structure, land or building existing at time of adoption or amendment of this ordinance which does not conform to the provisions of the regulations.
- 16. Setback: The open space extending the full width of a lot between a building and a public right-of-way line, easement, or front property line.
- 17. Structural Alteration: Any change in the supporting members or any substantial change in the roof or exterior walls of a building.
- 18. Variance: The grant of relief from the requirements of the ordinance where it can be shown that due to unusual conditions of the property strict application of the regulations would result in undue hardship

ARTICLE III

General Provisions

- I. Jurisdiction: The jurisdiction of this ordinance shall include all unincorporated areas of Hay Township in Cavalier County.
- II. Compliance: Except as hereinafter provided, no building, structure, or land shall be erected, repaired or used except in conformance with these regulations.

- III. Agriculture Exempted: Nothing in this ordinance shall be applied for the purpose of preventing or restricting the use of land or buildings for agriculture or any of the normal incidents of agriculture.

- IV. Interpretation: In the interpretation and application of this ordinance, the provisions of this ordinance shall be held to the minimum requirements. Where this ordinance imposes a greater restriction than existing law, the provisions of this ordinance shall govern.

- V. Non-Conforming Uses:
 - 1. Lawful, non-conforming uses of land or buildings existing at the date of adoption of these regulations may continue provided no structural alterations except for normal maintenance are made and such non-conforming uses shall be extended to occupy a greater area of land than occupied at the time of adoption.
 - 2. No building or structure where a non-conforming use has been discontinued for a period of 1 year or has changed to a permitted use shall again be devoted to a non-conforming use.
 - 3. A non-conforming structure destroyed or damaged less than 50 percent of its fair market value may be reconstructed within 1 year of such casualty. If damaged more than 50 percent of its fair market value, such building shall be reconstructed in conformance to those regulations.
 - 4. The provisions of this section shall not be applicable to conditional uses or any use made non-conforming by a change in district regulations.

- VI. Amendments: In accordance with Chapter 58-03, Section 58-03-13 of the North Dakota Century Code, the Board of Township Supervisors may from time to time amend the provisions of this ordinance. Such amendment shall not become effective until after a public hearing at which parties of interest and citizens shall have the opportunity to be heard. At least 15 days notice of the time and place shall be published in the official newspaper of the county. The description of any land within any zoning district, together with any restriction therein, or any amendment to the zoning ordinance, shall be filed with the Board of Township Supervisors.

ARTICLE IV

District Regulations

I. Establishment of District Regulations: For the purpose of these regulations, the entire area of Hay Township is zoned agricultural.

A. Zoning Map - The location and boundaries of the zoning districts are hereby established as shown on the map entitled "Zoning District Map", which accompanies, and is hereby made a part of the regulations.

1. Location of District Boundaries

- A) Where the district boundary lines on the Zoning District Map are indicated to follow highway, road, or railroad rights-of-way, such boundary lines shall be construed to be the centerline of said rights-of-way unless clearly shown to the contrary.
- B) Where any uncertainty exists as to the exact location on the zoning district boundary line, the Zoning Board shall determine the location of such boundary lines.

II. A - Agricultural District:

A. Purpose: The "A" Agricultural District is established as a district in which the predominant use of land is for general agricultural uses. For the "A" Agricultural District, in promoting the general purposes of this ordinance the specific intent of this section is:

- 1. To encourage the continued use of land for agricultural uses;
- 2. To discourage scattered commercial and industrial uses of the land and to discourage any other use which would interfere with an integrated and efficient development of the land;
- 3. To discourage any use, which because of its character or size, would create unusual requirements and costs of public services such as police and fire protection, water supply, and sewerage before such services can be systematically and adequately provided.

State of North Dakota)
County of Cavalier)
Recorded: 04/14/2004 At 09:30 AM

B. Permitted Uses:

- (1) General farming operations including farm dwellings and agricultural buildings, nurseries and tree farms. Any shelter belts to be planted within 200 feet from the center line of roads shall require a permit and may be approved.
- (2) Single family dwellings related to an individual farming operation.
- (3) Airports and heliports.
- (4) Public parks and other public buildings and public or quasi-public recreational facilities.
- (5) Storage of agricultural products and minor handling according to State Health Department regulations
- (6) Home occupations and accessory uses customarily incident to the uses permitted in this district but not including feedlots or other concentrated animal feeding operations.

C. Conditional Uses: The following conditional uses and their accessory uses are permitted subject to the stipulation of the zoning board. Non-farm dwellings, schools, sanitary disposal facilities including landfills, mining or gravel removal, feedlots, wrecking, salvage or junk yards, radio or TV towers, utility lines and sub-stations in accordance with the appropriate provisions of this ordinance, parks or open land recreational use, animal hospital, fire station, churches and cemeteries, grain cleaning plants, grain elevators and grain storage facilities. Anhydrous and fertilizer plants, provided no dwelling is within 660 yards.

D. Dimensional Standards:

1. Setbacks:

- A. 200 feet from all section lines and the centerlines of township and county roads.
- B. 250 feet from the centerline of all state highways.

ARTICLE V

Special Provisions

- I. Utilities: Electric power, electrical transmission lines, natural gas pipe lines, petroleum products pipe lines.
- A. New utilities, electric power lines, electric transmission lines, natural gas pipe lines, petroleum products pipe lines shall be considered as a conditional use, and as such shall conform to all requirements put upon them by the Township Zoning Board.
 - B. The Township Zoning Board, before authorizing the issuance of a permit, shall determine that the proposed utilities or lines do not interfere with: 1) the reasonable established future plans of adjoining townships, 2) the orderly development and safety of the township. If any modifications of said provisions appear necessary, such modification shall be noted as a limitation on the zoning permit.
 - C. All pipe lines, natural gas, petroleum lines, etc., shall be placed deep enough as not to constitute a hazard to normal farming operations.
 - D. Excavations for tunneling of any pipe lines under roads, farm drains, group drains and local drains shall be done by the company owning or leasing said pipe lines and cost of said excavation to be borne by said company.
- II. Sanitary Regulations: All agricultural, residential, business or industrial structures shall conform to the North Dakota health regulations or District Health regulations as it refers to wells, irrigation and septic and sanitary systems.
- III. Shelter Belts: No shelter belts or major tree planting shall be established closer than:
- a) 200 feet from all section lines and the centerlines of all township and county roads.
 - b) 250 feet from the centerline of all state highways.
 - c) The township board may by a Resolution of Record agree with a request from consenting landowners to the placement of a shelterbelt on a mutually held property line.
- IV. Excavation and mining of sand, gravel, rock or stone by any commercial mineral operation.

1. Evidence of written agreement between the applicant and property owner that excavation or processing shall not take place within three hundred (300) feet of an adjacent property line or within five hundred (500) feet of an existing residence.
2. Written evidence of a reclamation agreement with the surface owner.
3. A road maintenance contract has been negotiated with the township stating responsibilities for maintaining the roads which are used as haul routes by the person removing the gravel.
4. The applicant shall conform to all requirements regarding preservation, removal or relocation of historical or archaeological artifacts.

V. Residential Development: The following regulations shall be applied to the construction of non-farm dwelling units:

A. Density:

There shall be no more than one (1) non-farm dwelling per quarter section (160 acres).

B. Dimensional Standards:

1. Setbacks:

- a) 200 feet from all section lines and the centerlines of all township and county roads.
- b) 250 feet from the centerlines of all state highways.

2. Lot Size - 5 acres

3. Lot Width - 350 Feet

4. Side Yard - 40 Feet

C. No new dwellings shall be located within 660 yards from an existing anhydrous or fertilizer plant.

ARTICLE VI

Administration and Enforcement

I. Zoning Administrator: The Zoning Administrator shall be appointed by and the Zoning Board. Duties of the Zoning Administrator shall include:

- A. Issuance of all permits;
- B. Conduct inspections of buildings;
- C. Maintain records of the regulations and permits;
- D. Transmit to the Zoning Board all applications for appeals, variances, or conditional use permits and all applications for amendments to the Board of Township Supervisors.

II. Township Zoning Board: Membership for the Board shall consist of the Board of Township Supervisors plus two (2) representatives from the incorporated communities within the township. Duties of the board shall include:

- 1. Establishment of rules, regulations and procedures for the purpose of administering the zoning ordinance.
- 2. Assist the zoning administrator in conducting inspections of buildings and administering the zoning ordinance.
- 3. Hear and decide appeals where it is adjudged by the applicant that an error in judgement has been made by the zoning administrator.
- 4. Review and study from time to time the provisions of the regulations.
- 5. The zoning board shall serve as an advisory to the township board. The township board shall have final review of all zoning board decisions.

A. Appeals: Any person aggrieved by the provisions of these regulations or by any order of determination of the zoning administrator may within 60 days of such action, petition for a hearing to the township zoning board. Such appeal shall be in writing and shall specify in detail the grounds for the appeal.

1. Procedures:

- a. Appeals shall be filed with the zoning administrator.
- b. Within 30 days of filing, the township zoning board shall fix a date for a hearing.
- c. Notice in writing shall be given to the petitioner at least 5 days prior to the hearing.

d. Within 15 days after the hearing, the township Zoning Board shall take action and shall mail by registered mail a copy of its order to the petitioner.

B. Variances: As used in this ordinance, a variance is authorized only for height, area, or size of structures or yards.

No variance shall be authorized unless the township zoning board finds beyond a reasonable doubt that all of the following conditions exist:

1. That there are exceptional or extra-ordinary circumstances applying to the property in question or to the intended use of the property that do not apply generally to other properties or class or use in the same zoning district.
2. That such variance is necessary for the preservation and enjoyment of a substantial property right possessed by other properties in the same zoning district and in the vicinity.
3. That the authorization of such variance will not be of substantial detriment to adjacent property and will not materially impair the purpose of the regulations or the public interest.
4. The owner cannot otherwise obtain a reasonable return on this property.
5. The hardship is not self-created.
6. The variance request is the minimum necessary to permit a reasonable use of the land.

C. Conditional Uses: No permit pertaining to the conditional use of land or buildings shall be issued unless:

1. An application for a conditional use permit has been submitted to the township zoning board for review.
2. The board has held a public hearing.
3. The board has made written findings certifying compliance with rules governing conditional uses and that, where applicable, satisfactory provision for the following has been made:

- a. Entrance and exit to property with reference to public safety, traffic flow and convenience.
- b. Parking and loading requirements of the specific use.
- c. General compatibility with the surrounding property with due consideration for noise, order or other adverse effects.
- d. Required open space and yards.
- e. Any other applicable circumstances that may need further attention.

III. Permits: No structure or land use for residential, commercial, or industrial purposes including accessory uses, shall be built, altered or moved until a permit has been obtained from the zoning administrator. No permit shall be required for maintenance or repair of any building which does not alter the plan of the structure.

A. No Building Permit Without Approved Access

1. No building permit shall be issued until the Zoning Administrator has approved in writing an approach permit for access to the lot upon which the permit is requested.

2. No building permit or approach permit may be issued unless and until all roadways which are necessary for access to the property for which a permit is sought are constructed to County standards and approved in writing by the zoning Administrator.

B. No Electric Power Without Proper Permits

It shall be unlawful for any association, company, person, firm, cooperative or corporation to use or permit to use, or to supply electrical current for electrical wiring for lights, heat or power in any building or structure within the zoned area of the township, unless the required permits and approval of such building, structure, and electrical circuits have been issued by the Township Board or by an authorized representative thereof. The Certificate of Approval shall be attached to the electrical wiring circuits prior to the installation of the electrical meter.

IV. Violations of Regulations: A violation of this ordinance is an offense punishable by a fine not to exceed \$200.00 for each and every day that any violator fails to comply with the provisions of these regulations. All fines for violation shall be paid to the Township Clerk and shall be credited to the general fund of the township. In addition to other remedies townships may institute any appropriate actions or proceeding in accordance with Section 58-03-14.

Whenever a violation of this ordinance occurs, any person may file a complaint in regard thereto. All such complaints shall be filed with the Zoning Administrator who shall investigate such violation and report to the Board of Township Supervisors for appropriate action.

V. Fees: For the purpose of administering this ordinance, fees may be instituted by the board of township supervisors.

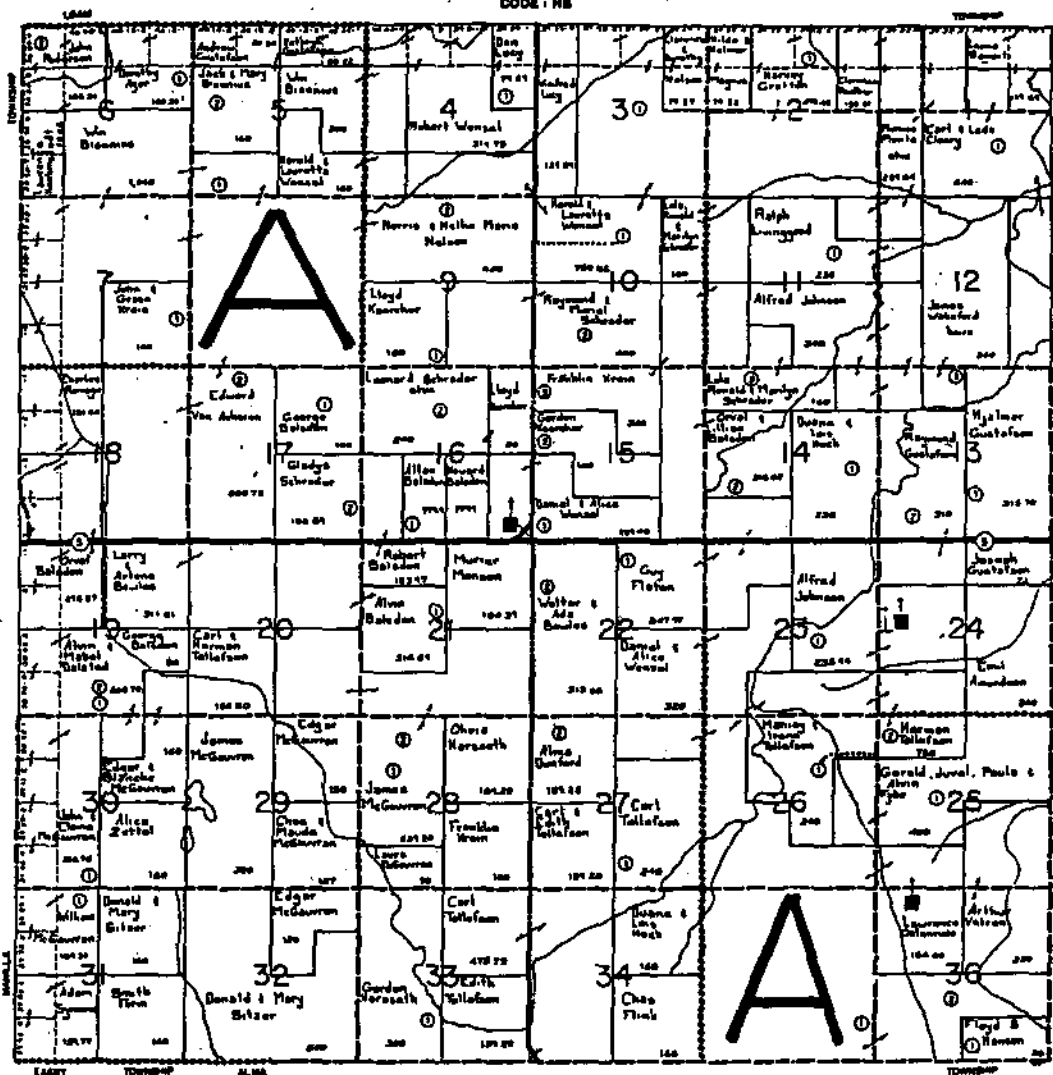
THE ZONING DISTRICT MAP OF THE TOWNSHIP OF

HAY

TOWNSHIP 164 N

CODE: MS

RANGE 66 W



Zoning Districts

Zoning Commission Public Hearing: 2 April 1987

A....Agricultural

Township Board Public Hearing: 16 April 1987

Adopted:

223100

Pg 14 of 15

223100

Pg 15 of 15

State of North Dakota)
County of Cavalier)
Recorded: 04/14/2004 At 09:30 AM

**ORDINANCE ESTABLISHING COMPREHENSIVE
ZONING REGULATIONS FOR HAY TOWNSHIP**

Resigned in front of a notary public this 14th day of April, 2004.

Tom Balsdon

Tom Balsdon - Chairman

Carolyn Balsdon

Carolyn Balsdon - Clerk

Subscribed and sworn to before me this 14th day of April, 2004.



Lisa Gellner

Notary Public
Cavalier County, North Dakota
My Commission Expires:

Lisa Gellner
Notary Public, State of North Dakota
My Commission Expires March 18, 2008

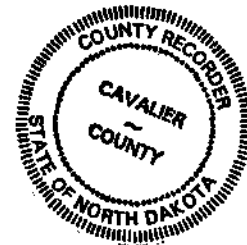
OFFICE OF COUNTY RECORDER FEE: \$52.00
State of North Dakota)
County of Cavalier)

I hereby certify that the within instrument was filed in this office for record on 04/14/2004 at 09:30 AM, and was duly recorded as Document Number 223100

Wicki J. Kubat Recorder

By _____ Deputy

Return To: CAROLYN BALSODN 9875 115 AVE
OSNABROCK, ND 58269



161-60

PREAMBLE

AN ORDINANCE ESTABLISHING COMPREHENSIVE ZONING REGULATIONS FOR ELGIN TOWNSHIP

THE INTENT OF WHICH IS TO:

Promote the health, safety morals, and general welfare of the township people and the orderly development of township lands;

Preserve and maintain agricultural lands for farm use;

Encourage non-farm growth to locate within existing communities or community-service district,

Promote a healthy and visually attractive environment,

Promote the development of utility corridors which utilize the least productive agricultural land,

Regulate development in the drainage basin so as to reduce flood damage and protect stream flows,

Discourage development which exceeds the carrying capacity of the land, air, or water resources,

Discourage any development which places an excessive financial burden on the township or county government.

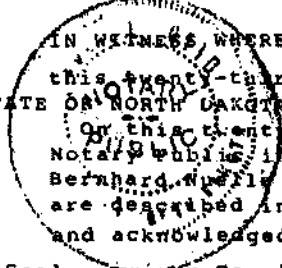
THIS ORDINANCE IS HEREBY ADOPTED EFFECTIVE THIS 23rd DAY OF June, 1987.

Bernhard Nuelle
CHAIRMAN, TOWNSHIP BOARD
Bernhard Nuelle

Gerald Karsky
CLERK, TOWNSHIP BOARD
Gerald Karsky

IN WITNESS WHEREOF, the above signed have set their hands and seals this twenty-third day of June 1987.

STATE OF NORTH DAKOTA - County of Cavalier



On this twenty-third day of June 1987, before me, Duane L. Otto, a Notary Public in and for said County and State, personally appeared Bernhard Nuelle and Gerald Karsky known to me to be the persons who are described in and who executed the within and foregoing instrument and acknowledged to me that they executed the same.

Seal My Commission expires June 20, 1988, Notary Public Cavalier Co

Duane L. Otto
Duane L. Otto

Introduction

- I. Authority: This ordinance is adopted under the authority granted in Chapter 58-03 of the North Dakota Code.
- II. Purpose: The purpose of this ordinance is to preserve the agricultural use of the land, promote the health, safety, morals, general welfare, and orderly development of Elgin Township in Cavalier County.
- III. Severability: If any provision or section of this ordinance is adjudged invalid by a court of competent jurisdiction, the remainder of the ordinance shall not be affected.
- IV. Repeal: All other ordinances or parts of ordinances of Elgin Township in conflict with this ordinance are hereby repealed.
- V. Title: This ordinance shall be known as "Zoning Ordinance of Elgin Township".
- VI. Effective Date: This ordinance shall become effective after a public hearing and adoption by the Elgin Township Board of Supervisors.

ARTICLE II

Definitions of Terms Used In This Ordinance

1. Definitions: For the purpose of this ordinance, the following definitions have been adopted:
 - A. Rules:
 1. Words used in the present shall include the future, the singular number shall include the plural.
 2. The word person includes a firm, partnership, association, corporation or individual.
 3. The word shall is mandatory.

H. List of Definitions:

Book M-39 Page 123

1. Agriculture: The use of land for agricultural purposes, including the necessary buildings or structures for farm or farm labor use. Agriculture shall include farming, dairying, pasturage, horticulture, animal and poultry husbandry, and accessory uses and buildings for packing, treating or storing produce, providing accessory uses are secondary to normal agricultural activities.
2. Accessory Use or Accessory Structure: A use or structure incidental and subordinate to the main use of the property and located on the same lot as the main use, such as a garage or tool shed.
3. Building: Any structure used for shelter or enclosure of persons, animals, or chattels.
4. Conditional Use: A use conditionally permitted in order to reduce any adverse effects on surrounding property.
5. Dwelling: A building or portion thereof occupied exclusively for residential purposes, but not including mobile recreational vehicles.
6. Dwelling, Farm: A single family dwelling or mobile home located on a farm which is occupied by the farm's owner or person employed thereon.
7. Dwelling, Non-Farm: A single family dwelling or mobile home located on a farm or otherwise of which the occupant does not derive at least 50 percent of his gross income from agricultural activities.
8. Family: A group of one or more persons occupying a single premise and living as a single housekeeping unit.
9. Farm: Any aggregate area operated by one person, family, partnership, corporation or joint venture for agriculture or farming purposes.
10. Feedlot: The use of land or buildings for the exclusive purpose of concentrated feeding or fattening of livestock for marketing. The application of feedlot regulations shall be limited to non-farm related enterprises.

11. Home Occupation: Any occupation (1) which is carried on solely by members of the family residing on the premise, (2) is clearly secondary to the use of the dwelling for residential purposes, (3) and does not create excess noise, traffic, or other disturbances. Book M-39 Page 124
12. Junk Yard: Any land or building used for commercial storage, sale or dismantling of obsolete vehicles, junk and other machinery.
13. Lot: A parcel of land sufficient to provide the yard requirements of the regulations.
14. Mobile Home: A mobile home is a dwelling unit designed for transport after construction. A recreational travel trailer is not to be considered a mobile home.
15. Non-Conforming Use: Any structure, land or building existing at time of adoption or amendment of this ordinance which does not conform to the provisions of the regulations.
16. Setback: The open space extending the full width of a lot between a building and a public right-of-way line, easement, or front property line.
17. Structural Alteration: Any change in the supporting members or any substantial change in the roof or exterior walls of a building.
18. Variance: The grant of relief from the requirements of the ordinance where it can be shown that due to unusual conditions of the property strict application of the regulations would result in undue hardship.

ARTICLE III

General Provisions

- I. Jurisdiction: The jurisdiction of this ordinance shall include all unincorporated areas of Elgin Township in Cavalier County.
- II. Compliance: Except as hereinafter provided, no building, structure, or land shall be erected, repaired or used except in conformance with these regulations.

- III. Agriculture Exempted: Nothing in this ordinance shall be applied for the purpose of preventing or restricting the use of land or buildings for agriculture or any of the normal incidents of agriculture.
- IV. Interpretation: In the interpretation and application of this ordinance, the provisions of this ordinance shall be held to the minimum requirements. Where this ordinance imposes a greater restriction than existing law, the provisions of this ordinance shall govern.
- V. Non-Conforming Uses:
1. Lawful, non-conforming uses of land or buildings existing at the date of adoption of these regulations may continue provided no structural alterations except for normal maintenance are made and such non-conforming uses shall be extended to occupy a greater area of land than occupied at the time of adoption.
 2. No building or structure where a non-conforming use has been discontinued for a period of 1 year or has changed to a permitted use shall again be devoted to a non-conforming use.
 3. A non-conforming structure destroyed or damaged less than 50 percent of its fair market value may be reconstructed within 1 year of such casualty. If damaged more than 50 percent of its fair market value, such building shall be reconstructed in conformance to those regulations.
 4. The provisions of this section shall not be applicable to conditional uses or any use made non-conforming by a change in district regulations.
- VI. Amendments: In accordance with Chapter 58-03, Section 58-03-13 of the North Dakota Century Code, the Board of Township Supervisors may from time to time amend the provisions of this ordinance. Such amendment shall not become effective until after a public hearing at which parties of interest and citizens shall have the opportunity to be heard. At least 15 days notice of the time and place shall be published in the official newspaper of the county. The description of any land within any zoning district, together with any restriction therein, or any amendment to the zoning ordinance, shall be filed with the Board of Township Supervisors.

ARTICLE IV

Book M-39 Page 126

District Regulations

- I. Establishment of District Regulations: For the purpose of these regulations, and only for those portions of the township which are subject to this ordinance, the township is divided into classes of districts, which are established as follows:

1. Agricultural
2. Residential Country Homes
3. Highway Commercial
4. Mobile Homes

- A. Zoning Map - The location and boundaries of the zoning districts are hereby established as shown on the map entitled "Zoning District Map", which accompanies, and is hereby made a part of the regulations.

1. Location of District Boundaries

- A) Where the district boundary lines on the Zoning District Map are indicated to follow highway, road, or railroad rights-of-way, such boundary lines shall be construed to be the centerline of said rights-of-way unless clearly shown to the contrary.
- B) Where any uncertainty exists as to the exact location on the zoning district boundary line, the zoning board shall determine the location of such boundary lines.

II. A - Agricultural District:

- A. Purpose: The "A" Agricultural District is established as a district in which the predominant use of land is for general agricultural uses. For the "A" Agricultural District, in promoting the general purposes of this ordinance the specific intent of this section is:
1. To encourage the continued use of land for agricultural uses;
 2. To prohibit scattered commercial and industrial uses of the land and to prohibit any other use which would interfere with an integrated and efficient development of the land;

3. To discourage any use, which because of its character or size, would create unusual requirements and costs of public services such as police and fire protection, water supply, and sewerage before such services can be systematically and adequately provided. Book M-39 F 12

B. Permitted Uses:

- (1) General farming operations including farm dwellings and agricultural buildings, nurseries and tree farms. Any shelter belts to be planted within 200 feet from the center line of roads or quarter section lines shall require a permit and may be approved.
- (2) Single family dwellings related to an individual farming operation.
- (3) Airports and heliports.
- (4) Public parks and other public buildings and public or quasi-public recreational facilities.
- (5) Storage of agricultural products and minor handling according to State Health Department regulations
- (6) Home occupations and accessory uses customarily incident to the uses permitted in this district but not including feedlots or other concentrated animal feeding operations.

C. Conditional Uses:

1. The following conditional uses and their accessory uses are permitted, subject to the stipulation of the zoning board. Non-farm dwellings, schools, sanitary disposal facilities including landfills, mining or gravel removal, feedlots, wrecking, salvage or junk yards, radio or TV towers, utility lines and sub-stations in accordance with the appropriate provisions of this ordinance, parks or open land recreational use, animal hospital, fire station, churches and cemeteries, grain cleaning plants, grain elevators and grain storage facilities, Anhydrous and fertilizer plants provided no dwelling is within 660 yards.
2. Other uses of the same nature that are classed as those listed above in "Permitted Uses" section, which in the opinion of the Board of Adjustment as evidenced by a resolution of record, are not obnoxious or detrimental to the health, safety, morals, or the general welfare of the area than those uses listed as permitted uses.

D. Dimensional Standards:

1. Setbacks:

A. 200 feet from all section lines, 1/4 quarter section lines and the centerlines of township and county roads.

B. 250 feet from the centerline of all state highways.

2. Lot Size - 3 1/2 acres

3. Lot Width - 350 feet

4. Side yard - 40 feet

E. No new dwellings shall be located within 660 yards of an existing anhydrous or fertilizer plant.

III. Residential Country Homes District

A. Purpose: The Residential Country Homes District is established as a district in which the predominant use of land is for low-density residential and limited agricultural use. For this district, in promoting the general purposes of this section, the specific intent of this section is:

1. To encourage the continued use of the land for low-density residential and limited agricultural uses;
2. to prohibit commercial and industrial uses of the land; and
3. to discourage any use, which because of its character or size, would create unusual requirements and costs for public services.

B. Permitted Uses:

1. Single family dwellings, schools, and churches.
2. Radio and TV towers, utility lines and sub-stations, water pump stations, and sewage lift stations.
3. Public parks and other public buildings and public recreation facilities and playgrounds.

4. Truck farming such as commercial flower growing, fruit growing tree and plant nursery, truck gardening, and greenhouses.
5. General farming operations including farm dwellings and agricultural buildings except for feedlots and other concentrated animal feeding operations.
6. Home occupations and accessory uses customarily incident to the uses permitted in this district but not included feedlots or other concentrated animal feeding operations.

C. Conditional Uses:

1. Private riding stables provided that animals shall be used for private use only. No animal, animal stable, barn or shelter shall be located within 100 feet of any neighboring residence or structure. One horse shall be permitted on any premises which contains at least three and one half (3 1/2) acres and additional horses shall be allowed at the rate of one (1) horse for every additional three (3) acres of property owned.
2. Other uses of the same nature or class as those listed above which in the opinion of the Board, as evidenced by a resolution of record, are not more obnoxious or detrimental to the welfare of the area than those listed in above permitted uses.

D. Dimensional Standards:

1. Front Yard: Each lot shall have a front yard not less than 40 feet in depth on interior subdivision streets or roads. Except when fronting a county, township, state road or quarter section line, then the setbacks shall not be less than the following distance outlined below from the centerline of such roadways fronting the property:

<u>State Highway</u>	<u>All Other Roads</u>	<u>1/4 Section Lines</u>
250 feet	200 feet	200 feet

2. Side Yard: Each lot shall have two (2) side yards, one on each side of the principal and accessory buildings of 40 feet.
3. Rear Yards: Each lot shall have a rear yard depth of not less than 75 feet.

4. Lot area: Each County Home dwelling hereafter erected shall be located on a lot having a minimum area of 3 1/2 acres. Book M-39 Page 130
5. Lot Width: Each lot shall have a minimum width of 350 feet.
6. Height Limits: No single-family dwelling shall exceed 2 1/2 stories, nor shall it exceed 35 feet in height. No principal building for any other permitted use shall exceed 4 stories, nor shall it exceed 50 feet in height, not including radio or TV aerials.
7. Area Coverage: Principal and accessory buildings shall not occupy more than 40 percent of the area of the lot.

IV

Highway Commercial District

- A. Purpose: The Highway Commercial District is intended for commercial activities which might be incompatible with uses in a central business district by reason of traffic considerations, marketing characteristics, and area requirements and other characteristics inherent in these uses. Such commercial activities normally require a considerable amount of on-site storage or parking and would otherwise cause conflicts if located in a downtown central business district.
- B. Permitted Uses: Automobile repair garages, auto sales, farm machinery repair and sales, building supply yards, wholesaling of products, commercial garages and warehousing. Commercial recreation, including bowling alleys, dance halls and skating rinks but not including residential dwellings.
- C. Conditional Uses: Enterprises or businesses of the same nature or class as those listed in the above section which in the opinion of the Board, as evidenced by a resolution of record, are not more obnoxious or detrimental to the welfare of the area than those listed as permitted uses. Other types of retail sales and services shall be encouraged to locate in a city's business district.
- D. Dimensional Standards:
1. Front Yard: Each lot shall have a front yard not less than 200 feet from the centerline of a state highway and 200 feet from the centerline of all other roads and 1/4 section lines.

2. Side Yards: Each lot shall have two (2) side yards, one on each side of the principal and accessory buildings of 20 feet.
3. Rear Yards: Thirty feet.
4. Lot size: 3 1/2 acres.
5. Lot width: 350 feet.
6. Height Limitations: No structure shall exceed three (3) stories or forty-five (45) feet not including radio or TV aerials.

E. Intensity of Use Regulations:

1. A buffer strip, which is approved by the Board, shall provide a sight and sound barrier when a commercial use is abutting a residential district. The buffer strip shall be adequately maintained by the property owner.

V. -MHP - Mobile Home Park District

- A. Purpose: The purpose of MHP Mobile Home Park District is to regulate the development of mobile home park (s) within the township.
- B. Permitted Uses: Mobile homes, accessory usages, and home occupations.
- C. Conditional Uses: Office for park manager, commercial business which directly serves the residents of the park, such as a 7-11 store.
- D. Dimensional Standards: The park must contain a minimum of three (3) fully developed lots, be at least five (5) acres in size and meet all rules and regulations of North Dakota Regulatory Agencies and Departments relating to mobile homes.

ARTICLE V

Special Provisions

- I. Utilities: Electric power, electrical transmission lines, natural gas pipe lines, petroleum products pipe lines.

- A. New utilities, electric power lines, electric transmission lines, natural gas pipe lines, petroleum products pipe lines shall be considered as a conditional use, and as such shall conform to all requirements put upon them by the Township Zoning Board.
 - B. The Township Zoning Board, before authorizing the issuance of a permit, shall determine that the proposed utilities or lines do not interfere with: 1) the reasonable established future plans of adjoining townships, 2) the orderly development and safety of the township. If any modifications of said provisions appear necessary, such modification shall be noted as a limitation on the zoning permit.
 - C. All pipe lines, natural gas, petroleum lines, etc., shall be placed deep enough as not to constitute a hazard to normal farming operations.
 - D. Excavations for tunneling of any pipe lines under roads, farm drains, group drains and local drains shall be done by the company owning or leasing said pipe lines and cost of said excavation to be borne by said company.
- II. Sanitary Regulations: All agricultural, residential, business or industrial structures shall conform to the North Dakota health regulations or District Health regulations as it refers to wells, irrigation and septic and sanitary systems.
- III. Shelter Belts: No shelter belts or major tree planting shall be established closer than:
- 1) 200 feet from all section lines and quarter section lines and the centerlines of all township and county roads.
 - 2) 250 feet from the centerline of all state highways.
 - 3) The Township Board may by a Resolution of Record agree with a request from consenting landowners to the placement of a shelterbelt on a mutually held property line.
- IV. Excavation and mining of sand, gravel, rock or stone by any commercial mineral operation.
- 1. Evidence of written agreement between the applicant and property owner that excavation or processing shall not take place within 50 feet of an adjacent property line or within five hundred (500) feet of an existing residence.

133

2. Written evidence of a reclamation agreement with the surface owner.
3. A road maintenance contract has been negotiated with the township stating responsibilities for maintaining the roads which are used as haul routes by the person removing the gravel.
4. The applicant shall conform to all requirements regarding preservation, removal or relocation of historical or archaeological artifacts.

V. Residential Development: The following regulations shall be applied to the construction of all dwelling units in the agricultural district.

- A. No new dwelling shall be located within 660 yards of an existing anhydrous or fertilizer plant.

ARTICLE VI

Administration and Enforcement

I. Zoning Administrator: The Zoning Administrator shall be appointed by the Zoning Board. Duties of the Zoning Administrator shall include:

- A. Issuance of all permits;
- B. Conduct inspections of buildings;
- C. Maintain records of the regulations and permits;
- D. Transmit to the zoning board all applications for appeals, variances, or conditional use permits and all applications for amendments to the board of township supervisors.

II. Township Zoning Board: Membership for the board shall consist of the board of township supervisors plus two (2) representatives from the incorporated communities within the township. Duties of the board shall include:

1. Establishment of rules, regulations and procedures for the purpose of administering the zoning ordinance.
2. Assist the zoning administrator in conducting inspections of buildings and administering the zoning ordinance.
3. Hear and decide appeals where it is adjudged by the applicant that an error in judgement has been made by the zoning administrator.

4. Review and study from time to time the provisions of the regulations.

5. The zoning board shall serve as an advisory to the township board. The township board shall have final review of all zoning board decisions.

A. Appeals: Any person aggrieved by the provisions of these regulations or by any order of determination of the zoning administrator may within 60 days of such action, petition for a hearing to the township zoning board. Such appeal shall be in writing and shall specify in detail the grounds for the appeal.

1. Procedures:

a. Appeals shall be filed with the zoning administrator.

b. Within 30 days of filing, the township zoning board shall fix a date for a hearing.

c. Notice in writing shall be given to the petitioner at least 5 days prior to the hearing.

d. Within 15 days after the hearing, the township Zoning Board shall take action and shall mail by registered mail a copy of its order to the petitioner.

B. Variances: As used in this ordinance, a variance is authorized only for height, area, or size of structures or yards.

No variance shall be authorized unless the township zoning board finds beyond a reasonable doubt that all of the following conditions exist:

1. That there are exceptional or extra-ordinary circumstances applying to the property in question or to the intended use of the property that do not apply generally to other properties or class or use in the same zoning district.

2. That such variance is necessary for the preservation and enjoyment of a substantial property right possessed by other properties in the same zoning district and in the vicinity.

3. That the authorization of such variance will not be of substantial detriment to adjacent property and will not materially impair the purpose of the regulations or the public interest.
 4. The owner cannot otherwise obtain a reasonable return on this property.
 5. The hardship is not self-created.
 6. The variance request is the minimum necessary to permit a reasonable use of the land.
- C. Conditional Uses: No permit pertaining to the conditional use of land or buildings shall be issued unless:
1. An application for a conditional use permit has been submitted to the township zoning board for review.
 2. The board has held a public hearing.
 3. The board has made written findings certifying compliance with rules governing conditional uses and that, where applicable, satisfactory provision for the following has been made:
 - a. Entrance and exit to property with reference to public safety, traffic flow and convenience.
 - b. Parking and loading requirements of the specific use.
 - c. General compatibility with the surrounding property with due consideration for noise, odor or other adverse effects.
 - d. Required open space and yards.
 - e. Any other applicable circumstances that may need further attention.

- III. Permits: No structure or land use for residential, commercial, or industrial purposes including accessory uses, shall be built, altered or moved until a permit has been obtained from the zoning administrator. No permit shall be required for maintenance or repair of any building which does not alter the plan of the structure.

A. No Building Permit Without Approved Access

1. No building permit shall be issued until the Zoning Administrator has approved in writing an approach permit for access to the lot upon which the permit is requested.

2. No building permit or approach permit may be issued unless and until all roadways which are necessary for access to the property for which a permit is sought are constructed to County standards and approved in writing by the zoning administrator.

B. No Electric Power Without Proper Permits

It shall be unlawful for any association, company, person, firm, cooperative or corporation to use or permit to use, or to supply electrical current for electrical wiring for lights, heat or power in any building or structure within the zoned area of the townships, unless the required permits and approval of such building, structure, and electrical circuits have been issued by the Township Board or by an authorized representative thereof. The Certificate of Approval shall be attached to the electrical wiring circuits prior to the installation of the electrical meter.

IV. Violations of Regulations: A violation of this ordinance is an offense punishable by a fine not to exceed \$200.00 for each and every day that any violator fails to comply with the provisions of these regulations. All fines for violation shall be paid to the Township Clerk and shall be credited to the general fund of the township. In addition to other remedies, the townships may institute any appropriate actions or proceeding in accordance with Section 58-03-14 of the North Dakota Century Code.

Whenever a violation of this ordinance occurs, any person may file a complaint in regard thereto. All such complaints shall be filed with the Zoning Administrator who shall investigate such violation and report to the Board of Township Supervisors for appropriate action.

V. Fees: For the purpose of administering this ordinance, fees may be instituted by the board of township supervisors.

Document No. 204793

STATE OF NORTH DAKOTA }
County of Cavalier } ss.

I hereby certify that the within instrument was filed for record in this office on

April 14, 1992
at 3:30 o'clock P. M. and was duly
recorded in Book M-39 of
Miscellaneous Page 121

Vicki J. Lubitz
REGISTER OF DEEDS



*Chg 39. R1 Box 29
E. L. Townshend
Lansford, ND 58209*

PREAMBLE

AN ORDINANCE ESTABLISHING COMPREHENSIVE ZONING REGULATIONS FOR EASBY TOWNSHIP

THE INTENT OF WHICH IS TO:

Promote the health, safety morals, and general welfare of the township people and the orderly development of township lands;

Preserve and maintain agricultural lands for farm use;

Encourage non-farm growth to locate within existing communities or community-service district,

Promote a healthy and visually attractive environment,

Promote the development of utility corridors which utilize the least productive agricultural land,

Discourage development which exceeds the carrying capacity of the land, air, or water resources,

Discourage any development which places an excessive financial burden on the township or county government.

THIS ORDINANCE IS HEREBY ADOPTED EFFECTIVE THIS 23 DAY OF April, 1987.

Dennis V. Olson
CHAIRMAN, TOWNSHIP BOARD

Larry Nelson
CLERK, TOWNSHIP BOARD



Subscribed and sworn to before me this 23rd day of April 1987

RAY A. MARCHELL
Notary Public, STATE OF NORTH CAROLINA
My Commission Expires SEPT. 14, 1991

Jay A. Marchell
Notary Public
Cavalier Co.

Easby 160-59

ARTICLE I

Introduction

- I. Authority: This ordinance is adopted under the authority granted in Chapter 58-03 of the North Dakota Code.
- II. Purpose: The purpose of this ordinance is to preserve the agricultural use of the land, promote the health, safety, morals, general welfare, and orderly development of Easby Township in Cavalier County.
- III. Severability: If any provision or section of this ordinance is adjudged invalid by a court of competent jurisdiction, the remainder of the ordinance shall not be affected.
- IV. Repeal: All other ordinances or parts of ordinances of Easby Township in conflict with this ordinance are hereby repealed.
- V. Title: This ordinance shall be known as "Zoning Ordinance of Easby Townships".
- VI. Effective Date: This ordinance shall become effective after a public hearing and adoption by the Easby Township Board of Supervisors.

ARTICLE II

Definitions of Terms Used In This Ordinance

1. Definitions: For the purpose of this ordinance, the following definitions have been adopted:
 - A. Rules:
 1. Words used in the present shall include the future, the singular number shall include the plural.
 2. The word person includes a firm, partnership, association, corporation or individual.
 3. The word shall is mandatory.

B. List of Definitions:

BOOK M-34 PAGE 14

1. Agriculture: The use of land for agricultural purposes, including the necessary buildings or structures for farm or farm labor use. Agriculture shall include farming, dairying, pasturage, horticulture, animal and poultry husbandry, and accessory uses and buildings for packing, treating or storing produce, providing accessory uses are secondary to normal agricultural activities.
2. Accessory Use or Accessory Structure: A use or structure incidental and subordinate to the main use of the property and located on the same lot as the main use, such as a garage or tool shed.
3. Building: Any structure used for shelter or enclosure of persons, animals, or chattels.
4. Conditional Use: A use conditionally permitted in order to reduce any adverse effects on surrounding property.
5. Dwelling: building or portion thereof occupied exclusively for residential purposes, but not including mobile recreational vehicles.
6. Dwelling, Farm: A single family dwelling or mobile home located on a farm which is occupied by the farm's owner or person employed thereon.
7. Dwelling, Non-Farm: A single family dwelling or mobile home located on a farm or otherwise of which the occupant does not derive at least 50 percent of his gross from agricultural activities.
8. Family: A group of one or more persons occupying a single premise and living as a single housekeeping unit.
9. Farm: Any aggregate area operated by one person, family, partnership, corporation or joint venture for agriculture or farming purposes.
10. Feedlot: The use of land or buildings for the exclusive purpose of concentrated feeding or fattening of livestock for marketing. The application of feedlot regulations shall be limited to non-farm related enterprises.

- 11. Home Occupation: Any occupation (1) which is carried on solely by members of the family residing on the premise, (2) is clearly secondary to the use of the dwelling for residential purposes, (3) and does not create excess noise, traffic, or other disturbances.
- 12. Junk Yard: Any land or building used for the storage, sale or dismantling of obsolete vehicles, junk and other machinery.
- 13. Lot: A parcel of land sufficient to provide the yard requirements of the regulations.
- 14. Mobile Home: A mobile home is a dwelling unit designed for transport after construction. A recreational travel trailer is not to be considered a mobile home.
- 15. Non-Conforming Use: Any structure, land or building existing at time of adoption or amendment of this ordinance which does not conform to the provisions of the regulations.
- 16. Setback: The open space extending the full width of a lot between a building and a public right-of-way line, easement, or front property line.
- 17. Structural Alteration: Any change in the supporting members or any substantial change in the roof or exterior walls of a building.
- 18. Variance: The grant of relief from the requirements of the ordinance where it can be shown that due to unusual conditions of the property strict application of the regulations would result in undue hardship

ARTICLE III

General Provisions

- I. Jurisdiction: The jurisdiction of this ordinance shall include all unincorporated areas of Easby Township in Cavalier County.
- II. Compliance: Except as hereinafter provided, no building, structure, or land shall be erected, repaired or used except in conformance with these regulations.

- III. Agriculture Exempted: Nothing in this ordinance shall be applied for the purpose of preventing or restricting the use of land or buildings for agriculture or any of the normal incidents of agriculture.
- IV. Interpretation: In the interpretation and application of this ordinance, the provisions of this ordinance shall be held to the minimum requirements. Where this ordinance imposes a greater restriction than existing law, the provisions of this ordinance shall govern.
- V. Non-Conforming Uses:
1. Lawful, non-conforming uses of land or buildings existing at the date of adoption of these regulations may continue provided no structural alterations except for normal maintenance are made and such non-conforming uses shall be extended to occupy a greater area of land than occupied at the time of adoption.
 2. No building or structure where a non-conforming use has been discontinued for a period of 1 year or has changed to a permitted use shall again be devoted to a non-conforming use.
 3. A non-conforming structure destroyed or damaged less than 50 percent of its fair market value may be reconstructed within 1 year of such casualty. If damaged more than 50 percent of its fair market value, such building shall be reconstructed in conformance to those regulations.
 4. The provisions of this section shall not be applicable to conditional uses or any use made non-conforming by a change in district regulations.
- VI. Amendments: In accordance with Chapter 58-03, Section 58-03-13 of the North Dakota Century Code, the Board of Township Supervisors may from time to time amend the provisions of this ordinance. Such amendment shall not become effective until after a public hearing at which parties of interest and citizens shall have the opportunity to be heard. At least 15 days notice of the time and place shall be published in the official newspaper of the county. The description of any land within any zoning district, together with any restriction therein, or any amendment to the zoning ordinance, shall be filed with the Board of Township Supervisors.

District Regulations

- I. Establishment of District Regulations: For the purpose of these regulations, the entire area of Easby Township is zoned agricultural.
 - A. Zoning Map - The location and boundaries of the zoning districts are hereby established as shown on the map entitled "Zoning District Map", which accompanies, and is hereby made a part of the regulations.
 1. Location of District Boundaries
 - A) Where the district boundary lines on the Zoning District Map are indicated to follow highway, road, or railroad rights-of-way, such boundary lines shall be construed to be the centerline of said rights-of-way unless clearly shown to the contrary.
 - B) Where any uncertainty exists as to the exact location on the zoning district boundary line, the Zoning Board shall determine the location of such boundary lines.
- II. A - Agricultural District:
 - A. Purpose: The "A" Agricultural District is established as a district in which the predominant use of land is for general agricultural uses. For the "A" Agricultural District, in promoting the general purposes of this ordinance the specific intent of this section is:
 1. To encourage the continued use of land for agricultural uses;
 2. To prohibit scattered commercial and industrial uses of the land and to prohibit any other use which would interfere with an integrated and efficient development of the land;
 3. To discourage any use, which because of its character or size, would create unusual requirements and costs of public services such as police and fire protection, water supply, and sewerage before such services can be systematically and adequately provided.

B. Permitted Uses:

- (1) General farming operations including farm dwellings and agricultural buildings, nurseries and tree farms. Any shelter belts to be planted within 150 feet from the center line of roads shall require a permit and may be approved.
- (2) Single family dwellings related to an individual farming operation.
- (3) Airports and heliports.
- (4) Public parks and other public buildings and public or quasi-public recreational facilities.
- (5) Storage of agricultural products and minor handling according to State Health Department regulations
- (6) Home occupations and accessory uses customarily incident to the uses permitted in this district but not including feedlots or other concentrated animal feeding operations.

C. Conditional Uses: The following conditional uses and their accessory uses are permitted subject to the stipulation of the zoning board. Non-farm dwellings, schools, sanitary disposal facilities including landfills, mining or gravel removal, feedlots, wrecking, salvage or junk yards, radio or TV towers, utility lines and sub-stations in accordance with the appropriate provisions of this ordinance, parks or open land recreational use, animal hospital, fire station, churches and cemeteries.

D. Dimensional Standards:**1. Setbacks:**

- A. 150 feet from all section lines and the centerlines of township and county roads.
- B. 250 feet from the centerline of all state highways.

III. AS - Agricultural Service Center District:

A. Purpose: To establish and preserve areas for a general purpose land use district for rural unincorporated service centers. An Agricultural Service Center District serves to recognize these unincorporated villages and provides for a continuation with limited expansion into the adjacent countryside.

B. Permitted Uses: Agriculturally oriented commercial uses, one and two family detached dwellings, mobile homes affixed to a permanent foundation or concrete slab, home occupations, office service or retail establishments, places of amusement, warehousing and indoor storage facilities, churches, parks and playgrounds, community buildings and school, accessory uses to the permitted uses.

C. Conditional Uses: The following conditional uses and their accessory uses are permitted subject to the stipulation of the zoning board. Sanitary disposal facilities for use by community residents only, agriculturally oriented industrial uses, mobile home parks.

D. Other uses of the same nature that are classed as those listed above in "Permitted Uses" section which in the opinion of the Board of Adjustment as evidenced by a resolution of record, are not obnoxious or detrimental to the health, safety, morals, or the general welfare of the area than those uses listed as permitted uses.

E. Dimensional Standards:

1. Setbacks:

- | | |
|----------------|---------|
| a) Residential | 30 feet |
| b) Commercial | None |
| c) Industrial | 40 feet |

2. Yards:

- | | |
|----------------|--------------------|
| a) Side | |
| 1. Residential | 10 |
| 2. Commercial | None |
| 3. Industrial | Height of building |

3. Lots:

a) Residential:

1. Size

- | |
|---|
| a) One acre without either public sewer or water. |
| b) 7,500 square feet with either public sewer or water. |

2. Width:

- | |
|--|
| a) 100 feet without either public sewer or water |
| b) 75 feet with either sewer or water. |

3. Area Coverage - Principle and accessory buildings shall not occupy more than 40 percent of the area of the lot.

ARTICLE V

Special Provisions

- I. Utilities: Electric power, electrical transmission lines, natural gas pipe lines, petroleum products pipe lines.
- A. New utilities, electric power lines, electric transmission lines, natural gas pipe lines, petroleum products pipe lines shall be considered as a conditional use, and as such shall conform to all requirements put upon them by the Township Zoning Board.
 - B. The Township Zoning Board, before authorizing the issuance of a permit, shall determine that the proposed utilities or lines do not interfere with: 1) the reasonable established future plans of adjoining townships, 2) the orderly development and safety of the township. If any modifications of said provisions appear necessary, such modification shall be noted as a limitation on the zoning permit.
 - C. All pipe lines, natural gas, petroleum lines, etc., shall be placed deep enough as not to constitute a hazard to normal farming operations.
 - D. Excavations for tunneling of any pipe lines under roads, farm drains, group drains and local drains shall be done by the company owning or leasing said pipe lines and cost of said excavation to be borne by said company.
- II. Sanitary Regulations: All agricultural, industrial structures shall conform to the North Dakota health regulations or District Health regulations as it refers to wells, irrigation and septic and sanitary systems.
- III. Shelter Belts: No shelter belts or major tree planting shall be established closer than:
- a) 150 feet from all section lines and greater section lines and the centerlines of all township and county roads.
 - b) 250 feet from the centerline of all state highways.

c) The township board may be a Resolution of Record agree with a request from consenting landowners to the placement of a shelterbelt on a mutually held property line.

IV. Excavation and mining of sand, gravel, rock or stone by any commercial mineral operation.

- 1. Evidence of written agreement between the applicant and property owner that excavation or processing shall not take place within three hundred (300) feet of any township roads.
- 2. Written evidence of a reclamation agreement with the surface owner.
- 3. A road maintenance contract has been negotiated with the township stating responsibilities for maintaining the roads which are used as haul routes by the person removing the gravel.
- 4. The applicant shall conform to all requirements regarding preservation, removal or relocation of historical or archaeological artifacts.

V. Residential Development: The following regulations shall be applied to the construction of non-farm dwelling units:

A. Density:

There shall be no more than one (1) non-farm dwelling per quarter section (160 acres).

B. Dimensional Standards:

1. Setbacks:

- a) 150 feet from all section lines and the centerlines of all township and county roads.
- b) 250 feet from the centerlines of all state highways.

2. Lot Size - 2 acres

3. Lot Width - 350 Feet

4. Side Yard - 40 Feet

C. No new dwellings shall be located within 660 yards from an existing anhydrous or fertilizer plant.

Administration and Enforcement

- I. Zoning Administrator: The Zoning Administrator shall be appointed by the Zoning Board. Duties of the Zoning Administrator shall include:
 - A. Issuance of all permits;
 - B. Conduct inspections of buildings;
 - C. Maintain records of the regulations and permits;
 - D. Transmit to the Zoning Board all applications for appeals, variances, or conditional use permits and all applications for amendments to the Board of Township Supervisors.

- II. Township Zoning Board: Membership for the board shall consist of the Board of Township Supervisors plus two (2) representatives from the incorporated communities within the township. Duties of the board shall include:
 1. Establishment of rules, regulations and procedures for the purpose of administering the zoning ordinance.
 2. Assist the zoning administrator in conducting inspections of buildings and administering the zoning ordinance.
 3. Hear and decide appeals where it is adjudged by the applicant that an error in judgement has been made by the zoning administrator.
 4. Review and study from time to time the provisions of the regulations.
 5. The zoning board shall serve as an advisory to the township board. The township board shall have final review of all zoning board decisions.
 - A. Appeals: Any person aggrieved by the provisions of these regulations or by any order of determination of the zoning administrator may within 60 days of such action, petition for a hearing to the township zoning board. Such appeal shall be in writing and shall specify in detail the grounds for the appeal.
 1. Procedures:
 - a. Appeals shall be filed with the zoning administrator.

- b. Within 30 days of filing, the township zoning board shall fix a date for a hearing.
- c. Notice in writing shall be given to the petitioner at least 5 days prior to the hearing.
- d. Within 15 days after the hearing, the Township Zoning Board shall take action and shall mail by registered mail a copy of its order to the

B. Variances: As used in this ordinance, a variance is authorized only for height, area, or size of structures or yards.

No variance shall be authorized unless the Township Zoning Board finds beyond a reasonable doubt that all of the following conditions exist:

- 1. That there are exceptional or extra-ordinary circumstances applying to the property in question or to the intended use of the property that do not apply generally to other properties or class or use in the same zoning district.
- 2. That such variance is necessary for the preservation and enjoyment of a substantial property right possessed by other properties in the same zoning district and in the vicinity.
- 3. That the authorization of such variance will not be of substantial detriment to adjacent property and will not materially impair the purpose of the regulations or the public interest.
- 4. The owner cannot otherwise obtain a reasonable return on this property.
- 5. The hardship is not self-created.
- 6. The variance request is the minimum necessary to permit a reasonable use of the land.

C. Conditional Uses: No permit pertaining to the conditional use of land or buildings shall be issued unless:

- 1. An application for a conditional use permit has been submitted to the Township Zoning Board for review.
- 2. The board has held a public hearing.

3. The board has made written findings certifying compliance with rules governing conditional uses and that, where applicable, satisfactory provision for the following has been made:
 - a. Entrance and exit to property with reference to public safety, traffic flow and convenience.
 - b. Parking and loading requirements of the specific use.
 - c. General compatibility with the surrounding property with due consideration for noise, order or other adverse effects.
 - d. Required open space and yards.
 - e. Any other applicable circumstances that may need further attention.

III. Permits: No structure or land use for residential, commercial, or industrial purposes including accessory uses, shall be built, altered or moved until a permit has been obtained from the Zoning Administrator. No permit shall be required for maintenance or repair of any building which does not alter the plan of the structure.

A. No Building Permit Without Approval Access

1. No building permit shall be issued until the Zoning Administrator has approved in writing an approach permit for access to the lot upon which the permit is requested.
2. No building permit or approach permit may be issued unless and until all roadways which are necessary for access to the property for which a permit is sought are constructed to County standards and approved in writing by the Zoning Administrator.

B. No Electric Power Without Proper Permits

It shall be unlawful for any association, company, person, firm, cooperative or corporation to use or permit to use, or to supply electrical current for electrical wiring for lights, heat or power in any building or structure within the zoned area of the township, unless the required permits and approval of such building, structure, and electrical circuits have been issued by the Township Board or by an authorized representative thereof. The Certificate of Approval shall be attached to the electrical wiring circuits prior to the installation of the electrical meter.

- IV. Violations of Regulations: A violation of this ordinance is an offense punishable by a fine not to exceed \$200.00 for each and every day that any violator fails to comply with the provisions of these regulations. All fines for violation shall be paid to the Township Clerk and shall be credited to the general fund of the township. In addition to other remedies, the township may institute any appropriate actions or proceedings in accordance with Section 58-03-14 of the North Dakota Century Code.

Whenever a violation of this ordinance occurs, any person may file a complaint in regard thereto. All such complaints shall be filed with the Zoning Administration who shall investigate such violation and report to the Board of Township Supervisors for appropriate action.

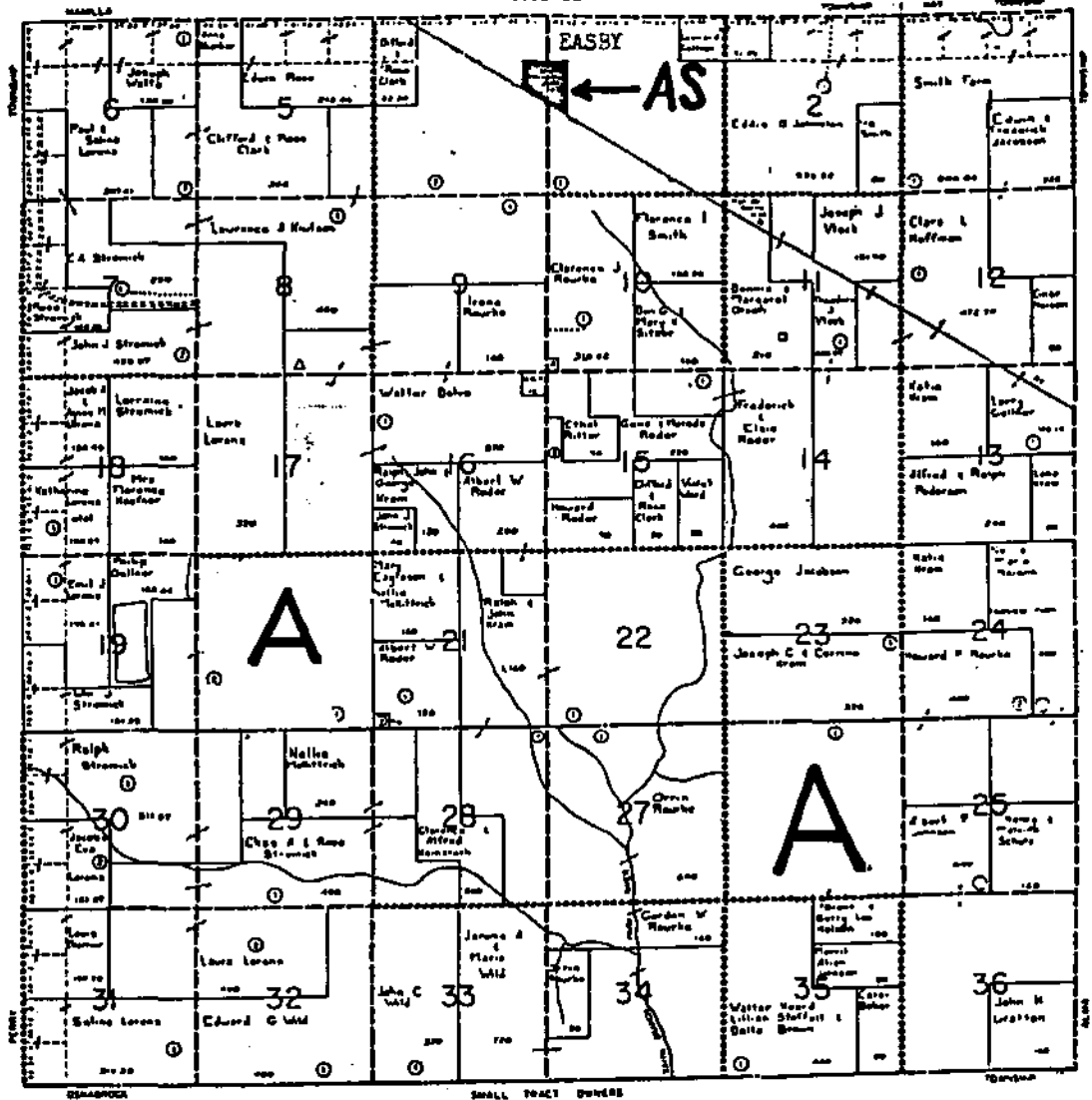
- V. Fees: For the purpose of administering this ordinance, fees may be instituted by the board of township supervisors.

EASBY

TOWNSHIP 160 N

CODE - E8

RANGE 59 W



Zoning Districts

Zoning Commission Public Hearing: 2 April 1987
 Township Board Public Hearing: 16 April 1987

A...Agricultural
 AS...Agricultural Service Center

Adopted:

OS 3041 48 . 2088

BOOK M-34 PAGE 27

Q4.
35.00
Yelicio W. Rowker
R.R. 1
Dumfries, N.D. 58269

Document No. 196948

STATE OF NORTH DAKOTA }
County of Cavalier } st.

I hereby certify that the within instrument was filed for record in this office on

May 12, 1987

at 2:00 o'clock P.M. and was duly recorded in Book M-34 of Miscellaneous on Page 12

Alice Morrison
REGISTER OF DEEDS



AN ORDINANCE ESTABLISHING COMPREHENSIVE ZONING REGULATIONS FOR MANILLA TOWNSHIP

THE INTENT OF WHICH IS TO:

Promote the health, safety morals, and general welfare of the township people and the orderly development of township lands;

Preserve and maintain agricultural lands for farm use;

Encourage non-farm growth to locate within existing communities or community-service district,

Promote a healthy and visually attractive environment,

Promote the development of utility corridors which utilize the least productive agricultural land,

Regulate development in the drainage basin so as to reduce flood damage and protect stream flows,

Discourage development which exceeds the carrying capacity of the land, air, or water resources,

Discourage any development which places an excessive financial burden on the township or county government.

THIS ORDINANCE IS HEREBY ADOPTED EFFECTIVE THIS 2nd DAY OF April, 1987.

Clay Simon
CHAIRMAN, TOWNSHIP BOARD

Thomas W. Alt
CLERK, TOWNSHIP BOARD

Subscribed and sworn to before me this 19th day of October, 1987.



Gail Pearson
Notary Public, North Dakota

My Commission Expires:

GAIL PEARSON
Notary Public, STATE OF NORTH DAKOTA
My Commission Expires JAN. 20, 1993

Manilla
161-59

Introduction

- I. Authority: This ordinance is adopted under the authority granted in Chapter 58-03 of the North Dakota Code.
- II. Purpose: The purpose of this ordinance is to preserve the agricultural use of the land, promote the health, safety, morals, general welfare, and orderly development of Manilla Township in Cavalier County.
- III. Severability: If any provision or section of this ordinance is adjudged invalid by a court of competent jurisdiction, the remainder of the ordinance shall not be affected.
- IV. Repeal: All other ordinances or parts of ordinances of Manilla Township in conflict with this ordinance are hereby repealed.
- V. Title: This ordinance shall be known as "Zoning Ordinance of Manilla Township".
- VI. Effective Date: This ordinance shall become effective after a public hearing and adoption by the Manilla Township Board of Supervisors.

ARTICLE II

Definitions of Terms Used In This Ordinance

1. Definitions: For the purpose of this ordinance, the following definitions have been adopted:
 - A. Rules:
 1. Words used in the present shall include the future, the singular number shall include the plural.
 2. The word person includes a firm, partnership, association, corporation or individual.
 3. The word shall is mandatory.

B. List of Definitions:

1. Agriculture: The use of land for agricultural purposes, including the necessary buildings or structures for farm or farm labor use. Agriculture shall include farming, dairying, pasturage, horticulture, animal and poultry husbandry, and accessory uses and buildings for packing, treating or storing produce, providing accessory uses are secondary to normal agricultural activities.
2. Accessory Use or Accessory Structure: A use or structure incidental and subordinate to the main use of the property and located on the same lot as the main use, such as a garage or tool shed.
3. Building: Any structure used for shelter or enclosure or persons, animals, or chattels.
4. Conditional Use: A use conditionally permitted in order to reduce any adverse effects on surrounding property.
5. Dwelling: A building or portion thereof occupied exclusively for residential purposes, but not including mobile recreational vehicles.
6. Dwelling, Farm: A single family dwelling or mobile home located on a farm which is occupied by the farm's owner or person employed thereon.
7. Dwelling, Non-Farm: A single family dwelling or mobile home located on a farm or otherwise of which the occupant does not derive at least 50 percent of his gross income from agricultural activities.
8. Family: A group of one or more persons occupying a single premise and living as a single housekeeping unit.
9. Farm: Any aggregate area operated by one person, family, partnership, corporation or joint venture for agriculture or farming purposes.
10. Feedlot: The use of land or buildings for the exclusive purpose of concentrated feeding or fattening of livestock for marketing. The application of feedlot regulations shall be limited to non-farm related enterprises.

11. Home Occupation: Any occupation (1) which is carried on solely by members of the family residing on the premise, (2) is clearly secondary to the use of the dwelling for residential purposes, (3) and does not create excess noise, traffic, or other disturbances.
12. Junk Yard: Any land or building used for commercial storage, sale or dismantling of obsolete vehicles, junk and other machinery.
13. Lot: A parcel of land sufficient to provide the yard requirements of the regulations.
14. Mobile Home: A mobile home is a dwelling unit designed for transport after construction. A recreational travel trailer is not to be considered a mobile home.
15. Non-Conforming Use: Any structure, land or building existing at time of adoption or amendment of this ordinance which does not conform to the provisions of the regulations.
16. Setback: The open space extending the full width of a lot between a building and a public right-of-way line, easement, or front property line.
17. Structural Alteration: Any change in the supporting members or any substantial change in the roof or exterior walls of a building.
18. Variance: The grant of relief from the requirements of the ordinance where it can be shown that due to unusual conditions of the property strict application of the regulations would result in undue hardship.

ARTICLE III

General Provisions

- I. Jurisdiction: The jurisdiction of this ordinance shall include all unincorporated areas of Manilla Township in Cavalier County.
- II. Compliance: Except as hereinafter provided, no building, structure, or land shall be erected, repaired or used except in conformance with these regulations.

- III. Agriculture Exempted: Nothing in this ordinance shall be applied for the purpose of preventing or restricting the use of land or buildings for agriculture or any of the normal incidents of agriculture.
- IV. Interpretation: In the interpretation and application of this ordinance, the provisions of this ordinance shall be held to the minimum requirements. Where this ordinance imposes a greater restriction than existing law, the provisions of this ordinance shall govern.
- V. Non-Conforming Uses:
1. Lawful, non-conforming uses of land or buildings existing at the date of adoption of these regulations may continue provided no structural alterations except for normal maintenance are made and such non-conforming uses shall be extended to occupy a greater area of land than occupied at the time of adoption.
 2. No building or structure where a non-conforming use has been discontinued for a period of 1 year or has changed to a permitted use shall again be devoted to a non-conforming use.
 3. A non-conforming structure destroyed or damaged less than 50 percent of its fair market value may be reconstructed within 1 year of such casualty. If damaged more than 50 percent of its fair market value, such building shall be reconstructed in conformance to those regulations.
 4. The provisions of this section shall not be applicable to conditional uses or any use made non-conforming by a change in district regulations.
- VI. Amendments: In accordance with Chapter 58-03, Section 58-03-13 of the North Dakota Century Code, the Board of Township Supervisors may from time to time amend the provisions of this ordinance. Such amendment shall not become effective until after a public hearing at which parties of interest and citizens shall have the opportunity to be heard. At least 15 days notice of the time and place shall be published in the official newspaper of the county. The description of any land within any zoning district, together with any restriction therein, or any amendment to the zoning ordinance, shall be filed with the Board of Township Supervisors.

ARTICLE IV

District Regulations

BOOK M-34 PAGE 266

- I. Establishment of District Regulations: For the purpose of these regulations, and only for those portions of the township which are subject to this ordinance, the township is divided into classes of districts, which are established as follows:
1. Agricultural
 2. Residential Country Homes
 3. Highway Commercial
- A. Zoning Map - The location and boundaries of the zoning districts are hereby established as shown on the map entitled "Zoning District Map", which accompanies, and is hereby made a part of the regulations.
1. Location of District Boundaries
 - A) Where the district boundary lines on the Zoning District Map are indicated to follow highway, road, or railroad rights-of-way, such boundary lines shall be construed to be the centerline of said rights-of-way unless clearly shown to the contrary.
 - B) Where any uncertainty exists as to the exact location on the zoning district boundary line, the zoning board shall determine the location of such boundary lines.
- II. A - Agricultural District:
- A. Purpose: The "A" Agricultural District is established as a district in which the predominant use of land is for general agricultural uses. For the "A" Agricultural District, in promoting the general purposes of this ordinance the specific intent of this section is:
1. To encourage the continued use of land for agricultural uses;
 2. To prohibit scattered commercial and industrial uses of the land and to prohibit any other use which would interfere with an integrated and efficient development of the land;

3. To discourage any use, which because of its character or size, would create unusual requirements and costs of public services such as police and fire protection, water supply, and sewerage before such services can be systematically and adequately provided.

B. Permitted Uses:

- (1) General farming operations including farm dwellings and agricultural buildings, nurseries and tree farms. Any shelter belts to be planted within 200 feet from the center line of roads or quarter section lines shall require a permit and may be approved.
- (2) Single family dwellings related to an individual farming operation.
- (3) Airports and heliports.
- (4) Public parks and other public buildings and public or quasi-public recreational facilities.
- (5) Storage of agricultural products and minor handling according to State Health Department regulations
- (6) Home occupations and accessory uses customarily incident to the uses permitted in this district but not including feedlots or other concentrated animal feeding operations.

C. Conditional Uses:

The following conditional uses and their accessory uses are permitted subject to the stipulation of the zoning board. Schools, sanitary disposal facilities including landfills, mining or gravel removal, feedlots, wrecking, salvage or junk yards, radio or TV towers, utility lines and sub-stations in accordance with the appropriate provisions of this ordinance, parks or open land recreational use, animal hospital, fire station, churches and cemeteries, grain cleaning plants, grain elevators and grain storage facilities. Anhydrous and fertilizer plants provided no dwelling is within 660 yards.

D. Dimensional Standards:

1. Setbacks:

- A. 200 feet from all section lines, 1/4 quarter section lines and the centerlines of township and county roads.

B. 250 feet from the centerline of all state highways.

2. Dwellings: No new farm dwellings shall be located within 660 yards of an existing anhydrous or fertilizer plant.

III. Residential Country Homes District

A. Purpose: The Residential Country Homes District is established as a district in which the predominant use of land is for low-density residential and limited agricultural use. For this district, in promoting the general purposes of this section, the specific intent of this section is:

1. To encourage the continued use of the land for low-density residential and limited agricultural uses;
2. to prohibit commercial and industrial uses of the land; and
3. to discourage any use, which because of its character or size, would create unusual requirements and costs for public services.

B. Permitted Uses:

1. Single family dwellings, schools, and churches.
2. Radio and TV towers, utility lines and sub-stations, water pump stations, and sewage lift stations.
3. Public parks and other public buildings and public recreation facilities and playgrounds.
4. Truck farming such as commercial flower growing, fruit growing tree and plant nursery, truck gardening, and greenhouses.

C. Conditional Uses:

1. Other uses of the same nature or class as those listed above which in the opinion of the Board, as evidenced by a resolution of record, are not more obnoxious or detrimental to the welfare of the area than those listed in above permitted uses.

D. Dimensional Standards:

BOOK M-34 PAGE 269

1. **Front Yard:** Each lot shall have a front yard not less than 40 feet in depth on interior subdivision streets or roads. Except when fronting a county, township, state road or quarter section line, then the setbacks shall not be less than the following distance outlined below from the centerline of such roadways fronting the property:

<u>State Highway</u>	<u>All Other Roads</u>	<u>1/4 Section Lines</u>
250 feet	200 feet	200 feet

2. **Side Yard:** Each lot shall have two (2) side yards, one on each side of the principal and accessory buildings of 40 feet.
3. **Rear Yards:** Each lot shall have a rear yard depth of not less than 75 feet.
4. **Lot area:** Each County Home dwelling hereafter erected shall be located on a lot having a minimum area of 5 acres.
5. **Lot Width:** Each lot shall have a minimum width of 350 feet.
6. **Height Limits:** No single-family dwelling shall exceed 2 1/2 stories, nor shall it exceed 35 feet in height. No principal building for any other permitted use shall exceed 4 stories, nor shall it exceed 50 feet in height, not including radio or TV aerials.
7. **Area Coverage:** Principal and accessory buildings shall not occupy more than 40 percent of the area of the lot.

IV Highway Commercial District

- A. **Purpose:** The Highway Commercial District is intended for commercial activities which might be incompatible with uses in a central business district by reason of traffic considerations, marketing characteristics, and area requirements and other characteristics inherent in these uses. Such commercial activities normally require a considerable amount of on-site storage or parking and would otherwise cause conflicts if located in a downtown central business district.
- B. **Permitted Uses:** Automobile repair garages, auto sales, farm machinery repair and sales, building supply yards, wholesaling of products, commercial garages and warehousing. Commercial recreation, including bowling alleys, dance halls and skating rinks but not including residential dwellings.

C. Conditional Uses: Enterprises or businesses of the same nature or class as those listed in the above section which in the opinion of the Board, as evidenced by a resolution of record, are not more obnoxious or detrimental to the welfare of the area than those listed as permitted uses. Other types of retail sales and services shall be encouraged to locate in a city's business district.

D. Dimensional Standards:

1. Front Yard: Each lot shall have a front yard not less than 200 feet from the centerline of a state highway and 200 feet from the centerline of all other roads and 1/4 section lines.
2. Side Yards: Each lot shall have two (2) side yards, one on each side of the principal and accessory buildings of 20 feet.
3. Rear Yards: Thirty feet.
4. Lot size: 5 acres.
5. Lot width: 350 feet.
6. Height Limitations: No structure shall exceed three (3) stories or forty-five (45) feet not including radio or TV aerials.

E. Intensity of Use Regulations:

1. A buffer strip, which is approved by the Board, shall provide a sight and sound barrier when a commercial use is abutting a residential district. The buffer strip shall be adequately maintained by the property owner.

ARTICLE V

Special Provisions

- I. Utilities: Electric power, electrical transmission lines, natural gas pipe lines, petroleum products pipe lines.
 - A. New utilities, electric power lines, electric transmission lines, natural gas pipe lines, petroleum products pipe lines shall be considered as a conditional use, and as such shall conform to all requirements put upon them by the Township Zoning Board.

- B. The Township Zoning Board, before authorizing the issuance of a permit, shall determine that the proposed utilities or lines do not interfere with: 1) the reasonable established future plans of adjoining townships, 2) the orderly development and safety of the township. If any modifications of said provisions appear necessary, such modification shall be noted as a limitation on the zoning permit.
 - C. All pipe lines, natural gas, petroleum lines, etc., shall be placed deep enough as not to constitute a hazard to normal farming operations.
 - D. Excavations for tunneling of any pipe lines under roads, farm drains, group drains and local drains shall be done by the company owning or leasing said pipe lines and cost of said excavation to be borne by said company.
- II. Sanitary Regulations: All agricultural, residential, business or industrial structures shall conform to the North Dakota health regulations or District Health regulations as it refers to wells, irrigation and septic and sanitary systems.
- III. Shelter Belts: No shelter belts or major tree planting shall be established closer than:
- 1) 200 feet from all section lines and quarter section lines and the centerlines of all township and county roads.
 - 2) 250 feet from the centerline of all state highways.
 - 3) The Township Board may by a Resolution of Record agree with a request from consenting landowners to the placement of a shelterbelt on a mutually held property line.
- IV. Excavation and mining of sand, gravel, rock or stone by any commercial mineral operation.
- 1. Evidence of written agreement between the applicant and property owner that excavation or processing shall not take place within 300 feet of an adjacent property line or within five hundred (500) feet of an existing residence.

2. Written evidence of a reclamation agreement with the surface owner.
 3. A road maintenance contract has been negotiated with the township stating responsibilities for maintaining the roads which are used as haul routes by the person removing the gravel.
 4. The applicant shall conform to all requirements regarding preservation, removal or relocation of historical or archaeological artificats.
- V. Residential Development: The following regulations shall be applied to the construction of all dwelling units.
- A. No new dwelling shall be located within 660 yards of an existing anhydrous or fertilizer plant.

ARTICLE VI

Administration and Enforcement

- I. Zoning Administrator: The Zoning Administrator shall be appointed by the Zoning Board. Duties of the Zoning Administrator shall include:
 - A. Issuance of all permits;
 - B. Conduct inspections of buildings;
 - C. Maintain records of the regulations and permits;
 - D. Transmit to the zoning board all applications for appeals, variances, or conditional use permits and all applications for amendments to the board of township supervisors.
- II. Township Zoning Board: Membership for the board shall consist of the board of township supervisors plus two (2) representatives from the incorporated communities within the township. Duties of the board shall include:
 1. Establishment of rules, regulations and procedures for the purpose of administering the zoning ordinance.
 2. Assist the zoning administrator in conducting inspections of buildings and administering the zoning ordinance.

3. Hear and decide appeals where it is adjudged by the applicant that an error in judgement has been made by the zoning administrator.
 4. Review and study from time to time the provisions of the regulations.
 5. The zoning board shall serve as an advisory to the township board. The township board shall have final review of all zoning board decisions.
- A. Appeals: Any person aggrieved by the provisions of these regulations or by any order of determination of the zoning administrator may within 60 days of such action, petition for a hearing to the township zoning board. Such appeal shall be in writing and shall specify in detail the grounds for the appeal.

1. Procedures:

- a. Appeals shall be filed with the zoning administrator.
 - b. Within 30 days of filing, the township zoning board shall fix a date for a hearing.
 - c. Notice in writing shall be given to the petitioner at least 5 days prior to the hearing.
 - d. Within 15 days after the hearing, the Township Zoning Board shall take action and shall mail by registered mail a copy of its order to the petitioner.
- B. Variances: As used in this ordinance, a variance is authorized only for height, area, or size of structures or yards.

No variance shall be authorized unless the township zoning board finds beyond a reasonable doubt that all of the following conditions exist:

1. That there are exceptional or extra-ordinary circumstances applying to the property in question or to the intended use of the property that do not apply generally to other properties or class or use in the same zoning district.

2. That such variance is necessary for the preservation and enjoyment of a substantial property right possessed by other properties in the same zoning district and in the vicinity.
 3. That the authorization of such variance will not be of substantial detriment to adjacent property and will not materially impair the purpose of the regulations or the public interest.
 4. The owner cannot otherwise obtain a reasonable return on this property.
 5. The hardship is not self-created.
 6. The variance request is the minimum necessary to permit a reasonable use of the land.
- C. Conditional Uses: No permit pertaining to the conditional use of land or buildings shall be issued unless:
1. An application for a conditional use permit has been submitted to the township zoning board for review.
 2. The board has held a public hearing.
 3. The board has made written findings certifying compliance with rules governing conditional uses and that, where applicable, satisfactory provision for the following has been made:
 - a. Entrance and exit to property with reference to public safety, traffic flow and convenience.
 - b. Parking and loading requirements of the specific use.
 - c. General compatibility with the surrounding property with due consideration for noise, odor or other adverse effects.
 - d. Required open space and yards.
 - e. Any other applicable circumstances that may need further attention.

III. Permits: No structure or land use for residential, commercial, or industrial purposes including accessory uses, shall be built, altered or moved until a permit has been obtained from the zoning administrator. No permit shall be required for maintenance or repair of any building which does not alter the plan of the structure.

A. No Building Permit Without Approved Access

1. No building permit shall be issued until the Zoning Administrator has approved in writing an approach permit for access to the lot upon which the permit is requested.
2. No building permit or approach permit may be issued unless and until all roadways which are necessary for access to the property for which a permit is sought are constructed to County standards and approved in writing by the zoning administrator.

B. No Electric Power Without Proper Permits

It shall be unlawful for any association, company, person, firm, cooperative or corporation to use or permit to use, or to supply electrical current for electrical wiring for lights, heat or power in any building or structure within the zoned area of the townships, unless the required permits and approval of such building, structure, and electrical circuits have been issued by the Township Board or by an authorized representative thereof. The Certificate of Approval shall be attached to the electrical wiring circuits prior to the installation of the electrical meter.

IV. Violations of Regulations: A violation of this ordinance is an offense punishable by a fine not to exceed \$200.00 for each and every day that any violator fails to comply with the provisions of these regulations. All fines for violation shall be paid to the Township Clerk and shall be credited to the general fund of the township. In addition to other remedies, the townships may institute any appropriate actions or proceeding in accordance with Section 58-03-14 of the North Dakota Century Code.

Whenever a violation of this ordinance occurs, any person may file a complaint in regard thereto. All such complaints shall be filed with the Zoning Administrator who shall investigate such violation and report to the Board of Township Supervisors for appropriate action.

V. Fees: For the purpose of administering this ordinance, fees may be instituted by the board of township supervisors.

V.S. 1987

THE ZONING DISTRICT MAP OF THE TOWNSHIP OF

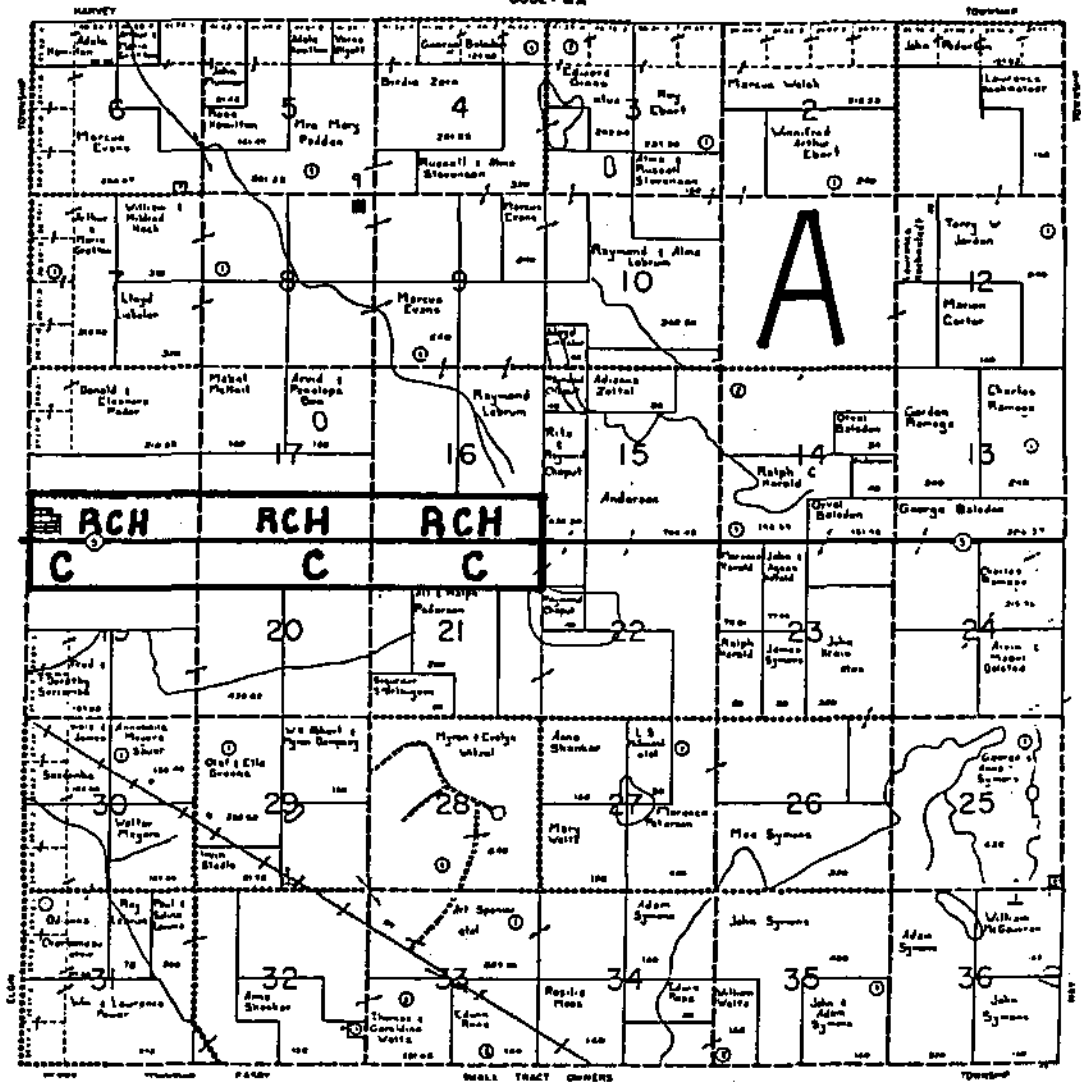
MANILLA

BOOK M-34 PAGE 276

TOWNSHIP 181 N.

CODE MA

RANGE 89 W.



Zoning Districts

Zoning Commission Public Hearing: 2 April 1987

Township Board Public Hearing: 16 April 1987

Adopted:

A....Agricultural
 RCH..Residential Country Homes
 C....Highway Commercial

35.00
384
Having Interest
R.R. 2 Box 39
Langdon, N.D.

MISSOURI REC 2029

BOOK M-34 PAGE 277

468 ✓
Document No. 197487
473
STATE OF NORTH DAKOTA }
County of Cavalier } ss.

I hereby certify that the within instrument was filed for record in this office on

October 19, 1987

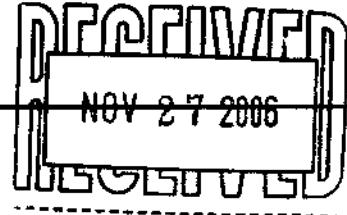
at 1:00 o'clock P.M. and was duly recorded in Book M-34 of Miscellaneous on Page 261

Deice Morrison
REGISTER OF DEEDS





**STATE
HISTORICAL
SOCIETY
OF NORTH DAKOTA**



John Hoeven
Governor of North Dakota

October 20, 2006

North Dakota
State Historical Board

Marvin L. Kaiser
Williston - President

Albert I. Berger
Grand Forks - Vice President

Chester E. Nelson, Jr.
Bismarck - Secretary

Gereld Gerntholz
Valley City

A. Ruric Todd III
Jamestown

Diane K. Larson
Bismarck

John E. Von Rueden
Bismarck

Sara Otte Coleman
*Director
Tourism Division*

Kelly Schmidt
State Treasurer

Alvin A. Jaeger
Secretary of State

Douglass Prchal
*Director
Parks and Recreation
Department*

Francis Ziegler
*Interim Director
Department of
Transportation*

Merlan E. Paaverud, Jr.
Director

Mr. Jeffery Rice
Tetra Tech, Inc.
Project Manager, Natural Resources
618 South 25th St
Billings, MT 59101

**ND SHPO Ref.:07-0137 Project Area Environmental Scan Maxim Project
no. 7551118.100 Cavalier County, North Dakota**

Dear Mr. Rice,

We received your request for a list of historical sites within the boundaries of a large project site in Cavalier County. We would call this work a Class I Survey. Our office, ND SHPO does not have the resources to provide this information. I am including a list of cultural resource contractors with a current permit to work in North Dakota, who can provide your office with the requested list, as well as recommendations for areas of potential concern that would require further research, a Class II Cultural Resource Survey, or reconnaissance survey and/or Class III Cultural Resource Survey, a pedestrian survey.

Thank you. We look forward to receipt of a copy of the Class I Survey for our review. If you have any questions please contact Susan Quinnell, Review and Compliance Coordinator at (701) 328-3576, e-mail squinnell@nd.gov

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)
and
Director
State Historical Society of North Dakota

Accredited by the
American Association
of Museums

2006 NORTH DAKOTA CULTURAL RESOURCE INVESTIGATION PERMIT HOLDERS

PERMIT HOLDER

EXPERTISE

Archaeology

Historic
Architecture

History

Acme Cultural Resources Services
13110 Michelle Drive
Rapid City, SD 57702-8501
Contact: Jeffrey V. Buechler
Telephone: 605-341-2361
email: Dakotaresrch@msn.com
(4/2006)

X

Anthropology Research
Department of Anthropology
University of North Dakota
P. O. Box 7094
Grand Forks, ND 58202-7094
Contact: Dr. Dennis Toom
Telephone: 701-777-2437
Fax: 701-777-2435
email: dennis_toom@und.nodak.edu
(03/2006)

X

X

X

OR

UNDAR-West
P. O. Box 737
Belfield, ND 58622
Contact: Mike Jackson
Telephone: 701-777-4081
(03/2006)

X

X

X

Bear Creek Archeology, Inc.
P. O. Box 347
Cresco, Iowa 52136
Contact: David Stanley
Telephone: 563-547-4545
(01/2006)

X

Beaver Creek Archaeology, Inc.
116 S. Broadway
P. O. Box 489
Linton, ND 58552
Contact: Wade K. Burns
Telephone: 701-367-8990
(01/2006)

X

X

2006 NORTH DAKOTA CULTURAL RESOURCE INVESTIGATION PERMIT HOLDERS

PERMIT HOLDER

EXPERTISE

Archaeology

Historic
Architecture

History

Duluth Archaeology Center, L.L.C.
5910 Fremont Street, Ste. 1
Duluth, MN 55807
Contact: Susan Mulholland
Telephone: 218-624-5489
(06/2006)

X

Earthworks, Inc.
Operations Director
128 Soo Line Drive
Bismarck, ND 58501
Contact: Beth Nodland
Telephone: 701-250-5900
(02/2006)

X

X

Environmental Resources Management
30775 Bainbridge Rd. Ste. 180
Solon, OH 44139
Contact: Jacquie Payette
Telephone: 440-542-0750
(05/2006)

X

X

Ethnoscience, Inc.
4140 King Avenue East
Billings, MT 59101
Contact: Lynelle Peterson
Telephone: 406-252-7945
Fax: 406-252-9483
(12/2005)

X

X

GCM Services, Inc.
Box 3047
Butte, MT 59702
Contact: David Ferguson
Telephone: 406-723-4387
(12/2005)

X

Gemini Research
15 East Ninth Street
Morris, MN 56267
Contact: Susan Granger
Telephone: 320-589-3846
(05/2006)

X

X

2006 NORTH DAKOTA CULTURAL RESOURCE INVESTIGATION PERMIT HOLDERS

PERMIT HOLDER

EXPERTISE

Archaeology

Historic
Architecture

History

Greer Services
2599 S. Paradise Dr.
Casper, WY 82604
Contact: Mavis Greet
Telephone: 307-473-2054
Fax: 307-473-1574
(09/2006)

X

ARCADIS G&M, Inc.
630 Plaza Drive, Ste. 100
Highlands Ranch, CO 80129
Contact: Lucy Bambrey
Telephone: 720-344-3500
Fax: 720-344-3535
www.arcadis-us.com
(01/2006)

X

Golder Associates, Ltd.
1000, 9950 6th Avenue SW
Calgary, Alberta T2P 3T1
Contact: David Blower
Telephone: 403-669-6203
Fax: 403-299-5606
(09/2006)

X

HDR Engineering, Inc.
6190 Golden Hills Drive
Minneapolis, MN 55416
Contact: Michael J. Madson
Telephone: 763-278-5921
(01/2006)

X

Jeff Kinney & Associates
2754 22nd Street NE
Manvel, ND 58256
Contact: Jeff Kinney, President
Telephone: 701-696-2289
(04/2006)

X

Kent Good & Associates
50 South Rodney Street #1
Helena, MT 59601
Contact: Kent Good
Telephone: 406-202-1200
(12/2005)

X

X

2006 NORTH DAKOTA CULTURAL RESOURCE INVESTIGATION PERMIT HOLDERS

PERMIT HOLDER

EXPERTISE

Archaeology

Historic
Architecture

History

Lou Hafermehl
610 North 7th Street #11
Bismarck, ND 58501
Telephone: 701-250-8544
(12/2005)

X

X

The Louis Berger Group, Inc.
950 50th Street
Marion, IA 52302
Contact: Randall Withrow
Telephone: 319-373-3043
Fax: 319-373-3045
(01/2006)

X

X

Minnesota State University Moorhead
1104 7th Avenue South
Moorhead, MN 56563
Contact: Dr. Michael Michlovic
Telephone: 218-477-2035
(5/2006)

X

Metcalf Archaeological
Consultants, Inc.
P. O. Box 899
Eagle, CO 81631
Contact: Mike Metcalf
Telephone: 970-328-6244
1-800-755-6241
(01/2006)

X

OR

Metcalf Archaeological
Consultants, Inc.
P. O. Box 2154
Bismarck, ND 58502
Contact: Suzanne Nelsen
Telephone: 701-258-1215
(01/2006)

X

Minnesota State University Moorhead
1104 7th Avenue South
Moorhead, MN 56563
Contact: Dr. Michael Michlovic
Telephone: 218-477-2035
(05/2006)

X

2006 NORTH DAKOTA CULTURAL RESOURCE INVESTIGATION PERMIT HOLDERS

PERMIT HOLDER

EXPERTISE

Archaeology

Historic
Architecture

History

ND Department of Transportation
608 E. Blvd. Ave
Bismarck, ND 58505
Contact: Robert Christensen
Telephone: 701-328-4539
(01/2006)

X

ND Institute for Regional Studies
Box 5075 NDSU
Fargo, ND 58105-5075
Contact: Dr. Thomas J. Riley
Telephone: 701-231-8338
(01/2006)

X

Quality Cultural Resource Services
3459 Jet Drive
Rapid City, SD 57703-4760
Telephone: 605-388-5309
Fax: 605-388-5319
Contact: Lance Rom
qservices@qwest.net
(03/2006)

X

X

X

Renewable Technologies, Inc.
511 Metals Bank Bldg.
Butte, MT 59701
Contact: Kimberly L. Tintinger
Telephone: 406-782-0494
Fax: 406-782-3064
(12/2005)

X

X

X

Steve C. Martens
Architect
P. O. Box 5244
Fargo, ND 58105-5244
Telephone: 701-361-3943
Fax: 701-231-7342
(03/2006)

X

SWCA, Environmental Consultants
295 Interlocken Blvd., Ste. 300
Broomfield, CO 80021
Contact: Kevin W. Thompson
Telephone: 303-487-1183
(01/2006)

X

X

X

2006 NORTH DAKOTA CULTURAL RESOURCE INVESTIGATION PERMIT HOLDERS

PERMIT HOLDER

EXPERTISE

Archaeology

Historic
Architecture

History

TEC, Inc.
250 Bobwhite Court Ste. 200
Boise, ID 83706
Contact: Teresa Rudolph
Telephone: 208-389-7848
(02/2006)

X

X

The 106 Group Ltd.
The Dacotah Building
370 Selby Avenue Ste. 206
St. Paul, MN 55102
Contact: K. Anne Ketz
Telephone: 651-290-0977
(04/2006)

X

X

X

TRC Mariah Associates, Inc.
605 Skyline Drive
Laramie, WY 82070-8909
Contact: Craig S. Smith
Telephone: 307-742-3843
Fax: 307-745-8317
(12/2005)

X

X

Wapsi Valley Archaeology, Inc.
P. O. Box 244
Anamosa, IA 52205
Contact: Nurit G. Finn
Telephone: 319-462-4760
(09/2006)

X

Western Land Services, Inc.
54 West Seymour Street
Sheridan, WY 82801
Contact: James M. Welch
Phone: 307-673-1817
Fax: 307-673-1823
E-Mail: jim.welch@westernls.com
(1/2006)

X

Westwood Professional Services, Inc.
7699 Anagram Dr.
Eden Prairie, MN 55344
Contact: Steven J. Blondo
Phone: 952-937-5150
Fax: 952-937-5822
E-Mail: wps@westwoodps.com
(9/2006)

X

X

X

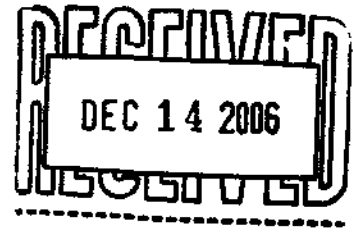
Jeffrey



"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5098 PHONE 701-328-6300 FAX 701-328-6362



December 11, 2006

Jeffrey R. Rice
Project Manager, Natural Resources
Tetra Tech, Inc.
PO Box 30615
Billings, MT 59107

Dear Mr. Rice:

RE: Project Area Environmental Scan
Maxim Project No. 7551118.100

The North Dakota Game and Fish Department has reviewed the proposed project area for wildlife concerns. We have no data regarding species of concern within the vicinity of the proposed wind energy development project.

Our primary concern with wind farm development is the disturbance of native prairie associated with construction of turbines, access roads, transmission lines, etc. We suggest the US Fish and Wildlife Service wind turbine siting guidelines be implemented as appropriate in an effort to reduce these impacts.

National Wetland Inventory maps indicate numerous wetlands within the project area. We recommend that steps be taken to protect any wetlands that cannot be avoided, above-ground appurtenances not be placed in wetland areas, and no alterations be made to existing drainage patterns. We also ask that every effort be made to prevent destruction of woody vegetation and any loss of trees and shrubs be replaced on a 2:1 basis.

We would appreciate being kept informed as this project progresses, and as other wind power projects are developed in North Dakota. If possible, we would also like the GPS coordinates for each turbine after the site has been established.

Sincerely,

(for)

Michael G. McKenna
Chief
Conservation & Communication Division

js

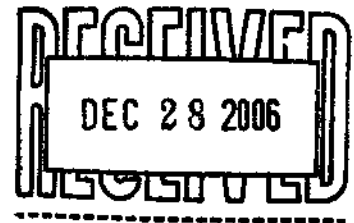
Handwritten initials: HJ/EK



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



December 26, 2006

Jeffrey Rice
Project Manager, Tetra Tech Inc
PO Box 30615
Billings, MT 59107

Dear Mr. Rice:

I am responding on behalf of the Attorney General to your recent letter requesting this office review information and advise you as to filing and permit requirements of your company for a proposed wind energy center in Cavalier county.

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 take any action in response to your letter.

For legal advice and to ensure compliance with all state laws and local ordinances you should have your company's legal department review your proposal or 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,

Liz Brocker
Executive Assistant



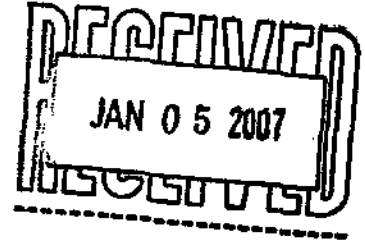
North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3898 • INTERNET: <http://swc.nd.gov>

John E.M.

December 29, 2006

Jeffrey R. Rice, Project Manager
Tetra Tech, Inc.
618 South 25th Street
Billings MT 59101



Dear Mr. Rice:

This letter is to acknowledge receipt of your notification regarding Tetra Tech Project No. 7551118.100 the proposed Langdon Wind Energy Center, Cavalier County, North Dakota. The Energy Center will be encompassing several townships or portions of townships in your area of project. You asked the State Engineer to review the area and bring to your attention any permits this office may require from you for the project to proceed.

The State Engineer has several parameters he is responsible to protect for the citizens of North Dakota. This office has reviewed the floodplain information in Cavalier County, and found that your area of interest is not within an identified floodplain. Any meandered lakes in the area of interest may require a Sovereign Lands Permit if you find a need to enter or disturb a lake bottom or shoreline for any reason. If you find you need to drain or fill wetlands, a drain permit may be required. Of course with any wetlands there will be federal permits also required from the federal agencies.

In summary, you should have no floodplain issues, but may need Sovereign Lands or drain permits from this office if you disturb wetlands in the project area.

If you have any further questions, or determine you may need either Sovereign Lands or drain application forms from this office, please let me know and I can send them to you.

Sincerely,

Dwight Comfort, PE
Water Resource Engineer

DC\1687

APPENDIX E

PRE-CONSTRUCTION INVESTIGATION PROTOCOLS

**Protocols for Pre-Construction Avian Studies
Langdon Wind Energy Center
Cavalier County, North Dakota**

➤ ***Spring Avian Point Count Surveys***

Objective: *To avoid and minimize potential adverse effects on avian use within the project area.*

The avian point count surveys will be conducted weekly in the spring from late March (weather permitting) through the end of May. Fixed point count surveys will be conducted at circular plots in the study area, with in-transit observations of birds made while traveling between survey points. Surveys will be conducted during daylight hours. A series of observation points will be established in the area identified by FPL Energy as the likely locations of turbine strings. Points that provide the best views and coverage of as much of the area where turbine strings are proposed will be selected. The number of points selected will be limited to those that can be covered in a single field day. Avian observations will be focused on recording all birds within an 800-meter radius circle centered on the observation point location, although birds beyond 800 meters will also be recorded. The duration of the survey at each point will be 20 minutes. The UTM coordinates will be documented in the field using a GPS unit. Final data sheets will be prepared after the initial project setup.

The Project Area is heavily utilized by migratory species, including grassland birds and waterfowl. Kelly's Slough, a USFWS refuge and major staging area for migrating shorebirds, is located approximately 100 miles southeast of the Project Area. Based on historical field research and observations, it is estimated that shorebirds migrate northward through Kelly's Slough in May and southward during July and August; therefore, the May migration would be captured in the point count survey protocol discussed above. During spring avian point counts, all birds observed will be recorded and special note of any shorebirds, waterbirds, and waterfowl observed within 0.5 mile of the Project Area will be noted. If large numbers of shorebirds, waterfowl, or waterbirds are observed migrating over or stopping in the Project Area, available information on the habitats that shorebirds are likely to use during the return southward migration, which begins in mid-July, will be reviewed. This review will include contacting the Kelly's Slough refuge personnel to gather background information on habitat requirements and determination of the birds' presence in the area. A recommendation as to whether July and August point counts are warranted during the construction phase of the project will be made.

➤ ***Raptor Nest Surveys***

Objective: *Surveys of raptor nests throughout the Project Area to document the intensity of resident raptor use will identify sites where effects may be further minimized.*

At the same time as initiation of point counts, an initial ground survey for raptor nests in the study area will be conducted. These surveys will consist of driving the roads and/or walking (if there are areas not visible from roads and the landowner allows access) throughout the study area, searching for evidence of raptor tree stick nests. The first surveys will be conducted prior to leaf-on when nests are visible. Presence/absence of raptor activity in and near potentially suitable nesting habitat will be recorded during these (and all other) surveys. Whenever possible, the sex and age class of all raptors observed will be determined. If an adult exhibiting nesting behavior (courtship or carrying food, for example) is observed, the area will be searched for a nest if one has not already been located. Without creating a disturbance, the UTM coordinates of each nest will be recorded in the field with a GPS unit so that it can easily be found for future monitoring. The location of each nest will be plotted on a field map of the WRA. Where feasible and without disturbing nesting birds, each nest will be photographed from at least one direction and recorded. Any nests found will be classified according to following nesting status: incubating adult, tended, or of special interest; and will be re-visited in May to determine subsequent activity status. Nests determined to be active in May may be revisited in the June-July time period to determine nest productivity. Results of field monitoring will be included in the pre-construction avian monitoring report.

➤ ***Post-Construction Monitoring***

Objective: *Identify any avian mortalities that might occur from collisions with wind turbines.*

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

According to the USFWS, additional post-construction monitoring is not likely to be necessary, however, a final determination on the need for additional monitoring will be made based on the results of spring avian studies.

Protocol for Pre-Construction Wetlands Inventory
Langdon Wind Energy Center
Cavalier County, North Dakota

➤ ***Wetlands Inventory***

Objective: *Wetland field surveys will be conducted to identify wetlands and other aquatic resources that could be affected by project facilities within the Project Area and proposed transmission line corridor.*

The field effort will include a single site visit to review the proposed array, access roads, other project features (met towers, operations building, construction laydown areas) and transmission line corridor for wetlands and other waters which could be impacted during construction activities and gather sufficient information to allow for coverage under a Clean Water Act Section 404 Nationwide Permit; that is, if the wetlands are deemed to be subject to U.S. Army Corps of Engineers (USACE) jurisdiction. If necessary to meet the requirements of the Nationwide Permit, formal delineations of wetlands and identification of jurisdictional waters will be performed for the 404 Permit Application. Wetland information coupled with project specific details such as turbine layout will be used to guide personnel to the most sensitive areas during the reconnaissance.

Personnel experienced in the identification of wetlands and wetland functions and values as they relate to jurisdictional status will conduct a field survey of wetlands and other aquatic resources along the proposed transmission corridor. Biological and hydrological resources of note will be identified and documented in field notes. Description of resources along the corridors will be specified.

Information to be collected in the field will include the following; vegetative characteristics, geographic location, hydrologic setting, and field observations as they relate to wetland functions and values.

The wetland delineations will be conducted according to the USACE's 1987 Wetland Delineation Manual. Concurrent with wetland surveys, biologists will identify those areas meeting the definition of a Water of the United States (WUS). The current definition can be found in 33 Code of Federal Regulations (CFR) 328 and is briefly summarized as follows:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce.

Integral to the identification of WUS within the Project Area will be identification of the "ordinary high water mark". The "ordinary high water mark" means that line on shore established by fluctuations of water indicated by physical characteristics. These include presence of a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, presence of litter and debris, or other appropriate means that consider characteristics of surrounding areas.

For all areas which are identified to be wetlands or WUS, UTM coordinates will be collected in the field with a GPS unit. Locations will then be graphically depicted on maps presented in the Section 404 permit application, if required. Wetlands and WUS will also be flagged during this task to facilitate avoidance during construction.

A formal wetland delineation report, suitable for submittal to the USACE, will be prepared and will detail the findings of the review and field investigation. Information included in this report will include: a description of the project areas including figures and acreage calculations, soil and vegetation conditions, an assessment of the jurisdictional status based on field observations of hydrologic, vegetative conditions, and soil conditions, including wetland delineation data sheets. This report will focus on those wetlands which may be impacted by the proposed array, access roads, laydown areas, other project features and transmission line.

**Protocol for Pre-Construction Cultural Inventory
Langdon Wind Energy Center
Cavalier County, North Dakota**

➤ ***Class II Cultural Inventory***

Objective: *Class II surveys will be conducted to identify cultural resources that could be affected by project facilities within the Project Area and proposed transmission line corridor.*

Between December 4 and December 11, 2006 Metcalf Archaeological Consultants, Inc. (MAC) conducted a Class I inventory of the block in which the wind farm is proposed. This inventory covered approximately 162 sections of land immediately southeast of the community of Langdon. The results of the Class I study (sites and previous investigations) were plotted on USGS 7.5' quadrangle maps so that known cultural resources could be avoided during preliminary planning. The maps were also used in deciding upon the level of further investigations needs for the project.

On February 21 Ed Stine, MAC staff archaeologist, met with Paul Picha, SHPO Chief Archaeologist, and Susan Quinnel, NDSHPO Review and Compliance Officer, to discuss the project and a suitable level of investigation. The results of the Class I search were examined and the general archaeology of the proposed wind farm area was noted. While there have not been many previous investigations in the area, there are no prehistoric archaeological sites and only a single archaeological isolated find (a projectile point) on record. The area is also relatively devoid of topographic relief beyond that created by the valley of the South Branch Park River. The area is expected to have only moderate to low potential for the presence of archaeological sites. Additionally, the majority of the area has been plowed and this would reduce the integrity of any sites present.

During the meeting it was proposed that 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 would suffice. This survey would be conducted by a qualified archeologist. During the survey, blocks (150 x 150 meter) around the proposed turbine locations would be inventoried if field observations indicate they are warranted. Based on professional judgment, these areas would have a relatively high potential to contain cultural resources. The inventory will use pedestrian transects spaced at 20 meter (or less) intervals and will adhere to the guidelines outlined in *North Dakota SHPO Manual for Cultural Resource Inventory Projects Revised Edition* (SHSND 2004).

**Protocol for Pre-Construction
Phase I Environmental Site Assessment
Langdon Wind Energy Center
Cavalier County, North Dakota**

This ESA will be performed in accordance with generally accepted practices of the profession undertaken in similar studies at the same time and in the same geographical area. Tetra Tech will observe that degree of care and skill generally exercised by the profession under similar circumstances and conditions. ESAs are a required component of the U.S. EPA's All Appropriate Inquiry (AAI) rule (40 CFR 312) for property purchasers to qualify for liability protection offered by the Small Business Liability Relief and Brownfield Revitalization Act of 2001 (CERCLA , 42 U.S.C § 9601 et. seq). Please refer to the additional liability protection requirements for property owners/prospective owners specified in 40 CFR 312 and CERCLA, 42 U.S.C. § 9601 et. seq.

The objective of this ESA is to identify "recognized environmental conditions" associated with past or current practices on or near the Property through limited research, a review of specified and reasonably ascertainable records and a Property reconnaissance in general accordance with the American Society for Testing and Materials (ASTM) Standard E1527-05. ASTM Standard E1527-05 is approved by EPA for use to satisfy all appropriate inquiries for ESAs. "Recognized environmental conditions," as defined under this ASTM standard, include the "presence or likely presence of any hazardous substances or petroleum products on a site under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater or surface water of the property". However, no ESA can wholly eliminate uncertainty regarding the potential for "recognized environmental conditions" in connection with the Property. Performance of an ESA under this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for "recognized environmental conditions" in connection with the Property, and within limits of time and cost.

Any potential purchaser(s), as the user(s) of this ESA, should investigate title or judicial records for Environmental Liens or Activity and Use Limitations (AULs) prior to purchasing the Property. AULs may include limitations such as engineering and institutional controls, and/or land use restrictions. Investigating title, environmental liens, and AULs for a property are part of the all appropriate inquiry requirements to qualify for Landowner Liability Protection offered by the Small Business Liability Relief and Brownfield Revitalization Act of 2001. Title, judicial record, and AUL investigative work is beyond Tetra Tech's work scope for this ESA. The user can accomplish title and record reviews by engaging a title company or a title professional to undertake a review of available land title or lien records for environmental liens or AULs currently recorded against or relating to the Property.

REQUEST FOR INFORMATION

Prior to commencing these services, Tetra Tech will require the following:

- A copy of the recorded title, including easements, use limitations and liens to the property. At your direction and for additional cost, Tetra Tech can contract with a title company to provide this information.

- Property owner contacts and Property access during normal business hours. Property access rights to be arranged by FPL Energy, LLC (FPL Energy) for the week of the scheduled Property visit.

In addition, Tetra Tech requires a statement from the client regarding the purpose for conducting the Phase I ESA. If the purpose for conducting the Phase I ESA is to obtain liability protection under CERCLA, Tetra Tech will also require a statement from the client regarding which type of liability protection is to be pursued:

- Innocent landowner
- Bona fide prospective purchaser
- Contiguous property owner

ASTM 1527-05 also requires that the user of an ESA provide certain information for incorporation into the ESA report. Therefore, we are requesting that FPL Energy respond to the following questions:

1. Is FPL Energy or their lenders, as the users of this ESA, aware of any environmental cleanup liens against the Properties that are filed or recorded under federal, tribal, state or local law?
2. Is FPL Energy or their lenders, as the users of this ESA, aware of any activity use limitations, such as engineering controls, land use restrictions or institutional controls that are in place on the Properties and/or have been filed or recorded in a registry under federal, state or local law?
3. Is FPL Energy or their lenders, as the users of this ESA, have any specialized knowledge or experience related to the Properties or nearby properties?
4. Is FPL Energy or their lenders, the purchaser, involved in the same line of business as the current or former occupants of the Properties or on adjoining properties so that they would have knowledge of the chemicals and processes used by current or former occupants?
5. Is FPL Energy or their lenders, as the users of this ESA, aware of any commonly known or reasonably ascertainable information about the Properties that would help the environmental professional to identify conditions indicative of releases or threatened releases?
6. Is FPL Energy or their lenders, the purchaser, aware of specific chemicals that are or may have been present on the Properties, spills or chemical releases on the Properties, or any cleanups that may have taken place on the Properties?
7. Is FPL Energy or their lenders, the purchaser's, opinion, as the user of this ESA, that the purchase price being paid for the Properties reasonably reflects the fair market value of the Properties?

8. Is FPL Energy or their lenders, the purchaser, as the user of this ESA, aware of any obvious indicators that point to the presence or likely presence of contamination in the areas subject to their development?

Information obtained by answering the above questions is part of the requirements to qualify for Landowner Liability Protection offered by the Small Business Liability Relief and Brownfield Revitalization Act of 2001. We may contact you with additional questions during preparation of the ESA.

SCOPE OF SERVICES

For this Phase I ESA, Tetra Tech will:

1. Review the history of the Property and surrounding area to identify possible previous activities that might have introduced hazardous materials or petroleum products to the Property. The historical use of the Property will be researched from the present back to the Property's first obvious use or back to 1940, whichever is earlier. This task involves discretionary review of as many of the following ASTM standard historical sources as are necessary and reasonably ascertainable to meet this objective.

- Applicable County records
- Polk City Directories
- Building department records
- Sanborn Fire Insurance Maps
- Historical aerial photographs
- Other sources as available

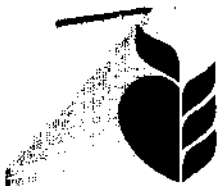
Data gaps and data failures, as defined in the AAI Rule, will be noted in the report.

2. Review environmental information regarding the Property and surrounding area using the following resources. Search distances will be in accordance with those specified in the AAI Rule.
 - US EPA databases, including National Priorities List (NPL); Comprehensive Environmental Response, Compensation, and Liability Index System (CERCLIS); CERCLA No Further Remedial Action Planned (NFRAP) database; Resource Conservation and Recovery Index System (RCRIS); RCRA Corrective Action under RCRA (CORRACTS) database; and Emergency Response Notification System (ERNS) database.
 - North Dakota State databases, including State Superfund (CECRA) database, Solid Waste Disposal Facilities, and Leaking Underground Storage Tank (LUST) and Registered Underground Storage Tank (UST) databases.
 - Other environmental databases, as available. These other databases will be reviewed at the discretion of Tetra Tech.
3. Interview appropriate persons concerning history of the Property and/or knowledge of hazardous materials or other contaminants on the Property or within the immediate vicinity. Such persons will include:

- Local, state, and/or federal officials
 - Property owner, key Property managers, and/or Property occupants
4. Review available physical setting sources as listed below:
- US Geological Survey (USGS) 7.5 Minute Topographic Map
 - Groundwater maps
 - Bedrock geology maps
 - Surficial geology maps
 - Soil maps
5. Inspect the Property to obtain information related to identifying recognized environmental conditions (as defined in the ASTM standard) from public right of ways and on land owners' properties where authorization can reasonably be obtained. Current use of the Property and adjoining properties will be discussed. Photographs of the Property will be taken to document pertinent features. The inspection will identify the presence or absence of the following features where appropriate:
- | | |
|------------------------------|------------------------------|
| • Potable water supply | • Sewage disposal system |
| • On-Properties chemical use | • Storage tanks |
| • Odors | • Drums and Other containers |
| • PCBs | • Heating/Cooling system |
| • Stains or corrosion | • Drains or sumps |
| • Pits, ponds, or lagoons | • Stained soil or pavement |
| • Stressed vegetation | • Solid waste disposal |
| • Wastewater disposal | • Wells |
| • Pools of liquids | |
6. After completing records review and Property reconnaissance, Tetra Tech will provide a verbal report of the findings and preliminary recommendations. Tetra Tech will issue a written report documenting the Phase I evaluation. The report will reflect evaluation of the Property for FPL Energy and will include a description of the evaluation methods, discussion of results, conclusions, and recommendations.

ASSUMPTIONS

- The assessment will include up to 500 feet buffer around each proposed turbine location.
- No investigation of residential properties or surrounding land within 1,000 feet of the main residence will be evaluated.
- Research into Property ownership information and chain-of-title documentation is not included in this proposal as this will be provided.
- No search for recorded environmental cleanup liens against any of the Property will be conducted.
- Crop land may affect the ability of the inspector to gain access and affect the ability to observe Property features including surface staining.



NORTH DAKOTA
DEPARTMENT of HEALTH

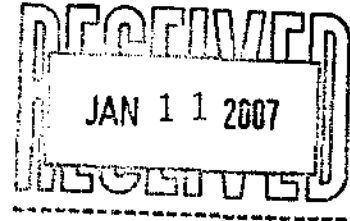
ENVIRONMENTAL HEALTH SECTION
Gold Seal Center, 918 E. Divide Ave.
Bismarck, ND 58501-1947
701.328.5200 (fax)
www.ndhealth.gov

7/10/15/06



January 5, 2007

Mr. Jeffrey R. Rice
Project Manager, Natural Resources
Tetra Tech, Inc.
P.O. Box 30615
Billings, MT 59107



Re: Proposed Langdon Wind Energy Center, Cavalier County

Dear Mr. Rice:

This department has reviewed the information concerning the above-referenced project submitted under date of December 21, 2006, 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

Environmental Health
Section Chief's Office
701.328.5150

Division of
Air Quality
701.328.5188

Division of
Municipal Facilities
701.328.5211

Division of
Waste Management
701.328.5166

Division of
Water Quality
701.328.5210

Mr. Jeffrey R. Rice

2.

January 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.

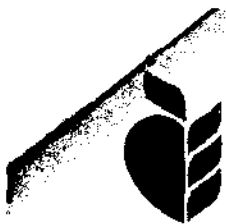
If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,



L. David Glatt, P.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

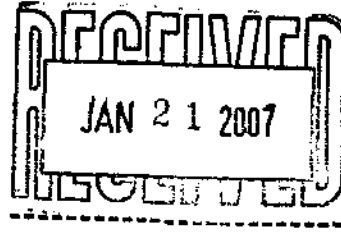
Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing 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.



North Dakota Department of Transportation

Francis G. Ziegler, P.E.
Director

John Hoeven
Governor



January 19, 2007

Mr. Jeffrey R. Rice, Project Manager, Natural Resources
Tetra Tech, Inc.
PO Box 30615
Billings, MT 59107

RE: Proposed Langdon Wind Energy Center
Cavalier County, North Dakota

Dear Mr. Rice:

This letter is in response to your request, dated December 21, 2006, to review the proposed project. First, congratulations to FPL on this exciting project.

I have enclosed a copy of our Utility Occupancy Application and Permit, along with the Risk Management Appendix, for your use if any work needs to be done on highway right-of-way or any facilities installed within 100 feet of the highway centerline.

The Devils Lake District begins on ND Highway 1 at Reference Point 200.526 which is at Nekoma, ND. If any work will be done along ND Highway 1 south of this point, a separate Utility Application must be obtained from the Grand Forks District. Address: ND Department of Transportation, PO Box 13077, Grand Forks, ND 58208-3077.

Enclosed also, is a copy of the proposed 2007 Spring Load Restriction map for your information. Depending on weather conditions, these load restrictions can go into effect as early as March and stay in effect as late as June, near Langdon.

If you have any further questions, please contact me at 701-665-5100.

Sincerely,

Scott D. Zainhofsky, PE
District Engineer, NDDOT - Devils Lake District

Enclosures

c: Les Noehre, Grand Forks District
F:\DVL\LAKEADMIN\SCOTT\SOV REQUESTS\Langdon Wind Farm.doc

UTILITY OCCUPANCY APPLICATION AND PERMIT

North Dakota Department of Transportation, Design Division
SFN 7995 (Rev. 05-2004)

Document No. _____	(FOR STATE USE ONLY)	Permit No. _____
--------------------	----------------------	------------------

APPLICANT INFORMATION

Owner of Facility	City	State	Zip Code
Mailing Address			Telephone Number
Owner's Agent	City	State	Zip Code
Owner's Contractor			Telephone Number

LOCATION NO. 1 (FOR STATE USE ONLY) Begin Ref. Point _____ End Ref. Point _____

Highway No. _____	<input type="checkbox"/> Along or <input type="checkbox"/> Across	Lanes of traffic <input type="checkbox"/> 2 <input type="checkbox"/> 4
Direction <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W	Begin _____	feet from reference marker _____
Direction <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W	End _____	feet from reference marker _____
<input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W from city of _____ or _____ miles from junction highway _____		

TYPE OF FACILITY (Complete appropriate spaces only.)

Description of Proposed Facility		
Size of Facility	Number of Cables	Length of Down Guys
Pipeline Pressure	Size of Casing	Length of Casing
Location of Pole(s)	Location of Appurtenances	Location - Others

TERMS AND CONDITIONS: Installation and maintenance of said facilities on highway right of way shall be subject to the North Dakota Department of Transportation's (NDDOT's) "A Policy for Accommodation of Utilities on State Highway Right of Way", current edition, and the following terms and conditions, attached hereto and made a part hereof.

- (A) Installation/maintenance of said facilities shall be done in a manner satisfactory to the NDDOT district engineer.
- (B) Owner shall notify the NDDOT district engineer forty-eight (48) hours prior to installing, maintaining, relocating, or removing said facilities. All disturbed areas shall be restored to their original condition in a manner satisfactory to the NDDOT district engineer.
- (C) The Risk Management Appendix, attached, is hereby incorporated and made a part of this agreement.
- (D) Owner shall repair or replace highway structures and appurtenances, and any existing facilities located on, over, or under highway right of way, which may be damaged as a result of the installation and maintenance of said facilities on highway right of way.
- (E) Owner shall promptly remove said facilities from highway right of way, or shall relocate or adjust said facilities, at its sole cost and expense when requested to do so by NDDOT.
- (F) NDDOT specifically reserves the right to revoke, or change the terms and conditions of, this Permit with or without cause and upon notice to the Owner.
- (G) The installation shall be completed on or before _____, 20_____.

DATE OWNER'S SIGNATURE

The Owner is hereby granted permission to install and maintain the facilities applied for, as shown on the plans attached hereto and made a part hereof.
Approved by NDDOT this _____ day of _____, 20_____.

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION

DISTRICT ENGINEER (TYPE OR PRINT)

SIGNATURE

LOCATION NO. _____ (FOR STATE USE ONLY) Begin Ref. Point _____ End Ref. Point _____

Highway No. _____ Along or Across Lanes of traffic 2 4
Direction N S E W Begin _____ feet from reference marker _____
Direction N S E W End _____ feet from reference marker _____
 N S E W from city of _____ or _____ miles from junction highway _____

LOCATION NO. _____ (FOR STATE USE ONLY) Begin Ref. Point _____ End Ref. Point _____

Highway No. _____ Along or Across Lanes of traffic 2 4
Direction N S E W Begin _____ feet from reference marker _____
Direction N S E W End _____ feet from reference marker _____
 N S E W from city of _____ or _____ miles from junction highway _____

LOCATION NO. _____ (FOR STATE USE ONLY) Begin Ref. Point _____ End Ref. Point _____

Highway No. _____ Along or Across Lanes of traffic 2 4
Direction N S E W Begin _____ feet from reference marker _____
Direction N S E W End _____ feet from reference marker _____
 N S E W from city of _____ or _____ miles from junction highway _____

LOCATION NO. _____ (FOR STATE USE ONLY) Begin Ref. Point _____ End Ref. Point _____

Highway No. _____ Along or Across Lanes of traffic 2 4
Direction N S E W Begin _____ feet from reference marker _____
Direction N S E W End _____ feet from reference marker _____
 N S E W from city of _____ or _____ miles from junction highway _____

LOCATION NO. _____ (FOR STATE USE ONLY) Begin Ref. Point _____ End Ref. Point _____

Highway No. _____ Along or Across Lanes of traffic 2 4
Direction N S E W Begin _____ feet from reference marker _____
Direction N S E W End _____ feet from reference marker _____
 N S E W from city of _____ or _____ miles from junction highway _____

LOCATION NO. _____ (FOR STATE USE ONLY) Begin Ref. Point _____ End Ref. Point _____

Highway No. _____ Along or Across Lanes of traffic 2 4
Direction N S E W Begin _____ feet from reference marker _____
Direction N S E W End _____ feet from reference marker _____
 N S E W from city of _____ or _____ miles from junction highway _____

INTERSTATE HIGHWAYS - Applicant's description of the proposed method of ingress and egress to and from interstate right of way, as attached to the plan.

By

Risk Management Appendix

Permits and Licenses 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., permit or license). 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, from insurance companies, government self-insurance pools or government self-retention funds authorized to do business in North Dakota, the following insurance coverages covering the Recipient for any an all claims of any nature which may in any manner arise out of or result from this agreement:

- 1) **Commercial general liability and automobile liability** insurance – minimum limits of liability required are **\$250,000 per person and \$1,000,000 per occurrence.**
- 2) **Workers compensation** insurance meeting all statutory limits.
- 3) The State of North Dakota and its agencies, officers, and employees (State) shall be endorsed as an **additional** insured on the commercial general liability and automobile liability policies.
- 4) Said endorsements shall contain a **"Waiver of Subrogation"** in favor of the state of North Dakota.
- 5) The policies and endorsements may not be canceled or modified without **thirty (30) days prior written notice** to the undersigned State representative.

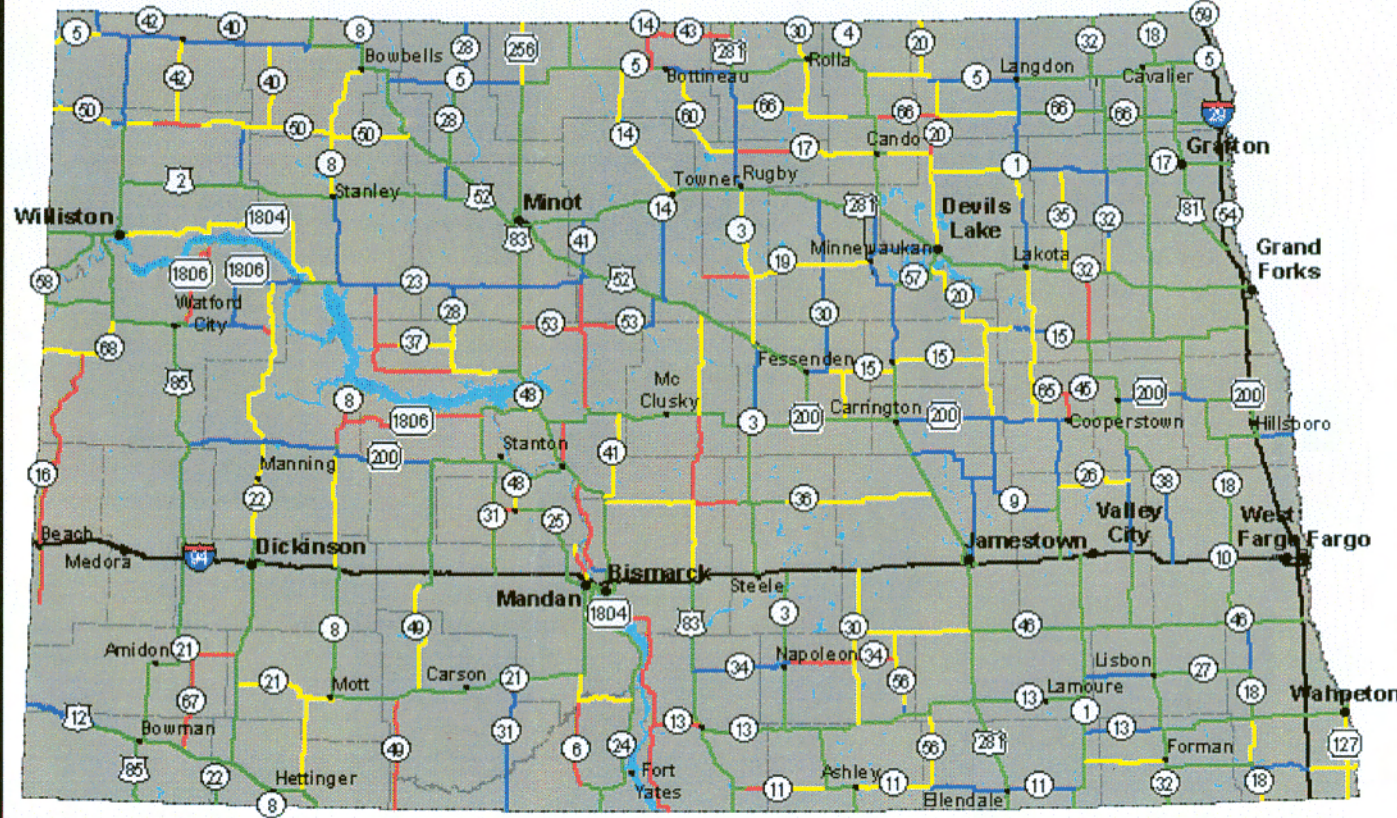
Recipient shall furnish a certificate of insurance evidencing the requirements in 1, 3, 4, and 5 above to the undersigned State representative prior to commencement of this agreement.

The State reserves the right to obtain complete, certified copies of all required insurance documents, policies, or endorsements at any time. If Recipient's insurance will expire prior to the term of this agreement, Recipient shall renew the above requirements and furnish a certificate of insurance evidencing the renewal to the undersigned State representative prior to the expiration of the insurance. Any attorney who represents the State under this policy must first qualify as and be appointed by the North Dakota Attorney General as a Special Assistant Attorney General as required under N.D.C.C. Section 54-12-08.

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. 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 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.

Recipient's insurance coverage shall be primary (i.e., pay first) as respects any insurance, self-insurance or self-retention maintained by the State. Any insurance, self-insurance or self-retention maintained by the State shall be excess of the Recipient's insurance and shall not contribute with it. Any deductible amount or other obligations under the policy(ies) shall be the sole responsibility of the Recipient. This insurance may be in policy or policies of insurance, primary and excess, including the so-called umbrella or catastrophe form and be placed with insurers rated "A-" or better by A.M. Best Company, Inc. The State will be indemnified, saved, and held harmless to the full extent of any coverage actually secured by the Recipient in excess of the minimum requirements set forth above.

North Dakota Load Limit Restrictions



Restrictions in Effect

Interstate System

by Legal Weight

Single Axle	20,000 lbs
Tandem Axle	34,000 lbs
3 or more per Axle	17,000 lbs
Max. Axle Group	48,000 lbs
Gross Weight	105,500 lbs

8 - Ton

Single Axle	16,000 lbs
Tandem Axle	32,000 lbs
3 or more per Axle	14,000 lbs
Max. Axle Group	42,000 lbs
Gross Weight	105,500 lbs

7 - Ton

Single Axle	14,000 lbs
Tandem Axle	28,000 lbs
3 or more per Axle	12,000 lbs
Max. Axle Group	36,000 lbs
Gross Weight	105,500 lbs

6 - Ton

Single Axle	12,000 lbs
Tandem Axle	24,000 lbs
3 or more per Axle	10,000 lbs
Max. Axle Group	30,000 lbs
Gross Weight	80,000 lbs

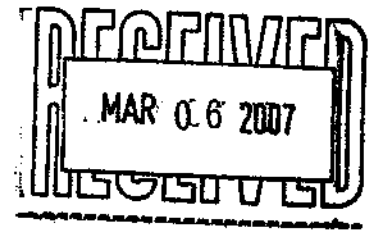
Phone #'s

Highway Patrol	(701)328-2621
NDDOT Office	(701)328-2545
Bismarck	(701)328-6950
Valley City	(701)845-8800
Devils Lake	(701)665-5100
Minot	(701)837-7625
Dickinson	(701)227-6500
Grand Forks	(701)787-6500
Williston	(701)774-2700
Fargo	(701)239-8900

Call Highway Patrol for vehicle size/weight and permits.
 Call NDDOT Office for questions regarding FAX Distribution
 Call 511 for enroute information

North Dakota has compiled this map according to conventional cartographic standards, using what is thought to be the most reliable information available. North Dakota does not guarantee freedom from errors or inaccuracies and disclaims any legal responsibility or liability for interpretations made from the map, or decisions based thereon.

Cameron D. Sillers, P.C.
ATTORNEY AT LAW



908 Third Street
Langdon, North Dakota 58249
(701) 256-3717

Fax: (701) 256-3720
e-mail: csillers@utma.com
Residence: (701) 256-2386

February 21, 2007

Tetra Tech
Haven Westerman
618 South 25th Street
Billings, MT 59101

RE: Wildlife Easement / FPL Energy Project

Dear Ms. Westerman:

This office represents the Cavalier County Water Resource Board. William S. Hardy, Chairman of the Board, has asked that I respond to a letter from the Fish and Wildlife service concerning easements held by the Board in Sections 29 & 32, Township 159-59. (A copy is enclosed for your information).

It is my understanding that your company contacted the U.S. Fish and Wildlife service concerning the above descriptions in relationship to an energy project, which you are involved in. The Board has an easement on the above descriptions which include 18 acres of wetland located on the property. I am enclosing a copy of an aerial map of the two sections which marks the protected wetlands. It would be the Board's position, that as long as your company's activities do not adversely affect any of the wetlands located on the property, they have no objection to Tetra Tech utilizing this particular land in their energy project.

If you need additional information, or have any further questions, please contact my office.

Sincerely yours,


CAMERON D. SILLERS
Attorney at Law

CDS: kse
Enclosure(s): Map, Letter from Fish and Wildlife Service
copy: File



United States Department of the Interior



FISH AND WILDLIFE SERVICE Wetland Management District

P.O. Box 908
Devils Lake, ND 58301
PH: 701/662-8611
February 9, 2007

William S. Hardy, Chairman
Cavalier County Water Resource Board
901 Third Street
Langdon, ND 58249

CAVALIER COUNTY
FAIRDALE DRAIN/CA 251X

Dear Mr. Hardy:

This letter is in reference to our telephone conversation from yesterday regarding a wind energy proposal that may include land in T.159N., R.59W., sections 29 and 32. The conversation centered on easements within the above cited tracts.

A consulted firm, Tetra Tech, had contacted me inquiring what interests the U.S. Fish and Wildlife Service (Service) had in the area that may pertain to an energy project. Records showed the Service has some fee and easement interests as well as an easement in sections 29 and 32 that was held by the Cavalier Water Resource Board (Board).

Tetra Tech has been inquiring what can and can not be done within these two sections and where the protected wetlands are. Since this easement is held by the Board, the Board and not the Service should provide this information to Tetra Tech.

I have included a copy of the easement as recorded at the Register of Deeds, a copy of the Easement Conveyance, a copy of the original map showing the wetlands protected by the easement for these two tracts, and a copy of those wetlands over a 2006 aerial photograph.

Tetra Tech would like for the Board to contact them and explain the locations of the protected wetlands to them to insure that any projects related to the wind energy project do not conflict with the easement. Tetra Tech's contact person is: Ms. Tracey Martorano, 617-457-8272.

If you have any questions, feel free to contact me at: 701-662-8611 ext. 330.

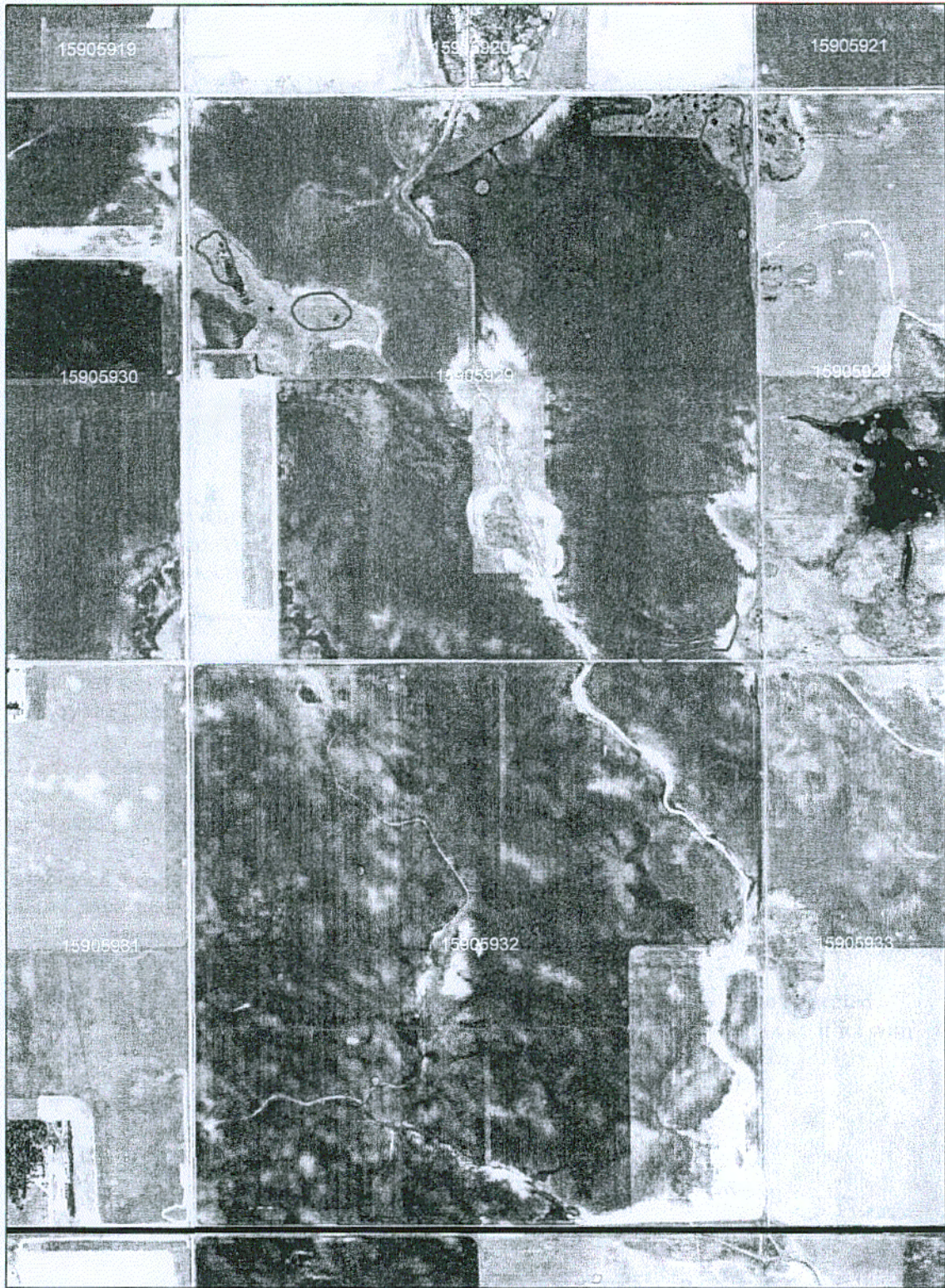
Sincerely,

Neil Shook
Refuge Manager
Northern Unit

Enclosures

:159N.
:158N.





Approximate location of wetlands covered by Cavalier WBP easement

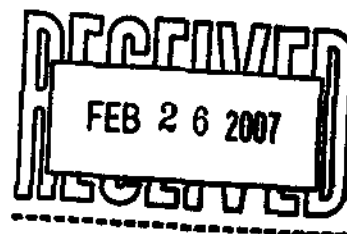
United States Department of Agriculture



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: Feb. 23, 2007



Subject: Project No. 7551118.100
Proposed Langdon Wind Energy Center

I recently received a copy of your letter to the NRCS seeking comments on environmental concerns regarding the proposed project in Cavalier County, ND. I apologize for the delay in response. I did not receive the letter until Feb. 7th due to a transition in personnel at our Langdon office.

I am enclosing a series of prime farmland maps generated through Web Soil Survey (which can be accessed by the public at this website: <http://websoilsurvey.nrcs.usda.gov> (see enclosed leaflet). 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. 7551118.100 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. As I am not familiar with land area requirements for each generator or the typical spacing of generators, I cannot predict how much land would be converted directly or indirectly by your proposed project. Form AD-1006 would not be required (and cannot be completed) until you have proposed specific sites for installation of the generators. When your project reaches that point, then a copy of Form AD-1006 will be required 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.

The Natural Resources Conservation Service provides leadership in a partnership effort to help people
Conserve, maintain, and improve our natural resources.

An Equal Opportunity Provider and Employer

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 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 Vallers 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 Vallers 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:

- F147D Buse-Barnes-Darnen loams, 6 to 15 percent slopes (strongly sloping soils with loam/clay loam substratums)**
- F147F Buse-Barnes-Darnen loams, 9 to 35 percent slopes (strongly sloping soils with loam/clay loam substratums)**
- F270A Arvilla sandy loam, 0 to 2 percent slopes (soil with gravelly substratums)**
- F286C Fordville-Sioux complex, 2 to 9 percent slopes (soils with gravelly substratums)**
- F308A Brantford loam, 0 to 2 percent slopes (soils with shaly gravel 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)**
- F592F Kloten-Walsh-Edgeley loams, 6 to 35 percent slopes (shaly soils along the steep breaks to South Branch Park River)**

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 accruing 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**
- F143D**
- F144B**
- F147C**
- F154B**

I am enclosing a blank copy of Form AD-1006 for your use once you narrow down your site alternatives. Attached to the form are instructions for completing the parts of the form that would be your responsibility.

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.

Please let me know if I can be of further assistance.

Sincerely,


Alan R. Gulsvig
Area Resource Soil Scientist
Ph. (701) 662-7967 ext. 128



















FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 25,26,35,36 - T.161N., R.60W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <}>

-  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
-  Soil Map Units
-  Water
-  Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	16.0	0.8
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	78.2	4.0
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	480.8	24.6
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	6.0	0.3
F116A	Easby clay loam, 0 to 1 percent slopes	Not prime farmland	4.0	0.2
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	129.8	6.6
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	506.0	25.9
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	50.5	2.6
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	162.6	8.3
F128A	Ferney-Cavour loams, 0 to 3 percent slopes	Not prime farmland	16.8	0.9
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	270.0	13.8
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	97.9	5.0
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	11.4	0.6
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	3.3	0.2
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	78.5	4.0

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	37.8	1.9
FGp	Pits, gravel and sand	Not prime farmland	5.2	0.3

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	41.4	1.6
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	127.7	4.9
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	528.2	20.4
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	165.3	6.4
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	159.4	6.1
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	214.3	8.3
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	129.2	5.0
F128A	Ferney-Cavour loams, 0 to 3 percent slopes	Not prime farmland	23.5	0.9
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	75.7	2.9
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	282.4	10.9
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	386.4	14.9
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	69.9	2.7
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	338.3	13.0
F286C	Fordville-Sioux complex, 2 to 9 percent slopes	Not prime farmland	43.2	1.7
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	8.9	0.3

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 1,2,11,12 - T.159N., R.60W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <}>

■ 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

■ Soil Map Units

■ Water

-Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	36.6	1.4
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	2.2	0.1
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	254.3	9.7
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	987.4	37.7
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	7.0	0.3
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	89.8	3.4
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	126.0	4.8
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	8.4	0.3
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	291.8	11.1
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	11.7	0.4
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	53.4	2.0
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	716.5	27.4
F286C	Fordville-Sioux complex, 2 to 9 percent slopes	Not prime farmland	34.0	1.3

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower



















FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 13, ²⁴14 - T.159N., R.60W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <}>

-  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
-  Soil Map Units
-  Water
-  Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	37.7	2.8
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	12.4	0.9
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	27.5	2.0
F45A	Colvin silty clay loam, 0 to 1 percent slopes	Prime farmland if drained	12.7	0.9
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	260.1	19.4
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	82.7	6.2
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	35.3	2.6
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	78.6	5.9
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	31.0	2.3
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	151.5	11.3
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	274.6	20.5
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	183.6	13.7
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	153.9	11.5

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

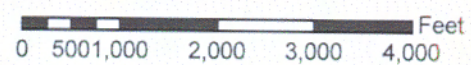
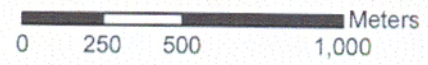
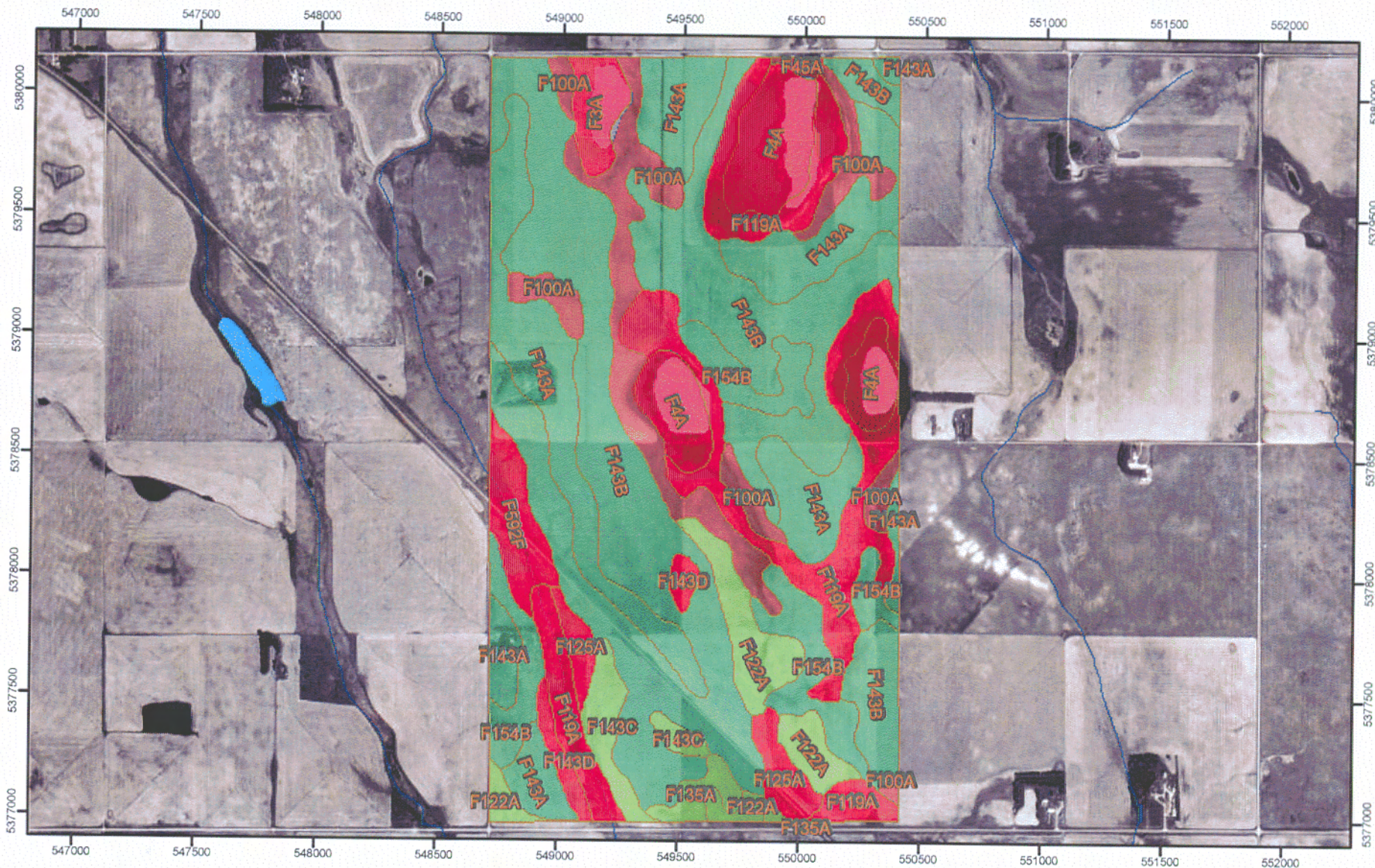
Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 25,36 - T.159N., R.60W.





















FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 25,36 - T.159N., R.60W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <}>

-  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
-  Soil Map Units
-  Water
-  Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	21.9	1.6
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	88.0	6.6
F45A	Colvin silty clay loam, 0 to 1 percent slopes	Prime farmland if drained	3.0	0.2
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	115.5	8.6
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	171.0	12.8
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	58.6	4.4
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	26.6	2.0
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	13.3	1.0
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	240.2	18.0
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	436.9	32.7
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	26.5	2.0
F143D	Barnes-Buse-Langhei loams, 9 to 15 percent slopes	Not prime farmland	15.2	1.1
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	89.8	6.7
F592F	Kloten-Walsh-Edgeley loams, 6 to 35 percent slopes	Not prime farmland	30.4	2.3

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 19,20,29,30 - T.161N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <)}</p></div><div>

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

Soil Map Units

Water

-Hydrography

MAP INFORMATION Source of Map: Natural Resources Conservation Service Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov> Coordinate System: UTM Zone 14 Soil Survey Area: Cavalier County, North Dakota Spatial Version of Data: 2 Soil Map Compilation Scale: 1:20000 Map comprised of aerial images photographed on these dates: 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. USDA Natural Resources Conservation Service Web Soil Survey 1.1 National Cooperative Soil Survey 2/21 /2007 Page 2 of 4

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F10A	Roliss silt loam, 0 to 1 percent slopes	Not prime farmland	44.0	1.7
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	59.9	2.3
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	147.8	5.7
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	27.0	1.0
F116A	Easby clay loam, 0 to 1 percent slopes	Not prime farmland	13.0	0.5
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	315.6	12.2
F120A	Vallers saline-Manfred complex, 0 to 1 percent slopes	Not prime farmland	41.4	1.6
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	500.9	19.4
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	91.4	3.5
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	416.9	16.1
F128A	Ferney-Cavour loams, 0 to 3 percent slopes	Not prime farmland	15.3	0.6
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	370.9	14.4
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	385.6	14.9
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	116.7	4.5
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	16.2	0.6

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F302A	Vang loam, 0 to 2 percent slopes	All areas are prime farmland	6.5	0.3
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	14.5	0.6

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

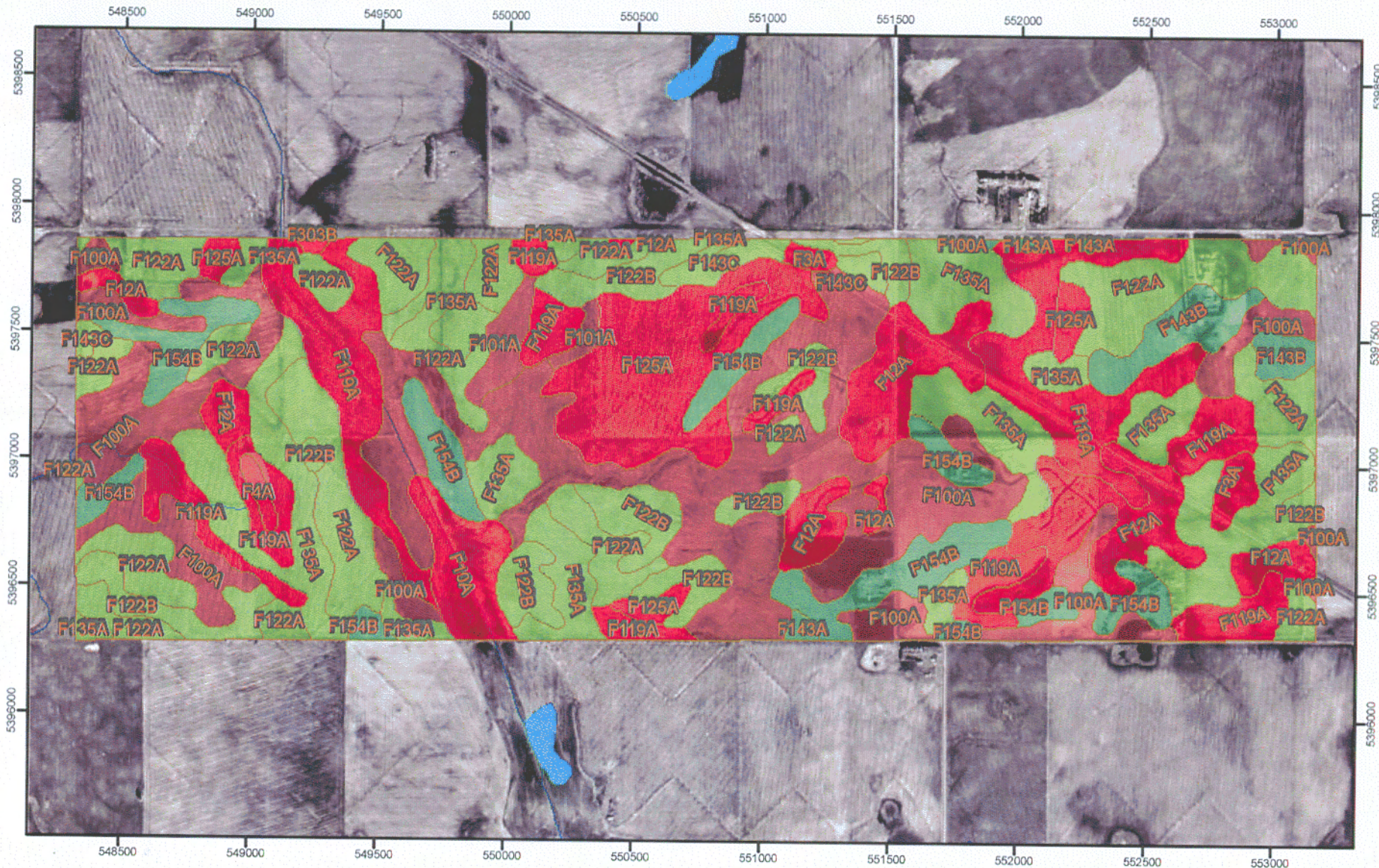
Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 31,32,33 - T.161N., R.59W.



FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 31,32,33 - T.161N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <it>}</p></div><div>

■ Not prime farmland</p></div><div>

■ All areas are prime farmland</p></div><div>

■ Prime farmland if drained</p></div><div>

■ Prime farmland if protected from flooding or not frequently flooded during the growing season</p></div><div>

■ Prime farmland if irrigated</p></div><div>

■ Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season</p></div><div>

■ Prime farmland if irrigated and drained</p></div><div>

■ Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season</p></div><div>

■ Prime farmland if subsoiled, completely removing the root inhibiting soil layer</p></div><div>

■ Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60</p></div><div>

■ Prime farmland if irrigated and reclaimed of excess salts and sodium</p></div><div>

■ Farmland of statewide importance</p></div><div>

■ Farmland of local importance</p></div><div>

■ Farmland of unique importance</p></div><div>

■ Not rated or not available</p></div><div>

■ Soil Map Units</p></div><div>

■ Water</p></div><div>

-Hydrography</p></div><div>

MAP INFORMATION Source of Map: Natural Resources Conservation Service</p></div><div> Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov></p></div><div> Coordinate System: UTM Zone 14</p></div><div> Soil Survey Area: Cavalier County, North Dakota</p></div><div> Spatial Version of Data: 2</p></div><div> Soil Map Compilation Scale: 1:20000</p></div><div> Map comprised of aerial images photographed on these dates: 9/13/1997; 10/15/1997</p></div><div> 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.</p></div><div> USDA Natural Resources Conservation Service</p></div><div> Web Soil Survey 1.1 National Cooperative Soil Survey</p></div><div> 2/21 /2007 Page 2 of 4</p></div>

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	13.7	0.7
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	4.8	0.3
F10A	Roliss silt loam, 0 to 1 percent slopes	Not prime farmland	37.2	1.9
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	157.5	8.3
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	414.5	21.7
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	20.1	1.1
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	259.6	13.6
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	274.7	14.4
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	122.9	6.4
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	128.0	6.7
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	277.7	14.6
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	6.2	0.3
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	37.4	2.0
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	19.0	1.0
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	133.1	7.0

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	1.5	0.1

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower



















FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 34,35,36 - T.161N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <}>

-  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
-  Soil Map Units
-  Water
-  Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	70.0	3.6
F10A	Roliss silt loam, 0 to 1 percent slopes	Not prime farmland	33.6	1.7
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	100.7	5.2
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	221.8	11.4
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	12.0	0.6
F116A	Easby clay loam, 0 to 1 percent slopes	Not prime farmland	3.4	0.2
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	151.9	7.8
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	378.0	19.4
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	93.9	4.8
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	303.8	15.6
F128A	Ferney-Cavour loams, 0 to 3 percent slopes	Not prime farmland	21.9	1.1
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	173.7	8.9
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	208.5	10.7
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	46.2	2.4
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	26.5	1.4

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F143D	Barnes-Buse-Langhei loams, 9 to 15 percent slopes	Not prime farmland	10.1	0.5
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	8.6	0.4
F302A	Vang loam, 0 to 2 percent slopes	All areas are prime farmland	54.2	2.8
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	27.6	1.4

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 1,2,3,10,11,12 - T.160N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <}>

- 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
- Soil Map Units
- Water
- Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	23.0	0.6
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	183.3	4.8
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	966.8	25.5
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	241.6	6.4
F120A	Vallers saline-Manfred complex, 0 to 1 percent slopes	Not prime farmland	28.2	0.7
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	206.9	5.5
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	111.4	2.9
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	638.5	16.8
F128A	Ferney-Cavour loams, 0 to 3 percent slopes	Not prime farmland	4.4	0.1
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	14.9	0.4
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	824.9	21.7
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	392.8	10.4
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	48.0	1.3
F143D	Barnes-Buse-Langhei loams, 9 to 15 percent slopes	Not prime farmland	6.9	0.2
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	103.6	2.7

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
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Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

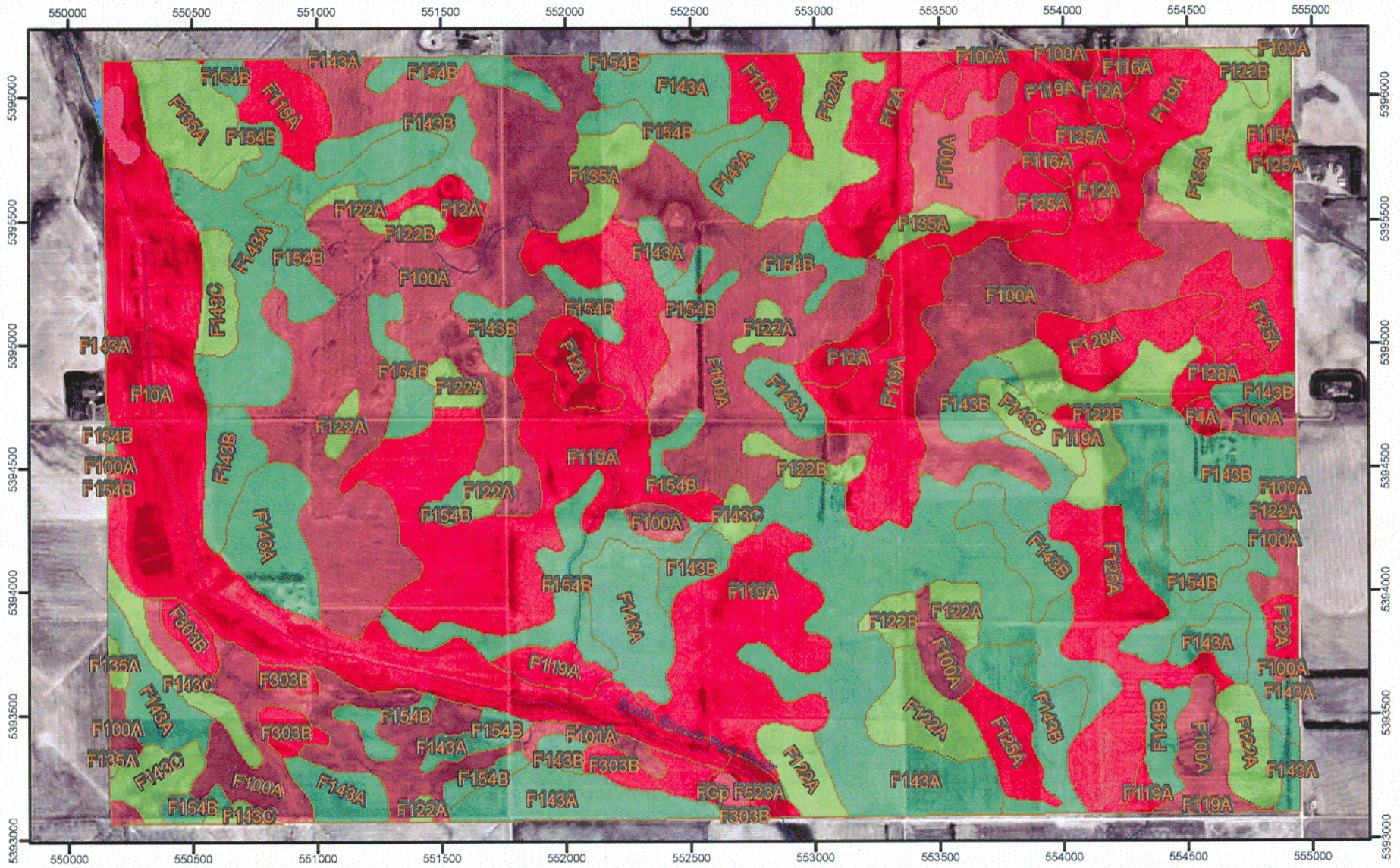
Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 4,5,6,7,8,9 - T.160N., R.59W.



FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 4,5,6,7,8,9 - T.160N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <)}</p></div>

-  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
-  Soil Map Units
-  Water
-  Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

 **USDA** Natural Resources
Conservation Service

Web Soil Survey 1.1
National Cooperative Soil Survey

2/21/2007
Page 2 of 4

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	4.5	0.1
F10A	Roliss silt loam, 0 to 1 percent slopes	Not prime farmland	278.7	7.6
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	128.7	3.5
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	825.2	22.4
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	10.7	0.3
F116A	Easby clay loam, 0 to 1 percent slopes	Not prime farmland	9.6	0.3
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	590.6	16.0
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	163.9	4.4
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	73.4	2.0
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	181.5	4.9
F128A	Ferney-Cavour loams, 0 to 3 percent slopes	Not prime farmland	49.0	1.3
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	131.2	3.6
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	564.0	15.3
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	298.9	8.1
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	79.4	2.2
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	239.8	6.5
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	43.2	1.2
F523A	Low loam, channeled, 0 to 2 percent slopes	Not prime farmland	9.5	0.3

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
FGp	Pits, gravel and sand	Not prime farmland	4.5	0.1

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower



















FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 13,14,15,22,23,24 - T.160N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, &It;}

-  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
-  Soil Map Units
-  Water
-  Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	9.4	0.3
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	64.6	1.7
F10A	Roliss silt loam, 0 to 1 percent slopes	Not prime farmland	14.4	0.4
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	91.3	2.4
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	1,002.3	26.8
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	166.2	4.4
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	311.8	8.3
F120A	Vallers saline-Manfred complex, 0 to 1 percent slopes	Not prime farmland	4.1	0.1
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	363.2	9.7
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	90.4	2.4
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	410.1	11.0
F128A	Ferney-Cavour loams, 0 to 3 percent slopes	Not prime farmland	37.7	1.0
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	453.3	12.1
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	342.4	9.1
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	148.7	4.0

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F147C	Buse-Barnes-Darnen loams, 3 to 9 percent slopes	Farmland of statewide importance	10.4	0.3
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	60.2	1.6
F254A	Divide loam, shaly, 0 to 2 percent slopes	All areas are prime farmland	43.5	1.2
F302A	Vang loam, 0 to 2 percent slopes	All areas are prime farmland	5.4	0.1
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	9.6	0.3
F308A	Brantford loam, 0 to 2 percent slopes	Not prime farmland	104.1	2.8

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 16,17,18,19,20,21 - T.160N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <};

- 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
- Soil Map Units
- Water
- Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota
Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	228.3	6.0
F10A	Roliss silt loam, 0 to 1 percent slopes	Not prime farmland	35.3	0.9
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	56.5	1.5
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	876.2	23.0
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	51.1	1.3
F116A	Easby clay loam, 0 to 1 percent slopes	Not prime farmland	4.2	0.1
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	301.4	7.9
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	435.4	11.4
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	25.9	0.7
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	125.8	3.3
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	101.5	2.7
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	818.4	21.4
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	297.4	7.8
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	45.9	1.2
F147C	Buse-Barnes-Darnen loams, 3 to 9 percent slopes	Farmland of statewide importance	94.7	2.5
F147D	Buse-Barnes-Darnen loams, 6 to 15 percent slopes	Not prime farmland	19.5	0.5
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	121.6	3.2

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F254A	Divide loam, shaly, 0 to 2 percent slopes	All areas are prime farmland	14.7	0.4
F302A	Vang loam, 0 to 2 percent slopes	All areas are prime farmland	30.9	0.8
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	30.6	0.8
F303C	Vang-Coe complex, 6 to 9 percent slopes	Not prime farmland	11.7	0.3
F523A	Lowe loam, channeled, 0 to 2 percent slopes	Not prime farmland	89.5	2.3

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 25,26,27,34,35,36 - T.160N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <}>

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

Soil Map Units

Water

-Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	63.0	1.7
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	138.8	3.7
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	655.7	17.4
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	120.3	3.2
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	87.4	2.3
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	838.5	22.3
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	101.7	2.7
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	74.0	2.0
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	755.3	20.1
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	343.8	9.1
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	105.3	2.8
F147C	Buse-Barnes-Darnen loams, 3 to 9 percent slopes	Farmland of statewide importance	23.1	0.6
F147D	Buse-Barnes-Darnen loams, 6 to 15 percent slopes	Not prime farmland	118.3	3.1
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	160.5	4.3
F302A	Vang loam, 0 to 2 percent slopes	All areas are prime farmland	11.4	0.3
F308A	Brantford loam, 0 to 2 percent slopes	Not prime farmland	55.4	1.5
F523A	Lowe loam, channeled, 0 to 2 percent slopes	Not prime farmland	110.3	2.9

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

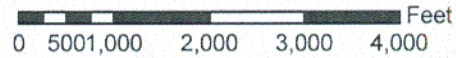
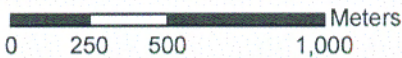
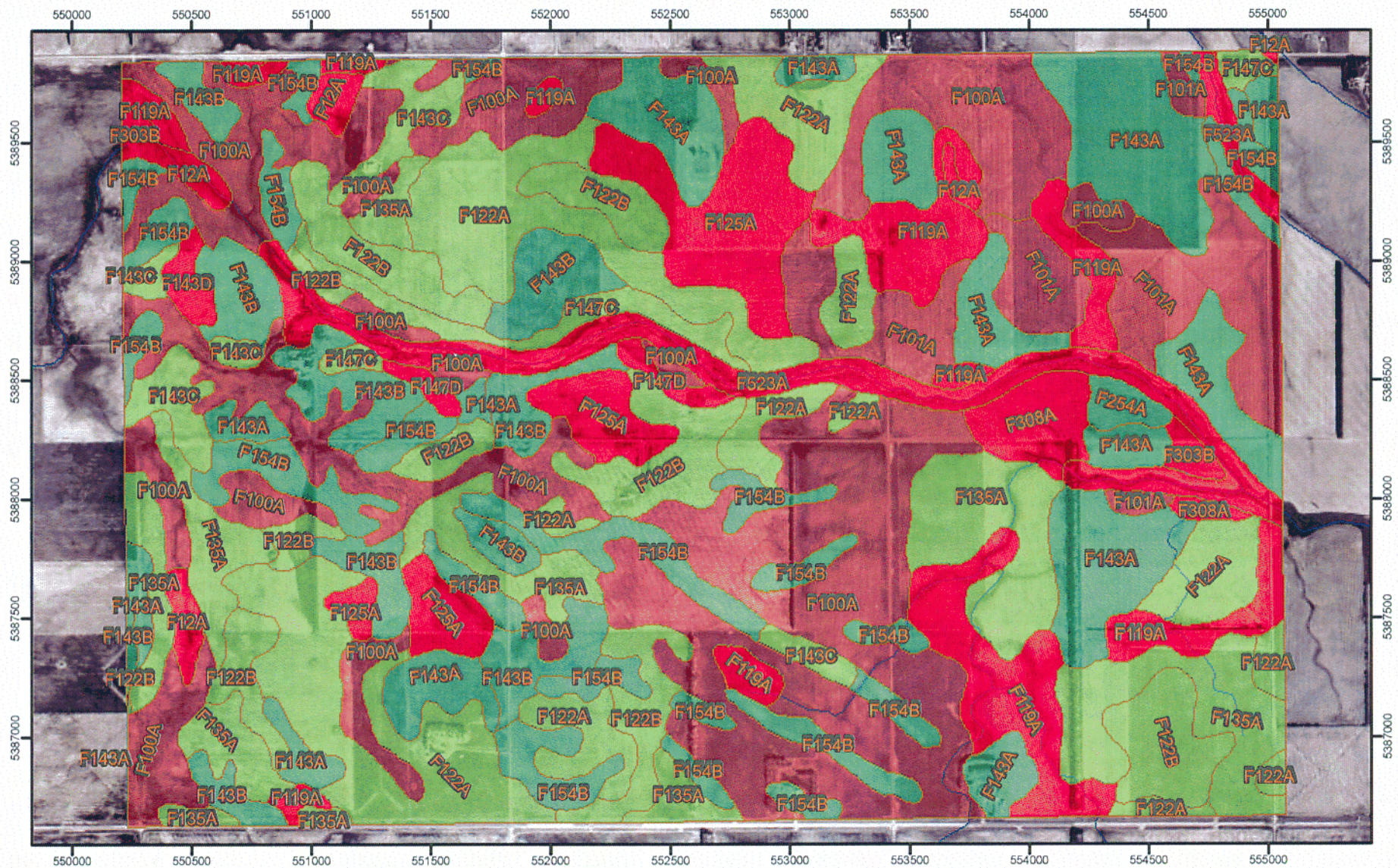
Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 28,29,30,31,32,33 -T.160N., R.59W.



FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 28,29,30,31,32,33 -T.160N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, &It;}

- 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
- Soil Map Units
- Water
- Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	1.6	0.0
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	42.6	1.1
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	839.6	21.6
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	202.8	5.2
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	247.6	6.4
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	446.7	11.5
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	263.8	6.8
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	168.2	4.3
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	340.8	8.8
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	427.7	11.0
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	220.2	5.7
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	76.8	2.0
F143D	Barnes-Buse-Langhei loams, 9 to 15 percent slopes	Not prime farmland	14.0	0.4
F147C	Buse-Barnes-Darnen loams, 3 to 9 percent slopes	Farmland of statewide importance	54.1	1.4
F147D	Buse-Barnes-Darnen loams, 6 to 15 percent slopes	Not prime farmland	17.8	0.5
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	278.4	7.2
F254A	Divide loam, shaly, 0 to 2 percent slopes	All areas are prime farmland	13.6	0.4

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	12.4	0.3
F308A	Brantford loam, 0 to 2 percent slopes	Not prime farmland	46.1	1.2
F523A	Lowe loam, channeled, 0 to 2 percent slopes	Not prime farmland	165.6	4.3

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

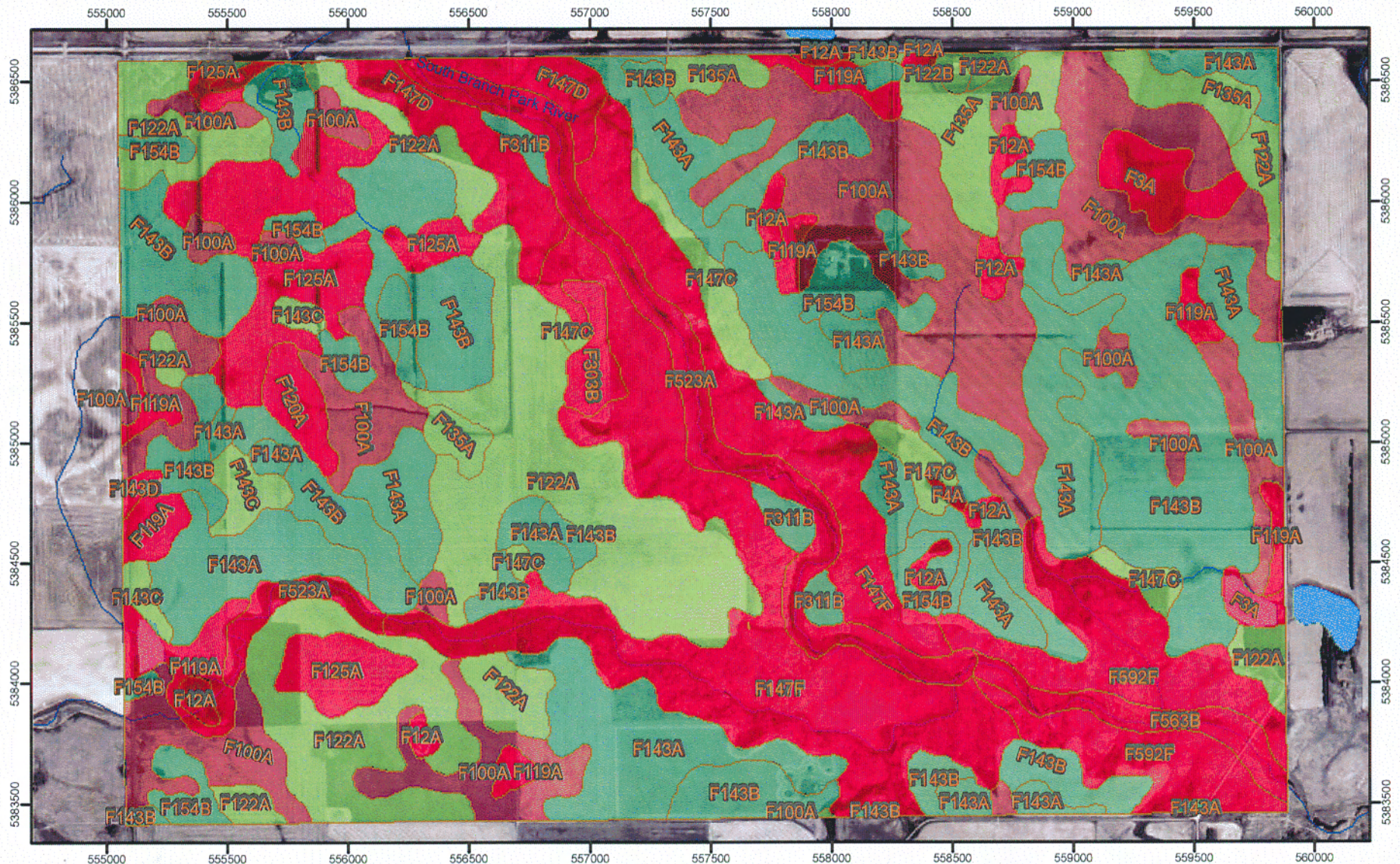
Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 1,2,3,10,11,12 -T.159N., R.59W.



FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 1,2,3,10,11,12 -T.159N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, &It;}

■ 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

■ Soil Map Units

■ Water

■ Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
9/13/1997; 10/15/1997

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Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	44.4	1.2
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	2.7	0.1
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	47.5	1.3
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	585.4	15.4
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	101.1	2.7
F120A	Vallers saline-Manfred complex, 0 to 1 percent slopes	Not prime farmland	23.1	0.6
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	472.0	12.4
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	4.8	0.1
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	168.3	4.4
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	110.5	2.9
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	468.1	12.3
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	664.8	17.5
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	32.4	0.9
F143D	Barnes-Buse-Langhei loams, 9 to 15 percent slopes	Not prime farmland	4.4	0.1
F147C	Buse-Barnes-Darnen loams, 3 to 9 percent slopes	Farmland of statewide importance	58.7	1.5
F147D	Buse-Barnes-Darnen loams, 6 to 15 percent slopes	Not prime farmland	87.2	2.3

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F147F	Buse-Barnes-Darnen loams, 9 to 35 percent slopes	Not prime farmland	448.1	11.8
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	84.2	2.2
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	21.0	0.6
F311B	Walsh-Vang loams, 2 to 6 percent slopes	All areas are prime farmland	23.6	0.6
F523A	Lowe loam, channeled, 0 to 2 percent slopes	Not prime farmland	139.2	3.7
F563B	Fairdale loam, channeled, 0 to 2 percent slopes	Not prime farmland	39.0	1.0
F592F	Kloten-Walsh-Edgeley loams, 6 to 35 percent slopes	Not prime farmland	168.9	4.4

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

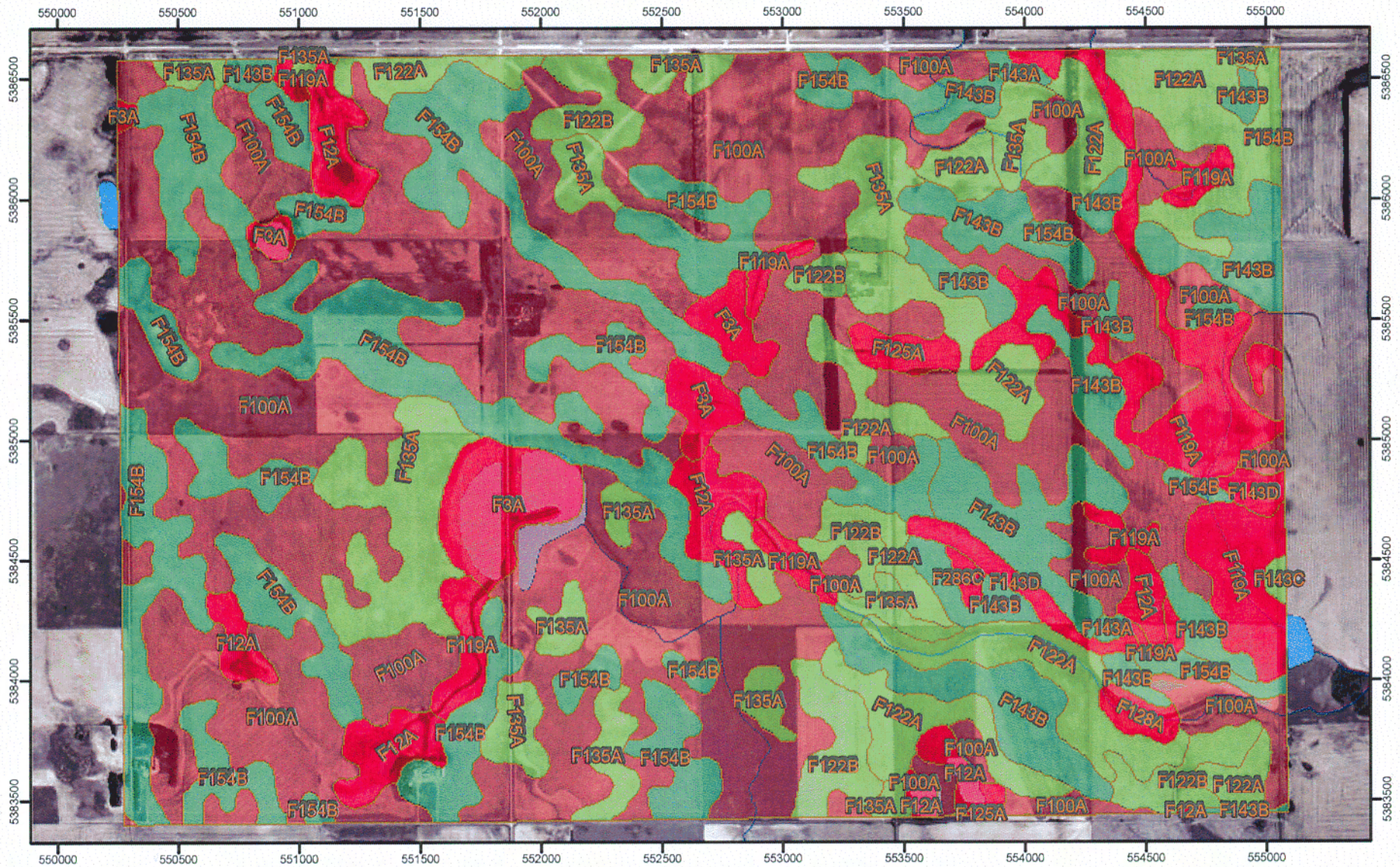
Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 4,5,6,7,8,9 -T.159N., R.59W.





















FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 4,5,6,7,8,9 -T.159N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <}>

-  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
-  Soil Map Units
-  Water
-  Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	110.3	2.9
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	132.8	3.5
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	1,508.4	39.5
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	241.4	6.3
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	353.4	9.3
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	109.6	2.9
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	17.7	0.5
F128A	Ferney-Cavour loams, 0 to 3 percent slopes	Not prime farmland	12.4	0.3
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	283.0	7.4
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	8.3	0.2
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	328.6	8.6
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	3.4	0.1
F143D	Barnes-Buse-Langhei loams, 9 to 15 percent slopes	Not prime farmland	32.1	0.8
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	672.6	17.6
F286C	Fordville-Sioux complex, 2 to 9 percent slopes	Not prime farmland	5.8	0.2

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

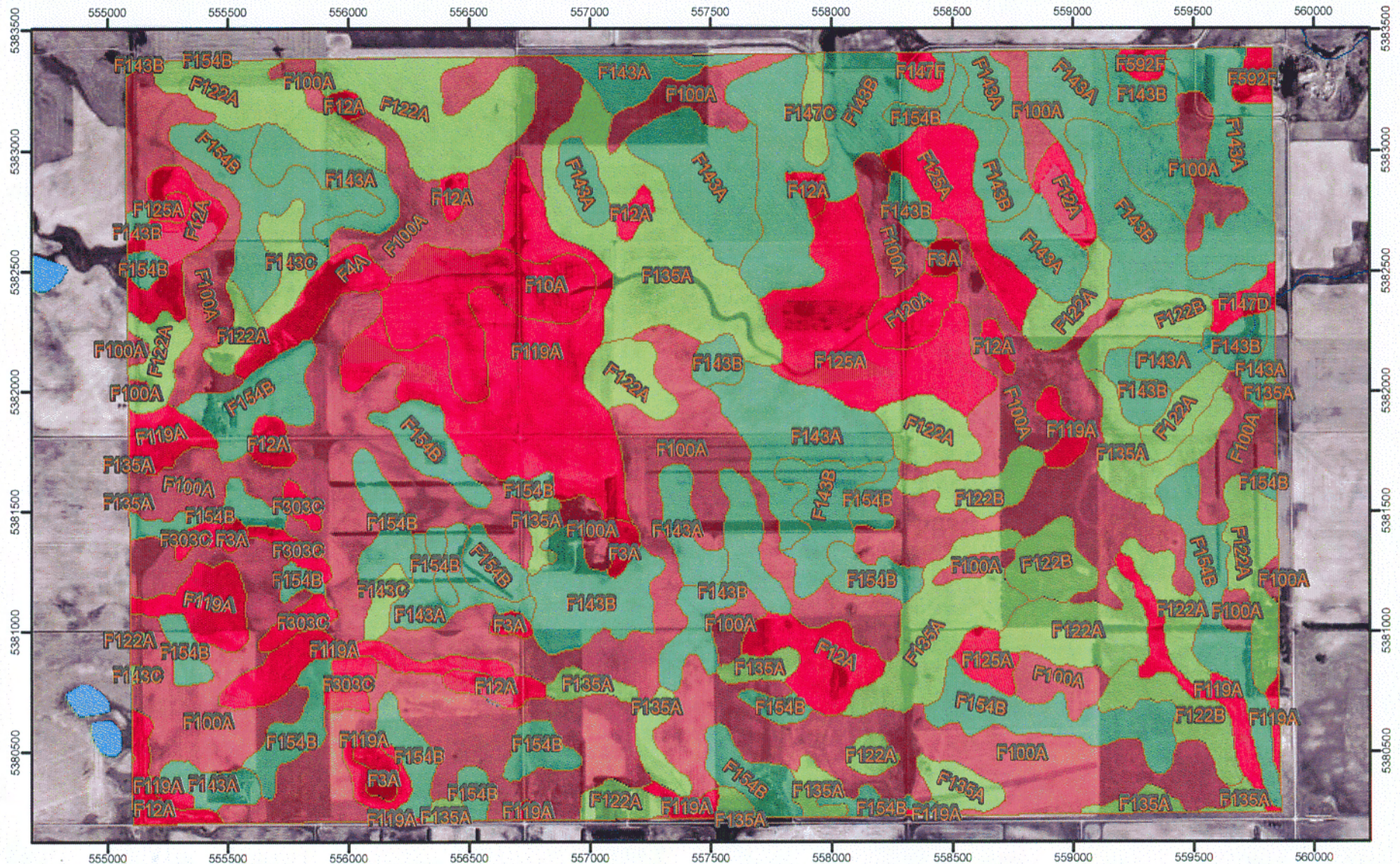
Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 13,14,15,22,23,24 -T.159N., R.59W.



FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 13,14,15,22,23,24 -T.159N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, &It;}

- 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
- Soil Map Units
- Water
- Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	24.9	0.7
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	26.5	0.7
F10A	Roliss silt loam, 0 to 1 percent slopes	Not prime farmland	71.6	1.9
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	138.2	3.7
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	1,114.6	29.6
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	284.2	7.6
F120A	Vallers saline-Manfred complex, 0 to 1 percent slopes	Not prime farmland	19.9	0.5
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	324.4	8.6
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	91.8	2.4
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	157.0	4.2
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	266.6	7.1
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	399.1	10.6
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	351.3	9.3
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	25.5	0.7

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F147C	Buse-Barnes-Darnen loams, 3 to 9 percent slopes	Farmland of statewide importance	8.6	0.2
F147D	Buse-Barnes-Darnen loams, 6 to 15 percent slopes	Not prime farmland	9.0	0.2
F147F	Buse-Barnes-Darnen loams, 9 to 35 percent slopes	Not prime farmland	5.8	0.2
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	394.9	10.5
F303C	Vang-Coe complex, 6 to 9 percent slopes	Not prime farmland	35.8	1.0
F592F	Kloten-Walsh-Edgeley loams, 6 to 35 percent slopes	Not prime farmland	13.5	0.4

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower



















FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 16,17,18,19,20,21 -T.159N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <}>

-  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
-  Soil Map Units
-  Water
-  Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	99.3	2.6
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	35.2	0.9
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	147.0	3.8
F45A	Colvin silty clay loam, 0 to 1 percent slopes	Prime farmland if drained	106.6	2.7
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	1,104.2	28.4
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	94.9	2.4
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	251.8	6.5
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	267.4	6.9
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	24.9	0.6
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	60.2	1.5
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	379.0	9.8
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	383.9	9.9
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	345.7	8.9
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	33.4	0.9
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	468.9	12.1

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F286C	Fordville-Sioux complex, 2 to 9 percent slopes	Not prime farmland	16.0	0.4
F302A	Vang loam, 0 to 2 percent slopes	All areas are prime farmland	6.8	0.2
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	57.2	1.5

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 25,26,27,34,35,36 -T.159N., R.59W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, The legend symbols consist of colored squares and rectangles next to their corresponding text descriptions. The colors used include white, red, yellow, green, blue, and black.

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

Soil Map Units

Water

Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	155.4	4.0
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	164.4	4.2
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	1,610.8	41.6
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	39.4	1.0
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	195.3	5.0
F120A	Vallers saline-Manfred complex, 0 to 1 percent slopes	Not prime farmland	87.5	2.3
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	124.1	3.2
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	104.6	2.7
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	495.8	12.8
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	35.6	0.9
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	30.2	0.8
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	30.7	0.8
F144B	Barnes-Buse loams, 3 to 6 percent slopes	Farmland of statewide importance	21.5	0.6
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	771.3	19.9

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F270A	Arvilla sandy loam, 0 to 2 percent slopes	Not prime farmland	8.3	0.2

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA


Sec. 28,29,30,31,32,33 -T.159N., R.59W.

MAP LEGEND


Farmland Classification

{No Aggregation Necessary, The legend symbols consist of colored squares and rectangles next to their corresponding text descriptions. The colors used are red, green, yellow, and blue.

 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

 Soil Map Units

 Water

-Hydrography

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 14

Soil Survey Area: Cavalier County, North Dakota

Spatial Version of Data: 2

Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
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.

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	87.5	2.3
F4A	Southam silty clay loam, 0 to 1 percent slopes	Not prime farmland	34.1	0.9
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	263.0	6.9
F45A	Colvin silty clay loam, 0 to 1 percent slopes	Prime farmland if drained	67.0	1.8
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	776.8	20.4
F101A	Hamerly-Wyard loams, 0 to 3 percent slopes	Prime farmland if drained	130.8	3.4
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	526.9	13.8
F120A	Vallers saline-Manfred complex, 0 to 1 percent slopes	Not prime farmland	2.3	0.1
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	166.1	4.4
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	28.1	0.7
F135A	Hamerly-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	157.5	4.1
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	586.0	15.4
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	461.5	12.1
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	40.5	1.1
F144B	Barnes-Buse loams, 3 to 6 percent slopes	Farmland of statewide importance	26.2	0.7

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	446.9	11.7
F303B	Vang-Coe complex, 2 to 6 percent slopes	Not prime farmland	6.8	0.2

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

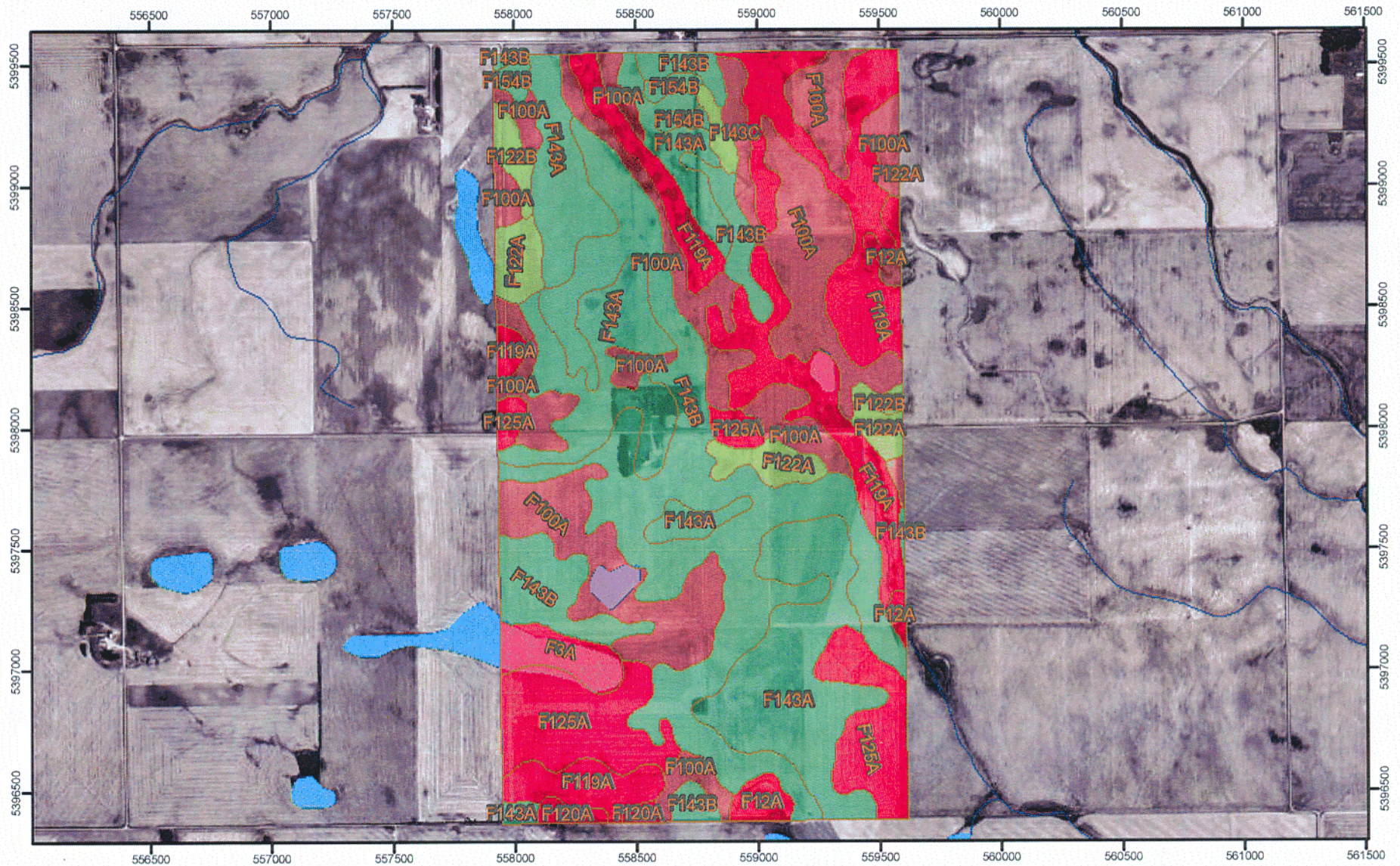
Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 30,31 - T.161N., R.58W.



0 250 500 1,000 Meters

0 500 1,000 2,000 3,000 4,000 Feet

FARMLAND CLASSIFICATION RATING FOR CAVALIER COUNTY, NORTH DAKOTA

Sec. 30,31 - T.161N., R.58W.

MAP LEGEND

Farmland Classification

{No Aggregation Necessary, <it>}</p></div><div>

■ Not prime farmland</p></div><div>

■ All areas are prime farmland</p></div><div>

■ Prime farmland if drained</p></div><div>

■ Prime farmland if protected from flooding or not frequently flooded during the growing season</p></div><div>

■ Prime farmland if irrigated</p></div><div>

■ Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season</p></div><div>

■ Prime farmland if irrigated and drained</p></div><div>

■ Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season</p></div><div>

■ Prime farmland if subsoiled, completely removing the root inhibiting soil layer</p></div><div>

■ Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60</p></div><div>

■ Prime farmland if irrigated and reclaimed of excess salts and sodium</p></div><div>

■ Farmland of statewide importance</p></div><div>

■ Farmland of local importance</p></div><div>

■ Farmland of unique importance</p></div><div>

■ Not rated or not available</p></div><div>

■ Soil Map Units</p></div><div>

■ Water</p></div><div>

-Hydrography</p></div><div>

MAP INFORMATION Source of Map: Natural Resources Conservation Service Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov></p></div><div> Coordinate System: UTM Zone 14</p></div><div> Soil Survey Area: Cavalier County, North Dakota</p></div><div> Spatial Version of Data: 2</p></div><div> Soil Map Compilation Scale: 1:20000</p></div><div> Map comprised of aerial images photographed on these dates: 9/13/1997</p></div><div> 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.</p></div><div> USDA Natural Resources Conservation Service</p></div><div> Web Soil Survey 1.1 National Cooperative Soil Survey</p></div><div> 2/22/2007 Page 2 of 4</p></div>

Tables - Farmland Classification

Summary by Map Unit - Cavalier County, North Dakota

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
F3A	Parnell silty clay loam, 0 to 1 percent slopes	Not prime farmland	21.9	1.7
F12A	Vallers saline-Parnell complex, 0 to 1 percent slopes	Not prime farmland	18.5	1.4
F100A	Hamerly-Tonka complex, 0 to 3 percent slopes	Prime farmland if drained	288.6	21.9
F119A	Vallers-Hamerly loams, saline, 0 to 3 percent slopes	Not prime farmland	211.5	16.0
F120A	Vallers saline-Manfred complex, 0 to 1 percent slopes	Not prime farmland	8.1	0.6
F122A	Svea-Cresbard loams, 0 to 3 percent slopes	Farmland of statewide importance	38.9	2.9
F122B	Barnes-Cresbard loams, 3 to 6 percent slopes	Farmland of statewide importance	13.8	1.0
F125A	Cavour-Cresbard loams, 0 to 3 percent slopes	Not prime farmland	117.9	8.9
F143A	Barnes-Svea loams, 0 to 3 percent slopes	All areas are prime farmland	265.5	20.1
F143B	Barnes-Svea loams, 3 to 6 percent slopes	All areas are prime farmland	316.2	24.0
F143C	Barnes-Buse-Langhei loams, 6 to 9 percent slopes	Farmland of statewide importance	6.4	0.5
F154B	Svea-Buse loams, 3 to 6 percent slopes	All areas are prime farmland	12.7	1.0

Description - Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. Farmland classification identifies the location and extent of the most suitable land for producing 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.

Parameter Summary - Farmland Classification

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request 3/4/04			
Name Of Project ABM Pipeline Improvements, NVWD		Federal Agency Involved USDA Rural Development			
Proposed Land Use 100,000-gallon Underground Water Reservoir		County And State Montrose Twp. Board & Cavalier Co. Commission			
PART II (To be completed by NRCS)		Date Request Received By NRCS			
Does the site contain prime, unique, statewide or local important farmland? <i>(If no, the FPPA does not apply – do not complete additional parts of this form).</i>		Yes <input type="checkbox"/>	No <input type="checkbox"/>	Acres Irrigated	Average Farm Size
Major Crop(s)	Farmable Land In Govt. Jurisdiction Acres: %	Amount Of Farmland As Defined In FPPA Acres: %			
Name Of Land Evaluation System Used	Name Of Local Site Assessment System	Date Land Evaluation Returned By NRCS			
PART III (To be completed by Federal Agency)		Alternative Site Rating			
		Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly		1.8			
B. Total Acres To Be Converted Indirectly		0.0			
C. Total Acres In Site		1.8	0.0	0.0	0.0
PART IV (To be completed by NRCS) Land Evaluation Information					
A. Total Acres Prime And Unique Farmland					
B. Total Acres Statewide And Local Important Farmland					
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted					
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value					
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)		0	0	0	0
PART VI (To be completed by Federal Agency) Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))		Maximum Points			
1. Area In Nonurban Use					
2. Perimeter In Nonurban Use					
3. Percent Of Site Being Farmed					
4. Protection Provided By State And Local Government					
5. Distance From Urban Builtup Area					
6. Distance To Urban Support Services					
7. Size Of Present Farm Unit Compared To Average					
8. Creation Of Nonfarmable Farmland					
9. Availability Of Farm Support Services					
10. On-Farm Investments					
11. Effects Of Conversion On Farm Support Services					
12. Compatibility With Existing Agricultural Use					
TOTAL SITE ASSESSMENT POINTS		160	0	0	0
PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)		100	0	0	0
Total Site Assessment (From Part VI above or a local site assessment)		160	0	0	0
TOTAL POINTS (Total of above 2 lines)		260	0	0	0
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Reason For Selection:					

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form.

Step 2 - Originator will send copies A, B and C together with maps indicating locations of site(s), to the Natural Resources Conservation Service (NRCS) local field office and retain copy D for their files. (Note: NRCS has a field office in most counties in the U.S. The field office is usually located in the county seat. A list of field office locations are available from the NRCS State Conservationist in each state).

Step 3 - NRCS will, within 45 calendar days after receipt of form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland.

Step 4 - In cases where farmland covered by the FPPA will be converted by the proposed project, NRCS field offices will complete Parts II, IV and V of the form.

Step 5 - NRCS will return copy A and B of the form to the Federal agency involved in the project. (Copy C will be retained for NRCS records).

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form.

Step 7 - The Federal agency involved in the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA and the agency's internal policies.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

Part I: In completing the "County And State" questions list all the local governments that are responsible for local land controls where site(s) are to be evaluated.

Part III: In completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities) that will cause a direct conversion.

Part VI: Do not complete Part VI if a local site assessment is used.

Assign the maximum points for each site assessment criterion as shown in § 658.5 (b) of CFR. In cases of corridor-type projects such as transportation, powerline and flood control, criteria #5 and #6 will not apply and will, be weighed zero, however, criterion #8 will be weighed a maximum of 25 points, and criterion #11 a maximum of 25 points.

Individual Federal agencies at the national level, may assign relative weights among the 12 site assessment criteria other than those shown in the FPPA rule. In all cases where other weights are assigned relative adjustments must be made to maintain the maximum total weight points at 160.

In rating alternative sites, Federal agencies shall consider each of the criteria and assign points within the limits established in the FPPA rule. Sites most suitable for protection under these criteria will receive the highest total scores, and sites least suitable, the lowest scores.

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, adjust the site assessment points to a base of 160. Example: if the Site Assessment maximum is 200 points, and alternative Site "A" is rated 180 points:

Total points assigned Site A = $\frac{180}{200} \times 160 = 144$ points for Site "A."

Maximum points possible 200

Site Assessment Scoring for the Twelve Factors Used in FPPA

The Site Assessment criteria used in the Farmland Protection Policy Act (FPPA) rule are designed to assess important factors other than the agricultural value of the land when determining which alternative sites should receive the highest level of protection from conversion to non agricultural uses.

Twelve factors are used for Site Assessment and ten factors for corridor-type sites. Each factor is listed in an outline form, without detailed definitions or guidelines to follow in the rating process. The purpose of this document is to expand the definitions of use of each of the twelve Site Assessment factors so that all persons can have a clear understanding as to what each factor is intended to evaluate and how points are assigned for given conditions.

In each of the 12 factors a number rating system is used to determine which sites deserve the most protection from conversion to non-farm uses. The higher the number value given to a proposed site, the more protection it will receive. The maximum scores are 10, 15 and 20 points, depending upon the relative importance of each particular question. If a question significantly relates to why a parcel of land should not be converted, the question has a maximum possible protection value of 20, whereas a question which does not have such a significant impact upon whether a site would be converted, would have fewer maximum points possible, for example 10.

The following guidelines should be used in rating the twelve Site Assessment criteria:

1. How much land is in non-urban use within a radius of 1.0 mile from where the project is intended?

More than 90 percent:	15 points
90-20 percent:	14 to 1 points
Less than 20 percent:	0 points

This factor is designed to evaluate the extent to which the area within one mile of the proposed site is non-urban area. For purposes of this rule, "non-urban" should include:

- Agricultural land (crop-fruit trees, nuts, oilseed)
- Range land
- Forest land
- Golf Courses
- Non paved parks and recreational areas
- Mining sites
- Farm Storage
- Lakes, ponds and other water bodies
- Rural roads, and through roads without houses or buildings
- Open space
- Wetlands
- Fish production
- Pasture or hayland

Urban uses include:

- Houses (other than farm houses)
- Apartment buildings
- Commercial buildings
- Industrial buildings
- Paved recreational areas (i.e. tennis courts)
- Streets in areas with 30 structures per 40 acres
- Gas stations

- Equipment, supply stores
- Off-farm storage
- Processing plants
- Shopping malls
- Utilities/Services
- Medical buildings

In rating this factor, an area one-mile from the outer edge of the proposed site should be outlined on a current photo; the areas that are urban should be outlined. For rural houses and other buildings with unknown sizes, use 1 and 1/3 acres per structure. For roads with houses on only one side, use one half of road for urban and one half for non-urban.

The purpose of this rating process is to insure that the most valuable and viable farmlands are protected from development projects sponsored by the Federal Government. With this goal in mind, factor S1 suggests that the more agricultural lands surrounding the parcel boundary in question, the more protection from development this site should receive. Accordingly, a site with a large quantity of non-urban land surrounding it will receive a greater number of points for protection from development. Thus, where more than 90 percent of the area around the proposed site (do not include the proposed site in this assessment) is non-urban, assign 15 points. Where 20 percent or less is non-urban, assign 0 points. Where the area lies between 20 and 90 percent non-urban, assign appropriate points from 14 to 1, as noted below.

Percent Non-Urban Land within 1 mile	Points
90 percent or greater	15
85 to 89 percent	14
80 to 84 percent	13
75 to 79 percent	12
70 to 74 percent	11
65 to 69 percent	10
60 to 64 percent	9
55 to 59 percent	8
50 to 54 percent	7
45 to 49 percent	6
40 to 44 percent	5
35 to 39 percent	4
30 to 24 percent	3
25 to 29 percent	2
21 to 24 percent	1
20 percent or less	0

2. How much of the perimeter of the site borders on land in non-urban use?

More than 90 percent:	10 points
90 to 20 percent:	9 to 1 point(s)
Less than 20 percent:	0 points

This factor is designed to evaluate the extent to which the land adjacent to the proposed site is non-urban use. Where factor #1 evaluates the general location of the proposed site, this factor evaluates the immediate perimeter of the site. The definition of urban and non-urban uses in factor #1 should be used for this factor.

In rating the second factor, measure the perimeter of the site that is in non-urban and urban use. Where more than 90 percent of the perimeter is in non-urban use, score this factor 10 points. Where less than 20 percent, assign 0 points. If a road is next to the perimeter, class the area according to the

use on the other side of the road for that area. Use 1 and 1/3 acre per structure if not otherwise known. Where 20 to 90 percent of the perimeter is non-urban, assign points as noted below:

Percentage of Perimeter Bordering Land	Points
90 percent or greater	10
82 to 89 percent	9
74 to 81 percent	8
65 to 73 percent	7
58 to 65 percent	6
50 to 57 percent	5
42 to 49 percent	4
34 to 41 percent	3
27 to 33 percent	2
21 to 26 percent	1
20 percent or Less	0

3. How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last ten years?

More than 90 percent:	20 points
90 to 20 percent:	19 to 1 point(s)
Less than 20 percent:	0 points

This factor is designed to evaluate the extent to which the proposed conversion site has been used or managed for agricultural purposes in the past 10 years.

Land is being farmed when it is used or managed for food or fiber, to include timber products, fruit, nuts, grapes, grain, forage, oil seed, fish and meat, poultry and dairy products.

Land that has been left to grow up to native vegetation without management or harvest will be considered as abandoned and therefore not farmed. The proposed conversion site should be evaluated and rated according to the percent, of the site farmed.

If more than 90 percent of the site has been farmed 5 of the last 10 years score the site as follows:

Percentage of Site Farmed	Points
90 percent or greater	20
86 to 89 percent	19
82 to 85 percent	18
78 to 81 percent	17
74 to 77 percent	16
70 to 73 percent	15
66 to 69 percent	14
62 to 65 percent	13
58 to 61 percent	12
54 to 57 percent	11
50 to 53 percent	10
46 to 49 percent	9
42 to 45 percent	8
38 to 41 percent	7
35 to 37 percent	6
32 to 34 percent	5
29 to 31 percent	4
26 to 28 percent	3

23 to 25 percent	2
20 to 22 percent percent or Less	1
Less than 20 percent	0

4. Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?

Site is protected:	20 points
Site is not protected:	0 points

This factor is designed to evaluate the extent to which state and local government and private programs have made efforts to protect this site from conversion.

State and local policies and programs to protect farmland include:

State Policies and Programs to Protect Farmland

1. Tax Relief:

A. Differential Assessment: Agricultural lands are taxed on their agricultural use value, rather than at market value. As a result, farmers pay fewer taxes on their land, which helps keep them in business, and therefore helps to insure that the farmland will not be converted to nonagricultural uses.

1. **Preferential Assessment for Property Tax:** Landowners with parcels of land used for agriculture are given the privilege of differential assessment.
2. **Deferred Taxation for Property Tax:** Landowners are deterred from converting their land to nonfarm uses, because if they do so, they must pay back taxes at market value.
3. **Restrictive Agreement for Property Tax:** Landowners who want to receive Differential Assessment must agree to keep their land in - eligible use.

B. Income Tax Credits

Circuit Breaker Tax Credits: Authorize an eligible owner of farmland to apply some or all of the property taxes on his or her farmland and farm structures as a tax credit against the owner's state income tax.

C. Estate and Inheritance Tax Benefits

Farm Use Valuation for Death Tax: Exemption of state tax liability to eligible farm estates.

2. "Right to farm" laws:

Prohibits local governments from enacting laws which will place restrictions upon normally accepted farming practices, for example, the generation of noise, odor or dust.

3. Agricultural Districting:

Wherein farmers voluntarily organize districts of agricultural land to be legally recognized geographic areas. These farmers receive benefits, such as protection from annexation, in exchange for keeping land within the district for a given number of years.

4. Land Use Controls: Agricultural Zoning.

Types of Agricultural Zoning Ordinances include:

- A. **Exclusive:** In which the agricultural zone is restricted to only farm-related dwellings, with, for example, a minimum of 40 acres per dwelling unit.
- B. **Non-Exclusive:** In which non-farm dwellings are allowed, but the density remains low, such as 20 acres per dwelling unit.

Additional Zoning techniques include:

- A. **Sliding Scale:** This method looks at zoning according to the total size of the parcel owned. For example, the number of dwelling units per a given number of acres may change from county to county according to the existing land acreage to dwelling unit ratio of surrounding parcels of land within the specific area.
- B. **Point System or Numerical Approach:** Approaches land use permits on a case by case basis.

LESA: The LESA system (Land Evaluation-Site Assessment) is used as a tool to help assess options for land use on an evaluation of productivity weighed against commitment to urban development.
- C. **Conditional Use:** Based upon the evaluation on a case by case basis by the Board of Zoning Adjustment. Also may include the method of using special land use permits.

5. **Development Rights:**

- A. **Purchase of Development Rights (PDR):** Where development rights are purchased by Government action.

Buffer Zoning Districts: Buffer Zoning Districts are an example of land purchased by Government action. This land is included in zoning ordinances in order to preserve and protect agricultural lands from non-farm land uses encroaching upon them.

- B. **Transfer of Development Rights (TDR):** Development rights are transferable for use in other locations designated as receiving areas. TDR is considered a locally based action (not state), because it requires a voluntary decision on the part of the individual landowners.

- 6. **Governor's Executive Order:** Policy made by the Governor, stating the importance of agriculture, and the preservation of agricultural lands. The Governor orders the state agencies to avoid the unnecessary conversion of important farmland to nonagricultural uses.

7. **Voluntary State Programs:**

- A. **California's Program of Restrictive Agreements and Differential Assessments:** The California Land Conservation Act of 1965, commonly known as the Williamson Act, allows cities, counties and individual landowners to form agricultural preserves and enter into contracts for 10 or more years to insure that these parcels of land remain strictly for agricultural use. Since 1972 the Act has extended eligibility to recreational and open space lands such as scenic highway corridors, salt ponds and wildlife preserves. These contractually restricted lands may be taxed differentially for their real value. One hundred-acre districts constitute the minimum land size eligible.

Suggestion: An improved version of the Act would state that if the land is converted after the contract expires, the landowner must pay the difference in the taxes between market value for the land and the agricultural tax value which he or she had been

paying under the Act. This measure would help to insure that farmland would not be converted after the 10 year period ends.

- B. Maryland Agricultural Land Preservation Program: Agricultural landowners within agricultural districts have the opportunity to sell their development rights to the Maryland Land Preservation Foundation under the agreement that these landowners will not subdivide or develop their land for an initial period of five years. After five years the landowner may terminate the agreement with one year notice.

As is stated above under the California Williamson Act, the landowner should pay the back taxes on the property if he or she decides to convert the land after the contract expires, in order to discourage such conversions.

- C. Wisconsin Income Tax Incentive Program: The Wisconsin Farmland Preservation Program of December 1977 encourages local jurisdictions in Wisconsin to adopt agricultural preservation plans or exclusive agricultural district zoning ordinances in exchange for credit against state income tax and exemption from special utility assessment. Eligible candidates include local governments and landowners with at least 35 acres of land per dwelling unit in agricultural use and gross farm profits of at least \$6,000 per year, or \$18,000 over three years.

8. Mandatory State Programs:

- A. The Environmental Control Act in the state of Vermont was adopted in 1970 by the Vermont State Legislature. The Act established an environmental board with 9 members (appointed by the Governor) to implement a planning process and a permit system to screen most subdivisions and development proposals according to specific criteria stated in the law. The planning process consists of an interim and a final Land Capability and Development Plan, the latter of which acts as a policy plan to control development. The policies are written in order to:
- prevent air and water pollution;
 - protect scenic or natural beauty, historic sites and rare and irreplaceable natural areas; and
 - consider the impacts of growth and reduction of development on areas of primary agricultural soils.
- B. The California State Coastal Commission: In 1976 the Coastal Act was passed to establish a permanent Coastal Commission with permit and planning authority. The purpose of the Coastal Commission was and is to protect the sensitive coastal zone environment and its resources, while accommodating the social and economic needs of the state. The Commission has the power to regulate development in the coastal zones by issuing permits on a case by case basis until local agencies can develop their own coastal plans, which must be certified by the Coastal Commission.
- C. Hawaii's Program of State Zoning: In 1961, the Hawaii State Legislature established Act 187, the Land Use Law, to protect the farmland and the welfare of the local people of Hawaii by planning to avoid "unnecessary urbanization". The Law made all state lands into four districts: agricultural, conservation, rural and urban. The Governor appointed members to a State Land Use Commission, whose duties were to uphold the Law and form the boundaries of the four districts. In addition to state zoning, the Land Use Law introduced a program of Differential Assessment, wherein agricultural landowners paid taxes on their land for its agricultural use value, rather than its market value.
- D. The Oregon Land Use Act of 1973: This act established the Land Conservation and Development Commission (LCDC) to provide statewide planning goals and guidelines.

Under this Act, Oregon cities and counties are each required to draw up a comprehensive plan, consistent with statewide planning goals. Agricultural land preservation is high on the list of state goals to be followed locally.

If the proposed site is subject to or has used one or more of the above farmland protection programs or policies, score the site 20 points. If none of the above policies or programs apply to this site, score 0 points.

5. How close is the site to an urban built-up area?

The site is 2 miles or more from an urban built-up area	15 points
The site is more than 1 mile but less than 2 miles from an urban built-up area	10 points
The site is less than 1 mile from, but is not adjacent to an urban built-up area	5 points
The site is adjacent to an urban built-up area	0 points

This factor is designed to evaluate the extent to which the proposed site is located next to an existing urban area. The urban built-up area must be 2500 population. The measurement from the built-up area should be made from the point at which the density is 30 structures per 40 acres and with no open or non-urban land existing between the major built-up areas and this point. Suburbs adjacent to cities or urban built-up areas should be considered as part of that urban area.

For greater accuracy, use the following chart to determine how much protection the site should receive according to its distance from an urban area. See chart below:

Distance From Perimeter of Site to Urban Area	Points
More than 10,560 feet	15
9,860 to 10,559 feet	14
9,160 to 9,859 feet	13
8,460 to 9,159 feet	12
7,760 to 8,459 feet	11
7,060 to 7,759 feet	10
6,360 to 7,059 feet	9
5,660 to 6,359 feet	8
4,960 to 5,659 feet	7
4,260 to 4,959 feet	6
3,560 to 4,259 feet	5
2,860 to 3,559 feet	4
2,160 to 2,859 feet	3
1,460 to 2,159 feet	2
760 to 1,459 feet	1
Less than 760 feet (adjacent)	0

6. How close is the site to water lines, sewer lines and/or other local facilities and services whose capacities and design would promote nonagricultural use?

None of the services exist nearer than 3 miles from the site	15 points
Some of the services exist more than one but less than 3 miles from the site	10 points
All of the services exist within 1/2 mile of the site	0 points

This question determines how much infrastructure (water, sewer, etc.) is in place which could facilitate nonagricultural development. The fewer facilities in place, the more difficult it is to develop an area. Thus, if a proposed site is further away from these services (more than 3 miles distance away), the site should be awarded the highest number of points (15). As the distance of the parcel of land to services decreases, the number of points awarded declines as well. So, when the site is equal to or further than 1 mile but less than 3 miles away from services, it should be given 10 points. Accordingly, if this distance is 1/2 mile to less than 1 mile, award 5 points; and if the distance from land to services is less than 1/2 mile, award 0 points.

Distance to public facilities should be measured from the perimeter of the parcel in question to the nearest site(s) where necessary facilities are located. If there is more than one distance (i.e. from site to water and from site to sewer), use the average distance (add all distances and then divide by the number of different distances to get the average).

Facilities which could promote nonagricultural use include:

- Water lines
- Sewer lines
- Power lines
- Gas lines
- Circulation (roads)
- Fire and police protection
- Schools

7. Is the farm unit(s) containing the site (before the project) as large as the average-size farming unit in the county? (Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage of Farm Units in Operation with \$1,000 or more in sales.)

As large or larger:	10 points
Below average: Deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more is below average	9 to 0 points

This factor is designed to determine how much protection the site should receive, according to its size in relation to the average size of farming units within the county. The larger the parcel of land, the more agricultural use value the land possesses, and vice versa. Thus, if the farm unit is as large or larger than the county average, it receives the maximum number of points (10). The smaller the parcel of land compared to the county average, the fewer number of points given. Please see below:

Parcel Size in Relation to Average County Size	Points
Same size or larger than average (100 percent)	10
95 percent of average	9
90 percent of average	8
85 percent of average	7
80 percent of average	6
75 percent of average	5
70 percent of average	4
65 percent of average	3
60 percent of average	2
55 percent of average	1
50 percent or below county average	0

State and local Natural Resources Conservation Service offices will have the average farm size information, provided by the latest available Census of Agriculture data

8. If this site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?

Acreage equal to more than 25 percent of acres directly converted by the project	10 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project	9 to 1 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project	0 points

This factor tackles the question of how the proposed development will affect the rest of the land on the farm. The site which deserves the most protection from conversion will receive the greatest number of points, and vice versa. For example, if the project is small, such as an extension on a house, the rest of the agricultural land would remain farmable, and thus a lower number of points is given to the site. Whereas if a large-scale highway is planned, a greater portion of the land (not including the site) will become non-farmable, since access to the farmland will be blocked; and thus, the site should receive the highest number of points (10) as protection from conversion.

Conversion uses of the Site Which Would Make the Rest of the Land Non-Farmable by Interfering with Land Patterns

Conversions which make the rest of the property nonfarmable include any development which blocks accessibility to the rest of the site. Examples are highways, railroads, dams or development along the front of a site restricting access to the rest of the property.

The point scoring is as follows:

Amount of Land Not Including the Site Which Will Become Non-Farmable	Points
25 percent or greater	10
23 - 24 percent	9
21 - 22 percent	8
19 - 20 percent	7
17 - 18 percent	6
15 - 16 percent	5
13 - 14 percent	4
11 - 12 percent	3
9 - 11 percent	2
6 - 8 percent	1
5 percent or less	0

9. Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?

All required services are available	5 points
Some required services are available	4 to 1 point(s)
No required services are available	0 points

This factor is used to assess whether there are adequate support facilities, activities and industry to keep the farming business in business. The more support facilities available to the agricultural

landowner, the more feasible it is for him or her to stay in production. In addition, agricultural support facilities are compatible with farmland. This fact is important, because some land uses are not compatible; for example, development next to farmland can be dangerous to the welfare of the agricultural land, as a result of pressure from the neighbors who often do not appreciate the noise, smells and dust intrinsic to farmland. Thus, when all required agricultural support services are available, the maximum number of points (5) are awarded. When some services are available, 4 to 1 point(s) are awarded; and consequently, when no services are available, no points are given. See below:

Percent of Services Available	Points
100 percent	5
75 to 99 percent	4
50 to 74 percent	3
25 to 49 percent	2
1 to 24 percent	1
No services	0

10. Does the site have substantial and well-maintained on farm investments such as barns, other storage buildings, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?

High amount of on-farm investment	20 points
Moderate amount of non-farm investment	19 to 1 point(s)
No on-farm investments	0 points

This factor assesses the quantity of agricultural facilities in place on the proposed site. If a significant agricultural infrastructure exists, the site should continue to be used for farming, and thus the parcel will receive the highest amount of points towards protection from conversion or development. If there is little on farm investment, the site will receive comparatively less protection. See-below:

Amount of On-farm Investment	Points
As much or more than necessary to maintain production (100 percent)	20
95 to 99 percent	19
90 to 94 percent	18
85 to 89 percent	17
80 to 84 percent	16
75 to 79 percent	15
70 to 74 percent	14
65 to 69 percent	13
60 to 64 percent	12
55 to 59 percent	11
50 to 54 percent	10
45 to 49 percent	9
40 to 44 percent	8
35 to 39 percent	7
30 to 34 percent	6
25 to 29 percent	5
20 to 24 percent	4
15 to 19 percent	3
10 to 14 percent	2
5 to 9 percent	1
0 to 4 percent	0

11. Would the project at this site, by converting farmland to nonagricultural use, reduce the support for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?

Substantial reduction in demand for support services if the site is converted	10 points
Some reduction in demand for support services if the site is converted	9 to 1 point(s)
No significant reduction in demand for support services if the site is converted	0 points

This factor determines whether there are other agriculturally related activities, businesses or jobs dependent upon the working of the pre-converted site in order for the others to remain in production. The more people and farming activities relying upon this land, the more protection it should receive from conversion. Thus, if a substantial reduction in demand for support services were to occur as a result of conversions, the proposed site would receive a high score of 10; some reduction in demand would receive 9 to 1 point(s), and no significant reduction in demand would receive no points.

Specific points are outlined as follows:

Amount of Reduction in Support Services if Site is Converted to Nonagricultural Use	Points
Substantial reduction (100 percent)	10
90 to 99 percent	9
80 to 89 percent	8
70 to 79 percent	7
60 to 69 percent	6
50 to 59 percent	5
40 to 49 percent	4
30 to 39 percent	3
20 to 29 percent	2
10 to 19 percent	1
No significant reduction (0 to 9 percent)	0

12. Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of the surrounding farmland to nonagricultural use?

Proposed project is incompatible with existing agricultural use of surrounding farmland	10 points
Proposed project is tolerable of existing agricultural use of surrounding farmland	9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland	0 points

Factor 12 determines whether conversion of the proposed agricultural site will eventually cause the conversion of neighboring farmland as a result of incompatibility of use of the first with the latter. The more incompatible the proposed conversion is with agriculture, the more protection this site receives from conversion. Therefore, if the proposed conversion is incompatible with agriculture, the site receives 10 points. If the project is tolerable with agriculture, it receives 9 to 1 points; and if the proposed conversion is compatible with agriculture, it receives 0 points.