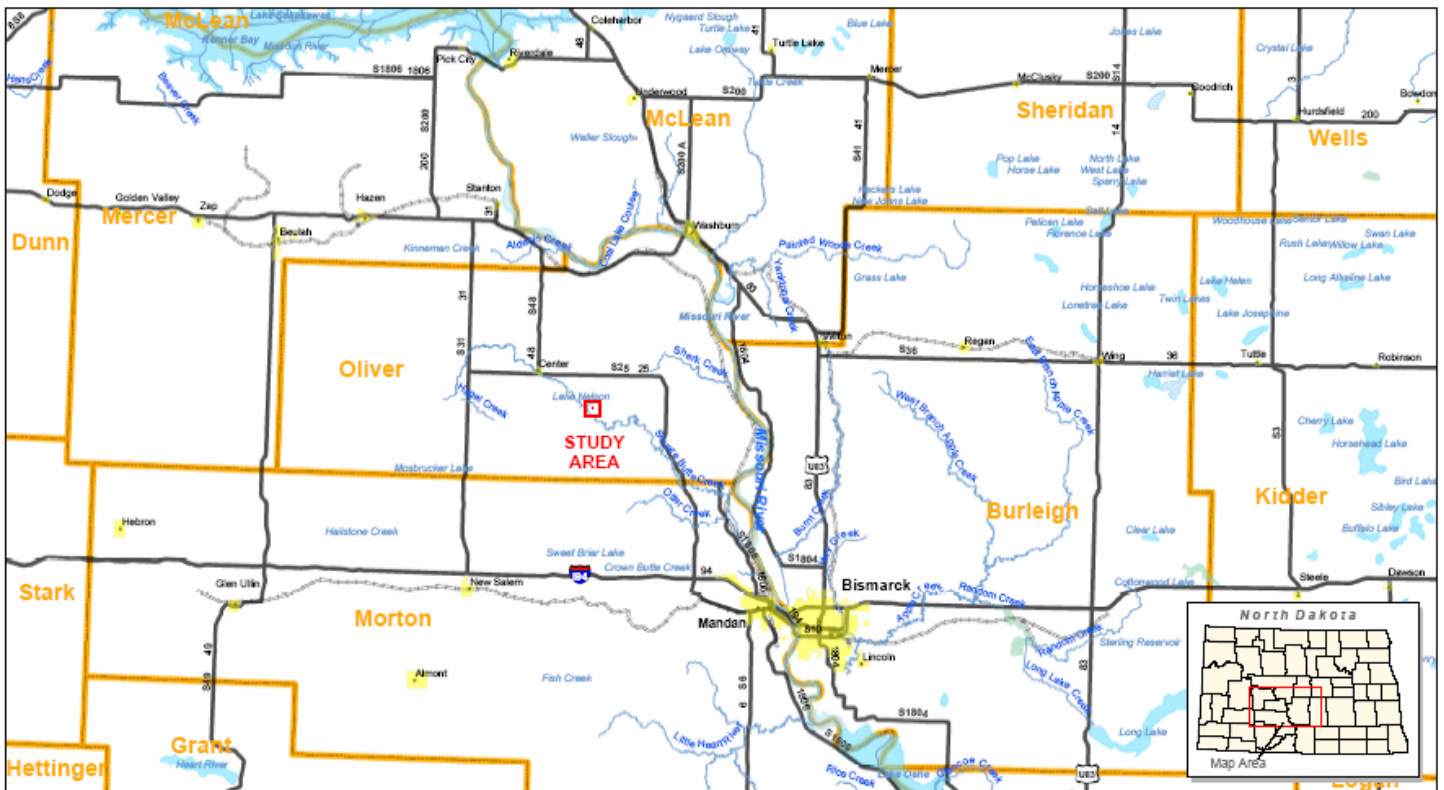


APPLICATION  
for  
A WAIVER OF PROCEDURES AND TIME SCHEDULES  
and  
CONSOLIDATED APPLICATIONS  
for  
A CERTIFICATE OF CORRIDOR COMPATIBILITY AND ROUTE PERMIT  
for  
SITING OF A 230Kv TRANSMISSION FACILITY  
in  
OLIVER COUNTY



Submitted JULY 2006

LAW OFFICES OF  
**FLECK, MATHER & STRUTZ, LTD.**

400 East Broadway, Suite 600, Wells Fargo Bank Building

P. O. Box 2798, Bismarck, North Dakota 58502

Telephone: 701-223-6585 Facsimile: 701-222-4853 E-Mail: fms@flecklaw.com Website: www.flecklaw.com

GARY R. WOLBERG+  
PAUL W. SUMMERS  
BRIAN R. BJELLA<sup>o\*</sup>  
JOHN W. MORRISON

ALSO LICENSED IN:

\* Minnesota

o Montana

+ Iowa

^ Wyoming

o Nebraska

July 25, 2006

CURTIS L. WIKE<sup>o\*</sup>  
CRAIG C. SMITH<sup>o^</sup>  
SHANE A. HANSON  
MICHAEL C. WALLER<sup>o</sup>  
PETRA H. MANDIGO<sup>o</sup>  
ERNEST R. FLECK  
(1921-1995)  
RUSSELL R. MATHER  
(RETIRED)  
WILLIAM A. STRUTZ  
(RETIRED)

***Hand Delivered***

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

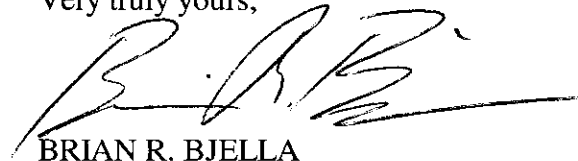
Dear Ms. Jeffcoat-Sacco:

In re: FPL Energy Oliver County Wind LLC  
Case No. PU-06-312  
Our File No. 1248-27965

Enclosed for filing are original and 10 copies of the Application for a Waiver of Procedures and Time Schedules and Consolidated Applications for a Certificate of Corridor Compatibility and Route Permit for Siting of a 230Kv Transmission Facility in Oliver County.

Please call should you have any questions.

Very truly yours,



BRIAN R. BJELLA

bw

Enc.

cc: Oliver County Auditor

BEFORE THE PUBLIC SERVICE COMMISSION  
OF THE STATE OF NORTH DAKOTA

**Case No. PU-06-312**

IN THE MATTER OF THE  
APPLICATION OF FPL ENERGY  
OLIVER COUNTY WIND LLC TO  
CONSTRUCT A 542 FOOT 230 KV  
RADIAL ELECTRIC  
TRANSMISSION LINE AND  
ASSOCIATED SUBSTATION  
FACILITIES IN OLIVER  
COUNTY, NORTH DAKOTA.

---

**APPLICATION OF FPL ENERGY OLIVER COUNTY WIND LLC  
FOR WAIVER OR REDUCTION OF PROCEDURES  
AND TIME SCHEDULES AND FOR A  
CORRIDOR CERTIFICATE AND ROUTE PERMIT**

---

FPL Energy Oliver County Wind, LLC (“Oliver Wind”) whose address for purposes of this Application is 700 Universe Boulevard, Juno Beach, Florida 33408, pursuant to the Energy Conversation and Transmission Facility Siting Act codified at North Dakota Century Code Chapter 49-22 (“Act”), hereby submits this Application for Waiver or Reduction of Procedures and Time Schedules and for a Corridor Certificate and Route Permit (“Application”). Oliver Wind requests the North Dakota Public Service Commission (“Commission”) waive and/or reduce time periods and schedules required by the Act or in the Commission’s regulations set forth in Title 69-06 of the North Dakota Administrative Code to accomplish the purposes as requested herein. These include, but are not limited to: (1) waive, pursuant to North Dakota Century Code §§ 49-22-07.2, 49-22-13(2) and North Dakota Administrative Code § 69-06-01-

02(3) and Chapter 69-06-06, provisions of North Dakota Century Code §§ 49-22-08(5), 49-22-08.1(5), 49-22-13 and North Dakota Administrative Code § 69-06-01-02 which requires separate filings of such applications, separate notices of such applications, hearings on such applications and certain time schedules as set forth in said statutes and rules; (2) not hold a public hearing on this application, but pursuant to North Dakota Century Code § 49-22-13(2) and North Dakota Administrative Code § 69-06-01-02(3), publish a notice of opportunity for hearing as provided for therein; (3) find that the proposed facilities are of such design, location and purpose that they will produce minimal adverse effects; (4) that pursuant to North Dakota Century Code § 49-22-13(4), provide in the notice of opportunity for hearing that any request for a hearing be made in not more than ten days; and (5) designate and approve the requested facilities as identified in this Application and issue the appropriate corridor certificate and route permit.

The Commission's application guidelines for waiver of procedures and time schedules requires a description of the facility, the need for the facility, the cost of the facility and separate justification for each provision of the Act for which the Applicant is requesting a waiver, together with evidence that the project will produce minimal adverse effects or that a demonstrable emergency exists. As demonstrated in this Application, and summarized below, Oliver Wind's requests for waivers or reduction of procedures and time schedules and the issuance of a corridor certificate and route permit are justified as the proposed facilities are of such design, location and purpose that they will produce minimal adverse effects.

#### **DESCRIPTION**

The proposed radial electric transmission line would extend from the proposed Oliver Substation approximately 542 feet north to the Square Butte Cooperative's Center Substation (an

AC/DC conversion substation) located in Oliver County. A map of the study area for the proposed corridor and route was included with Oliver Wind's Letter of Intent dated July 17, 2006. Oliver Wind requests that this map be accepted as a substitute for a mylar map required by Commission application guidelines.

Construction of the radial electric transmission line and associated substation facilities are expected to begin in August 2006 with completion on or about November 1, 2006.

### **NEED**

The transmission line and associated substation facilities are an integral part of Oliver Wind's proposed wind energy project, utilizing North Dakota's wind resources to produce electricity. The proposed radial electric transmission line and substation facilities are needed in order to convert voltage as delivered into the substation at 34.5 kV, where it is stepped up to a voltage of 230 kV.

### **COSTS**

The estimated cost of the radial electric transmission line and associated substation facilities is \$4,500,000.00.

### **JUSTIFICATION**

Oliver Wind has retained an environmental firm to prepare the cultural resource survey material which is included with this Application. The report by the environmental firm demonstrates there will be no exclusion or avoidance areas impacted by the proposed transmission line and substation facilities; and further demonstrates there will be minimal adverse effects by such construction. In addition, Oliver Wind must meet its contract with Minnesota Power to deliver this power with an in-service date of November 1, 2006.



Subscribed and sworn to before me this 19<sup>th</sup> day of July, 2006.

Beth Wald

Beth Wald, Notary Public  
Burleigh County, North Dakota  
My Commission Expires: 11/28/08

(SEAL)

**BETH WALD**  
Notary Public, State of North Dakota  
My Commission Expires November 28, 2008

# APPLICATION FOR CERTIFICATE OF CORRIDOR COMPATIBILITY

## TABLE OF CONTENTS

I.	INTRODUCTION .....	1
II.	ANALYSIS ACCORDING TO PSC GUIDELINES .....	1
	SECTION A. DESCRIPTION OF FACILITY .....	1
	1. Type .....	1
	2. Product .....	1
	3. Size and Design.....	2
	(1) Width of right-of-way .....	2
	(2) Estimated span lengths .....	2
	(3) Anticipated type of structure .....	2
	(4) Approximate length of facility .....	2
	(5) Voltage .....	2
	(6) The requirement for and general location of any new associated facilities .....	2
	4. Time Schedule .....	3
	SECTION B. SPECIAL STUDIES .....	3
	1. Selection and Evaluation of Study Area .....	4
	2. Historic and Archeological Site Evaluation .....	4
	3. Agency Consultation.....	4
	4. Collected and Evaluation of Criteria Data .....	4
	SECTION C. NEED FOR FACILITY .....	5
	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. ....	5
	2. A description of any feasible alternative methods of serving the need.....	5
	3. A statement justifying any deviation from the most recent Ten-Year Plan which the proposed facility may present.....	5
	SECTION D. LOCATION. ....	5
	1. Selection of Study Area and Proposed Corridor .....	5
	2. Criteria Maps .....	6
	3. Description of Criteria in the Proposed Corridor.....	7
	a. Exclusion Area .....	7
	(1) Designated or registered national areas.....	7
	(2) Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves areas .....	7
	(3) County parks and recreational areas; municipal parks; parks owned or administered by other governmental subdivisions. (See Exhibit 4, Criteria Map 2).....	7
	(4) Areas critical to the life stages of threatened or endangered animal or plant species. (See Exhibit 4, Criteria Map 2).....	7
	(5) Areas where animal or plant species that are unique or rare to this state that would be irreversibly damaged. (See Exhibit 4, Criteria Map 2). ....	8
	b. Avoidance Areas.....	8
	(1) Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands. (See Exhibit 4, Criteria Map 3). ....	8

(2) Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands. (See Exhibit 4, Criteria Map 3).	8
(3) Historical resources which are not specifically designated as exclusion or avoidance areas. (See Exhibit 4, Criteria Map 4).	8
(4) Areas which are geologically unstable.	8
(5) Within five hundred feet of a farmhouse, rural residence, or place of business. This criterion shall not apply to a water pipeline transmission facility (See Exhibit 4, Criteria Map 4).	8
(6) Reservoirs and municipal water supplies (See Exhibit 4, Criteria Map 3).	10
(7) Water sources for organized rural water districts.	10
(8) Irrigated land (See Exhibit 4, Criteria Map 3).	10
(9) Areas of recreational significance not designated as exclusion areas	10
c. Selection Criteria	10
(1) Impact upon agriculture	10
(a) Agricultural production.	10
(b) Family farms and ranches.	10
(c) Land which the owner can demonstrate has soil, topography, drainage, and an available water supply that can cause the land to be economically suitable for irrigation.	10
(d) Surface drainage and groundwater flow patterns.	10
(2) Impact Upon	11
(a) Noise sensitive land uses.	11
(b) The visual effect on the adjacent area.	11
(c) Extractive and storage resources. (See Exhibit 4, Criteria Map 5).	11
(d) Wetlands, woodlands, and wooded areas. (See Exhibit 4, Criteria Maps 5 and 6).	11
(e) Radio and television reception, and other communication or electronic control facilities. (See Exhibit 4, Criteria Map 5).	12
(f) Human health and safety.	12
(g) Animal health and safety	13
(h) Plant life.	13
d. Policy criteria	14
(1) Location and design.	14
(2) Training and utilization of available labor in this state for the general and specialized skills required.	14
(3) Economies of construction and operation.	14
(4) Use of citizen coordinating committees.	14
(5) A commitment of a portion of the transmitted product for use in this state.	14
(6) Labor relations.	14
(7) The coordination of facilities.	14
(8) Monitoring of impacts.	15
(9) Utilization of existing and proposed rights-of-way and corridors.	15
(10) Other existing or proposed transmission facilities.	15
e. Summary of Criteria in Proposed Corridor and Route.	15
f. Design and construction limitations.	15
g. Economic considerations.	16
4. General Mitigative Measures to Minimize Adverse Impacts.	16
5. Qualifications of People Involved in the Corridor Study.	16
6. Maps	17

## I. INTRODUCTION

This is an Application for a Certificate of Corridor Compatibility by FPL Energy Oliver County Wind, LLC (“Oliver Wind”). Although separate and apart from, it is to be reviewed in conjunction with Oliver Wind’s Route Permit Application. Oliver Wind is seeking siting approval for a 230,000 Volt (230 kV) transmission line corridor between the proposed Oliver substation and the Square Butte Cooperative’s Center Substation (an AC/DC conversion substation). (See Exhibit 1)

The proposed facility is a 230 kV transmission line that will extend approximately 542 feet from the proposed Oliver substation to the Square Butte Cooperative’s Center Substation (an AC/DC conversion substation) located in Oliver County. The proposed radial electric transmission line will allow the Oliver County Wind Energy Center to contribute approximately 50 MW of renewable energy to the power grid.

## II. ANALYSIS ACCORDING TO PSC GUIDELINES

This Application follows the format set forth in the North Dakota Public Service Commission Application Guidelines For a Certificate of Corridor Compatibility (“PSC Guidelines”), promulgated pursuant to the North Dakota Energy Conversion and Transmission Facility Siting Act, N.D.C.C. Chapter 49-22.

### SECTION A. DESCRIPTION OF FACILITY

#### 1. Type

**Describe the type of transmission facility addressed in this application. The description shall include the purpose of the facility and the technology to be employed.**

The Proposed Oliver County transmission facility is a 230,000 volt (230 kV), alternating current, electric transmission line, approximately 542 feet long (referred to as “the proposed facility” from here on). The proposed radial electric transmission line and substation facilities are needed in order to convert voltage as delivered into the substation at 34.5 kV, where it is stepped up to a voltage of 230 kV.

The proposed radial electric transmission line would extend from the proposed Oliver substation to the Square Butte Cooperative’s Center Substation (an AC/DC conversion substation) located in Oliver County. The length of the corridor between substation fence lines is approximately 300 feet. The proposed radial electric transmission line will allow the Oliver County Wind Energy Center to contribute approximately 50 MW of renewable energy to the power grid. By tying into the Square Butte Cooperative’s Center Substation facility, the proposed facility will improve reliability of service to Oliver Wind and other utilities’ customers in the region. The conductors and shield wires will be supported above ground by galvanized tubular steel, as further described throughout this Application.

#### 2. Product

**Describe the type, source, and final destination of the product to be transmitted by the proposed facility.**

The proposed facility is intended to carry 230 kV, three-phase, alternating current, electrical energy. It will have an expected operating level of 120,000 Kilovolt-amperes (kVA).

The proposed radial electric transmission line would extend from the proposed Oliver substation to the Square Butte Cooperative’s Center Substation (an AC/DC conversion substation) located in Oliver County. The proposed radial electric transmission line will allow the Oliver County Wind Energy Center to contribute approximately 50 MW of renewable energy to the power grid.

### **3. Size and Design**

**a. Provide a description of the size and design of the ELECTRICAL facility including, but not limited to, the following:**

- (1) Width of right-of-way**
- (2) Estimated span lengths**
- (3) Anticipated type of structure**
- (4) Approximate length of facility**
- (5) Voltage**
- (6) The requirement for and general location of any new associated facilities**

The final design for the proposed facility has been completed (see Section II.A-4, Time Schedule, below).

**(1) Width of right-of-way**

It is anticipated that a right-of-way of up to 120 feet wide (60 feet wide on either side of the center line) will be acquired throughout the length of the proposed facility. Additional temporary work space, staging and lay down areas will not be necessary.

**(2) Estimated span lengths**

There will only be one structure along the transmission line approximately 300 feet north of the proposed substation.

The conductor ground clearance will vary depending on terrain. A minimum ground clearance of 24.0 feet, at a conductor temperature of 212 degrees Fahrenheit, will be maintained. At lower conductor temperatures and under ice load, the ground clearance will be greater.

**(3) Anticipated type of structures**

The transmission line spanning between the Oliver Substation and the Square Butte Substation will be supported by one (1) H-frame tangent structure, which will be located approximately 219 feet south of the Square Butte dead-end structure, as illustrated in Exhibit 2.

This intermediate structure will be about 85 feet high and constructed from tapered tubular steel that will be hot-dipped galvanized after fabrication. Each of the columns will be approximately 25 inches in diameter at the base and nine (9) inches in diameter at the top.

The structure will be braced by one X-brace, and cross-arms will support the insulators and conductors. The X-braces and cross-arms will be made from tapered tubular steel that will be hot-dipped galvanized after fabrication. The cross-arms that support the insulators and conductors will have a cross section diameter of approximately 10 inches, and a length of approximately 34 feet.

The line is proposed to terminate at a dead-end structure at its terminus. This structure will ensure that the proposed facility maintains structural integrity.

The conductors that transport the electrical energy will be constructed of aluminum strands with a core of steel strands for greater tensile strength. The trade designation for the conductors is 795 kcmil 26/7 ACSR "Drake." This designation indicates that the conductors are aluminum conductors, steel reinforced with 26 aluminum strands

and a core of seven steel strands. The shield wires or lightning protection wires will be constructed of extra-high strength steel strands, and the overall diameter of the shield wires will be 3/8 inch. The insulators will be porcelain, polymer or both.

**(4) Approximate length of the facility**

The proposed facility is a 230 kV transmission line that will extend approximately 542 feet from the proposed Oliver substation to the Square Butte Cooperative's Center Substation (an AC/DC conversion substation) located in Oliver County.

**(5) Voltage**

The proposed facility is intended to carry 230 kV, three-phase, alternating current, electrical energy.

**(6) The requirement for and general location of any new associated facilities**

The proposed facility is a 230 kV transmission line that will extend approximately 542 feet from the proposed Oliver substation to the Square Butte Cooperative's Center Substation (an AC/DC conversion substation) located in Oliver County. This proposed corridor runs from the proposed substation north to the Square Butte Cooperative's Center Substation. The proposed radial electric transmission line and substation facilities are needed in order to convert voltage as delivered into the substation at 34.5 kV, where it is stepped up to a voltage of 230 kV.

**4. Time Schedule**

The proposed time schedule for the proposed facility is shown below:

**Major Events Schedule**

Certificate of Corridor Compatibility Application Filed	July 2006
Route Permit Application Filed	July 2006
Corridor Certificate and Route Permit (obtained from PSC)	August 2006
Begin staking structures	August 2006
Complete line design	Completed
Construction start date	August 2006
Construction Complete	October 2006
In service date	November 1, 2006
Retirement of facility	Unknown

**SECTION B. SPECIAL 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.**

Oliver Wind conducted several studies before selecting the proposed corridor. Overall, review of environmental and cultural/archeological resource issues with respect to selection of the proposed corridor was conducted. Oliver Wind performed additional studies and analysis before selecting a proposed route. The general study process included, but was not limited to: (1) selection and general evaluation of the study area, (2) a Class I Archeological/Cultural records search, (3) a Class III pedestrian survey, (4) agency consultations, and (5) collection and evaluation of criteria data. The methods used to conduct these studies are described below. The results of the studies are included in appropriate sections of this Application.

## **1. Selection and Evaluation of Study Area**

Oliver Wind selected a study area which follows the proposed route, approximately 542 feet long.

In their evaluation of the study area, Oliver Wind considered among other things: topography, location of existing transmission facilities (lines and substations), location of communities and airfields, land ownership, and economics.

The proposed facility is located on Minnkota land immediately adjacent to the existing Square Butte Cooperative's Center Substation and other transmission facilities, therefore, the area is already generally disturbed. Further evaluation of the factors addressed in N.D.C.C. §49-22-09 are set forth in Section D.1 below.

## **2. Historic and Archeological Site Evaluation**

With respect to archaeological/cultural resource, Oliver Wind's consultant conducted a Class I review of historic and archeological records through the North Dakota State Historic Preservation Office (SHPO) which was completed in 2005. They also conducted a Class III pedestrian survey in 2006. Results for these studies did not identify any archaeological/cultural resources. Refer to Exhibit 5 for the "Negative Survey Report Form".

Consistent with the Act and the Guidelines, archaeological, cultural, and historic resources will be avoided by the Oliver Wind construction team.

## **3. Agency Consultation**

North Dakota Administrative Code § 69-06-01-05 lists 21 state agencies that are entitled to notice of Oliver Wind's proposed action. Email notifications were sent on July 19, 2006 to the agencies on the list that Oliver Wind believes could have a material interest in the project. A copy of the email notifications are provided as Exhibit 3. The following agencies were emailed:

- United States Fish and Wildlife Service (USFWS)
- North Dakota State Water Commission (NDSWC)
- North Dakota Game and Fish Department (NDGFD)
- North Dakota Historic Preservation Office (NDSHPO)
- Department of Transportation
- Parks and Recreation Department
- Aeronautics Commission
- Land Department - Michael Haupt
- Department of Health - Dave Glatt (Chief)

As of the date of this application submittal, no responses have been received.

## **4. Collected and Evaluation of Criteria Data**

North Dakota Administrative Code §69-06-08-02 sets forth certain transmission facility corridor and route criteria an applicant must present. They include exclusion, avoidance, selection, and policy criteria. Exclusion and avoidance criteria encompass specific land designations (such as parks and historic sties), human dwellings, water developments, and habitat for state or federal threatened and rare species. Selection criteria relate to the effects from construction on agriculture, noise, and other general environmental conditions. Policy criteria relate to the applicant's policies regarding health, safety, labor relations, and coordination with other interests.

Oliver Wind gathered data from several sources to identify the locations of exclusion and avoidance areas and to determine the potential impact of its proposed facility on selection criteria. A computerized geographic information system (GIS) was utilized to compile and analyze most of the data. GIS was also used to produce the criteria maps. Specific sources of data included:

- North Dakota Natural Heritage Program dataset on sensitive species and habitats and state parks.
- U.S. Fish and Wildlife Service's National Wetland Inventory maps, obtained in GIS format.
- Residences, Homesteads, Federal and State wildlife areas and land currently irrigated or with notable potential for irrigation, within the corridor were located by aerial photograph interpretation.
- Structures (including extractable resources, cemeteries, and communication towers) were derived from data obtained from the North Dakota GIS Hub.
- Woodlands were derived from USGS 7.5-minute topographic quadrangle maps.

### **SECTION C. NEED FOR FACILITY**

#### **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.**

The permit would authorize the construction of an approximately 542 foot long 230kV radial electric transmission line in the State of North Dakota. The proposed radial electric transmission line will allow the Oliver County Wind Energy Center to contribute approximately 50 MW of renewable energy to the power grid. The proposed radial electric transmission line and substation facilities are needed in order to convert voltage as delivered into the substation at 34.5 kV, where it is stepped up to a voltage of 230 kV.

#### **2. A description of any feasible alternative methods of serving the need.**

The route and corridor were selected using the PSC criteria in addition to other constraints such as engineering, cost, and landowner participation. As described above, feasible and prudent alternatives were examined throughout the planning process.

#### **3. A statement justifying any deviation from the most recent Ten-Year Plan which the proposed facility may present.**

Since Oliver Wind is an independent power producer this section does not apply.

### **SECTION D. LOCATION.**

This section includes the justification for selecting the proposed corridor. It describes the general environment and factors that are important from an environmental and human health standpoint. General impacts and mitigation measures are also covered, as are the PSC's Corridor Application Criteria. Policies affecting the manner in which Oliver Wind addressed environmental, human safety, and economic issues are also discussed.

#### **1. Selection of Study Area and Proposed Corridor**

**Select a study area, which includes the proposed corridor, of sufficient width to enable the Commission to evaluate the factors addressed in N.D.C.C. § 49-22-09.**

This section describes how Oliver Wind chose the study area and the proposed corridor. Oliver Wind selected a study area which was a relatively straight line along the proposed route, approximately 542 feet long. According to PSC Guidelines, the width of the corridor must be at least ten percent of the length but not less than one mile. Since the proposed facility is only 542 feet, a corridor width of one mile was chosen.

Oliver Wind used some general criteria to select a proposed corridor within this study area: location of existing transmission facilities (lines and substations), location of communities, land ownership and ecologically sensitive areas.

Location of existing transmission facilities –The proposed facility is a 230 kV transmission line that will extend approximately 542 feet from the proposed Oliver substation to the Square Butte Cooperative’s Center Substation (an AC/DC conversion substation) located in Oliver County. The proposed radial electric transmission line will allow the Oliver County Wind Energy Center to contribute approximately 50 MW of renewable energy to the power grid.

Location of communities– There are several towns near the proposed project. Cities and small unincorporated towns near the proposed project area within Oliver County include Price, Center (678) and Hanover.

Land ownership – The proposed corridor and route avoids lands within the study area owned by the federal government, lands operated as state wildlife areas and tribal lands.

Ecologically Sensitive Areas – There are no rare or endangered species located in the area. However, Whooping Cranes are known to transiently use the area. USFWS Ecological Services, Bismarck, ND has been consulted.

A survey focused on identifying raptor stick-nests along the transmission route (tree nests) was conducted during the first week of May 2005. No nests were identified within the transmission route. A wetlands survey was conducted in April 2006. There are no wetlands that could be impacted by construction or operation of the proposed facility.

## **2. Criteria Maps**

**Identify and map the criteria that led to the proposed corridor location within the study area.**

All criteria that can be mapped are provided in Exhibit 4. The maps all include the location of the proposed corridor, and are organized as follows:

General overview map, showing location of proposed corridor and route

- Exclusion areas – Threatened and endangered species, state rare species and parks
- Avoidance areas – Federal and state wildlife areas, reservoirs, and irrigated land
- Avoidance areas – Occupied residences and archeological sites
- Selection areas – Gravel pits, communication towers, woodlands
- Selection areas – Wetlands
- Selection areas – Wetland easements of U.S. Fish and Wildlife Service

Additional criteria cannot be mapped but are described throughout the next section.

### 3. Description of Criteria in the Proposed Corridor

**Discuss the relative value of each criteria and how the proposed corridor location was selected giving consideration to all criteria.**

The Public Service Commission has established criteria that guides and governs the siting of a transmission line corridor and route, N.D.A.C. § 69-06-08-02. These criteria are divided into four general areas: exclusion areas, avoidance areas, selection criteria, and policy criteria. All were given weight in selection of the proposed corridor.

The proposed corridor was also selected based on the factors identified in Section II.D.1., and consideration was given to the efficiencies created by placing the line along a route as straight as possible. An overview map of the proposed corridor is provided in Exhibit 4. Criteria listed by the Public Service Commission as exclusion, avoidance, selection and policy will be used to select the most appropriate route within the proposed corridor.

#### a. Exclusion Area

**The following geographical areas shall be excluded in the consideration of a route for a transmission facility. A buffer zone of a reasonable width to protect the integrity of the area shall be included. Natural screening may be considered in determining the width of the buffer zone. (N.D.A.C. § 69-06-08-02)**

**(1) Designated or registered national areas**

None of these areas are found in the proposed corridor (or route).

**(2) Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves areas**

Oliver Wind has conducted a Class I review of historic and archeological records through North Dakota SHPO as well as a Class III pedestrian survey. No archaeological/cultural resources were identified.

**(3) County parks and recreational areas; municipal parks; parks owned or administered by other governmental subdivisions. (See Exhibit 4, Criteria Map 2)**

None of these areas are found in the proposed corridor (or route).

**(4) Areas critical to the life stages of threatened or endangered animal or plant species. (See Exhibit 4, Criteria Map 2).**

The N.D. Natural Heritage Program (NDNHP) database query identified no federally listed threatened or endangered animal/plant species previously documented within the corridor (or route).

The whooping crane may occur within the proposed corridor. The total population of whooping cranes in the wild is 188. As such, observations are infrequent and in North Dakota they occur during migration. Spring migration occurs from late-April to mid-June and fall migration occurs from late-August to mid-October. Surveys of whooping crane activity in North Dakota note that most sightings are in the western two thirds of the state.

- (5) **Areas where animal or plant species that are unique or rare to this state that would be irreversibly damaged. (See Exhibit 4, Criteria Map 2).**

The Pioneer Riparian community, *Potamogeton vaginatus* (sheathed pondweed), was identified by NDNHP as a sensitive plant species found within the corridor. Disturbance of this plant and associated wetland and riparian communities will be avoided.

The ND Game and Fish Department also published a list of 100 species of conservation priority. A review of those species potentially present in the vicinity of the project is presented in the following table along with a description of their habitats. Obligate aquatic species (e.g.; fish) are not included.

**b. Avoidance Areas**

**The following geographical areas shall not be considered in the routing of a transmission 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 routes. Economic considerations alone shall not justify approval of these areas. A buffer zone of a reasonable width to protect the integrity of the area shall be included unless a distance is specified in the criteria. Natural screening may be considered in determining the width of the buffer zone. (N.D.A.C. § 69-06-08-02)**

- (1) **Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands. (See Exhibit 4, Criteria Map 3).**

There are no federal Wildlife Management areas located in the proposed corridor and the proposed route. (See Exhibit 4, Criteria Map 3).

- (2) **Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands. (See Exhibit 4, Criteria Map 3).**

No areas in the proposed corridor meet this criterion.

- (3) **Historical resources which are not specifically designated as exclusion or avoidance areas. (See Exhibit 4, Criteria Map 4).**

No areas in the proposed corridor meet this criterion.

- (4) **Areas which are geologically unstable.**

No areas along the route meet this criterion.

- (5) **Within five hundred feet of a farmhouse, rural residence, or place of business. This criterion shall not apply to a water pipeline transmission facility (See Exhibit 4, Criteria Map 4).**

There are no rural structures identified on aerial photographs of the site that are within the proposed corridor.

**TABLE 2**  
**Federally-Listed Species<sup>1,2</sup> and North Dakota Game and Fish Department Priority Avian Species<sup>3</sup> Potentially Present in Project Area**  
**Proposed Wind Generation and Transmission Project**  
**Oliver County, North Dakota**

Common Name	Scientific Name	Federal	State	Preferred Habitat / Range
American Avocet	<i>Recurvirostra americana</i>		II	Statewide, found on ponds or lakes with exposed, sparsely vegetated shorelines; nest in open near water.
American Bittern	<i>Botaurus lentiginosus</i>		I	East of Missouri River; wetland cattails & bullrushes; next in uplands.
American White Pelican	<i>Pelecanus erythrorhynchos</i>		I	Primarily Missouri Coteau & drift prairie.
Baird's Sparrow	<i>Ammodramus bairdii</i>	FC	I	Upland prairies of mixed-grass or tall grass habitat types; not heavily grazed areas.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	I	Forested habitat near bodies of water.
Black Billed Cuckoo	<i>Coccyzus erythrophthalmus</i>		I	Statewide, woodlands, thickets, prairie shrubs, shelterbelts & wooded areas of towns.
Black Tern	<i>Chlidonias niger</i>	FC	I	Inland marshes & sloughs with dense emergent vegetation.
Black-footed Ferret	<i>Mustela nigripes</i>	E	II	An obligate of prairie dog towns. No recorded observations in recent years, potential exists for reintroductions.
Blue Sucker	<i>Cycleptus elongatus</i>	FD	I	Found in the Missouri River, prefers swift current of large, turbid rivers in areas with rocky or gravel bottoms.
Bobolink	<i>Dolichonyx oryzivorus</i>		II	Statewide; uses a variety of grasslands.
Canvasback	<i>Aythya Valisineria</i>		II	East of Missouri River, semipermanent wetlands; nests over water in dense vegetation.
Chestnut-Collared Longspur	<i>Calcarius ornatus</i>		I	Grazed or hayed mixed-grass prairie.
Dickcissel	<i>Spiza americana</i>		II	Statewide, mainly southern portion of state; alfalfa, sweet clover, & other brushy grasslands.
Ferruginous Hawk	<i>Buteo regalis</i>	FC	I	Dry unbroken prairie with little cultivated land.
Franklin's Gull	<i>Larus pipixcan</i>		I	East of Missouri River. Build nests in dead marsh plants.
Grey Wolf	<i>Canis lupus</i>	T	III	Not known to be in state except in extreme NE corner.
Grasshopper Sparrow	<i>Ammodramus savannarum</i>		I	Statewide; uses idle or lightly-grazed mixed-grass prairie, meadows & hayfields.
Horned Grebe	<i>Podiceps auritus</i>		I	East of Missouri River, wetlands & lakes with open water.
Interior Least Tern	<i>Sterna antillarum</i>	E	II	Habitat confined to the Missouri River; nests on sparsely vegetated sandbars. Critical habitat designated.
Lark Bunting	<i>Calamospiza melanocorys</i>		I	Statewide; sagebrush or sage prairie preferred.
Le Conte's Sparrow	<i>Ammodramus leconteii</i>		II	High densities in Missouri Coteau; fens, wet meadows & marshes.
Loggerhead Shrike	<i>Lanius ludovicianus</i>	FC		Open country with patches of trees or shrubs present; wooded coulees & shelterbelts with native prairie or cropland nearby.
Long-billed Curlew	<i>Numenius americanus</i>		I	High densities in Missouri Coteau; uses wetlands, streams & lakes, nests in often heavily grazed prairie.
Marbled Godwit	<i>Limosa fedoa</i>		I	High densities in Missouri Coteau; uses wetlands, streams & lakes, nests in often heavily grazed prairie.
McCown's Longspur	<i>Calcarius mccownii</i>		I	West of Missouri River. Prefers arid, short-grass prairie or heavily grazed mixed grass prairie.
Nelson's Sharp-Tailed Sparrow	<i>Ammodramus nelsoni</i>		I	East of Missouri river, fens & shallow marsh zones of wetlands & lakes.
Northern Harrier	<i>Circus cyaneus</i>		II	Statewide, but primarily in Missouri Coteau & drift prairie. Nests in upland grasses near water.
Northern Pintail	<i>Anas acuta</i>		II	East of Missouri River; wetlands for food; nests in uplands.
Pallid Sturgeon	<i>Scaphirhynchus albus</i>	T	II	Missouri River. Loss of habitat attributed to damming and channelization of Missouri River.
Perigrine Falcon	<i>Falco peregrinus anatum</i>	FE	III	Any habitat with suitable prey; cliffs for nesting.
Piping Plover	<i>Charadrius melodus</i>	T	II	Barren sand & gravel shores of rivers & lakes; avoid dense vegetation; alkaline wetlands with salt encrusted beaches & sandbars.
Redhead	<i>Aythya americana</i>		II	East of Missouri River, semipermanent wetlands; nests over water in emergent vegetation.
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>		II	Found in natural stands of mature deciduous trees along the Missouri River, shelterbelts, wooded areas. Nests in snags.
Sedge Wren	<i>Cistothorus platensis</i>		II	East of Missouri River; prefers wet meadows of tall grasses & sedges.
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>		II	Statewide on prairies that contain scattered patches of small trees or shrubs.
Short-Eared Owl	<i>Asio flammeus</i>		II	Statewide, prairies, marshes, & fields; nests on ground in prairies, hayfields, & stubble fields.
Sprague's Pipit	<i>Anthus spragueii</i>		I	Statewide, extensive tracts of ungrazed or lightly-grazed prairie.
Swainson's Hawk	<i>Buteo swainsoni</i>		I	Statewide, nest in lone prairie trees.
Upland Sandpiper	<i>Bartramia longicauda</i>		I	Statewide, most common in dry, open mixed-grass prairie.
Western Burrowing Owl	<i>Athene cunicularia hypugea</i>	FC	II	Heavily grazed tracts of mixed-grass prairie.
Whooping Crane	<i>Grus americanus</i>	E	III	Shallow wetlands that are characterized by cattails, bulrushes, & sedges; upland areas during migration.
Willet	<i>Catoptrophorus semipalmatus</i>		I	Heavy Densities on the Missouri Coteau; prefer wetlands; nests in uplands in native prairies away from water.
Wilson's Phalarope	<i>Phalaropus tricolor</i>		I	Statewide in shallow wetlands & mudflats, nests in grass on the margins of wetlands.
Yellow Rail	<i>Coturnicops noveboracensis</i>		I	East of Missouri river, fens or groundwater-fed wetlands.
<b>Federal</b>				
E - Endangered				
T - Threatened				
FC - Former Candidate				
<b>North Dakota Game &amp; Fish Department</b>				
I Species having a high level of conservation priority because of declining status either in North Dakota or across their range; or a high rate of occurrence in North				
II Species having a moderate level of conservation priority or a high level of conservation priority, but a substantial amount of non-State Wildlife Grant funding is				
III North Dakota's species having a moderate level of conservation priority, but are believed to be peripheral or do not breed in North Dakota.				

1 USGS 1995  
2 FWS 2004  
3 NDGFD 2004

**(6) Reservoirs and municipal water supplies (See Exhibit 4, Criteria Map 3).**

There is one reservoir within the corridor meeting this criterion. This reservoir will be avoided.

**(7) Water sources for organized rural water districts**

There are no rural water districts within the proposed corridor.

**(8) Irrigated land (See Exhibit 4, Criteria Map 3).**

There is no land within the corridor which has been identified as having irrigation potential. (See Exhibit 4, Criteria Map 3).

**(9) Areas of recreational significance not designated as exclusion areas**

Nelson Lake offers boating, fishing and other recreational opportunities. Nelson Lake is within 0.3 miles west of the route, but will be avoided.

**c. Selection Criteria**

**A corridor or route shall be designated only when it is demonstrated to the commission by the applicant that any significant adverse effects which will result from the location, construction, and maintenance of the facility 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. (N.D.A.C. § 69-06-08-02).**

**(1) Impact upon agriculture**

**(a) Agricultural production.**

Since the proposed facility will be located entirely on Minnkota land, there are no other landowners or agricultural lands that would be impacted by construction or operations.

**(b) Family farms and ranches.**

Since the proposed facility will be located on Minnkota land, no other landowners will be disturbed.

**(c) Land which the owner can demonstrate has soil, topography, drainage, and an available water supply that can cause the land to be economically suitable for irrigation.**

Oliver Wind is not aware of any land that is planned for irrigation as identified in section D.3.b (8).

**(d) Surface drainage and groundwater flow patterns.**

The surface drainage and ground water flow patterns within the proposed corridor will not be affected along the route, and there is expected to be no effect upon spring run-off drainage patters. The erection of structures will affect land contours so minimally that there will be no effect on drainage.

**(2) Impact Upon**

**(a) Noise sensitive land uses.**

Construction will create very temporary sound disturbances. Because of the rural location of the proposed route, construction should create only a temporary and minimal impact near those few residences and places of business located along the route.

At a distance of 50 feet, construction noise will only occasionally exceed 80 dB (during operation of augers, tampers and impact wrenches). By comparison, a busy street has a typical noise level of about 80 dB, and agricultural machinery often operates at higher levels. When construction machines are not operated, noise levels will be well under 80 dB. In order to minimize noise impacts, all construction equipment will be equipped with a recommended muffler in good working order, and construction activities near homes and places of business will be limited to normal working hours.

Following construction, there will be a minimal amount of sound from the proposed facility as the result of corona effects. Corona effects occur when air molecules near conducting wire are ionized due to changes in the electric field intensity at the conductor surface, producing audible noise, radio noise, small amounts of ozone, and corona-related energy loss. Corona-generated audible noise from transmission lines and substations is generally described as a crackling or hissing noise. This noise is most noticeable when conductors are wet (as a result of precipitation). During dry weather, noise is barely perceptible, creating only a sporadic crackling sound.

**(b) The visual effect on the adjacent area.**

The proposed facility will be visible to landowners and community residents who live near the proposed facility, however, the visual impacts will be incrementally minimal when compared to existing substation and transmission facilities in the immediate area. Also, the tapered design of the intermediate structure is intended to, among other things, minimize visual impacts.

**(c) Extractive and storage resources. (See Exhibit 4, Criteria Map 5).**

Although extractive resources exist within the corridor, they are not currently being developed. Most, if not all, of the mine shafts are abandoned. Where active these shafts would accommodate very minimally coal production. Oliver Wind avoided all active gravel and sand pits and mine shafts when siting the route.

**(d) Wetlands, woodlands, and wooded areas. (See Exhibit 4, Criteria Maps 5 and 6)**

There are approximately 128.4 acres of wetlands which include 127.96 acres of lakes within the proposed corridor (see Table 1). Nelson Lake is listed as FWS NWI Wetlands. The lake is located on the western end of the proposed corridor. Oliver Wind would not impact any wetlands in the area where the proposed facilities would be located.

Based on a cursory calculation, there are approximately 13.74 acres of woodlands and shelterbelts within the proposed corridor ranging in size from approximately one acre to 2.8 acres. (See Exhibit 4, Criteria Map 5). This includes one small area of trees and shrubs previously planted to act as windscreen along the southeast corner of the proposed facility that will be impacted during project construction.

**(e) Radio and television reception, and other communication or electronic control facilities. (See Exhibit 4, Criteria Map 5).**

Based on data from the North Dakota State GIS Hub, two communication towers (microwave tower) and associated facilities are located within the proposed corridor. Oliver Wind will coordinate with operators of towers near the proposed route to avoid any interference with tower operations. Oliver Wind anticipates that the proposed facility will have no adverse impact on radio, television, or other communication or electronic control facilities.

**(f) Human health and safety.**

Oliver Wind will employ proper construction methods to ensure the project will result in minimal impacts to human health and safety.

Human health and safety will be Oliver Wind's paramount concern during construction and operation of the proposed facility. Appropriate standards will be met for construction and installation, and all applicable safety procedures will be followed after installation. The proposed facility will be designed and constructed to meet or exceed the standards of the National Electrical Safety Code.

Safety precautions will be taken during construction and line installation. Conductors will be installed by establishing stringing setup areas within the right-of-way. Conductors will be installed using a "controlled tension method," which ensures that the cable comes off the reel at a constant tension without backlashes. Conductor stringing operations will also require brief access to the structure to secure the conductor wires to the insulators or shield wire clamps once final line sag is established.

Stringing equipment generally consists of wire pullers, tensioners, conductor reels, shield wire reels, and sheave blocks. Stringing operations consist of pulling lightweight cables or ropes through the stringing sheaves located at the structure site. This cable or rope will be used to pull the conductors through the sheaves under sufficient tension to keep the conductor from coming into contact with the ground. Temporary guard or clearance poles will be installed over existing distribution or communication lines, streets, roads, highways, railways, or other obstructions after any necessary notifications are made and/or permits obtained. This ensures that conductors will not obstruct traffic or come into contact with existing energized conductors or other cables, and protects the conductors from damage.

Regular maintenance and inspections will be performed during the life of the facility to ensure its continued integrity. Periodic inspections will be performed by ground personnel on snowmobile or ATV, or by aerial means.

Inspections will be limited to the right-of-way. If problems are found during inspection, repairs will be assigned to construction crews.

The proposed facility will generate electromagnetic fields (EMFs) once energized. The effect of EMF exposure on human health has been a matter of public concern over the past few years. The National Institute of Environmental Health Sciences (NIEHS) issued its final report on June 15, 1999, following six years of intensive research. It concluded that the scientific evidence that extra low frequency EMF exposures pose any health risk is weak. The NIEHS was the lead government agency in directing and carrying out a Congressionally mandated research program on EMF. The EMF levels of the proposed facility are explained below.

The EMF level is related to the power carried by the line, the configuration and sag of the conductors, span length, and location of measurement relative to the line. EMF levels are inversely proportional to the distance from the conductors.

For example, operating at 120,000 kVA (the expected operating level of the project) at a point 3.5 feet above ground at mid-span of an 800 foot span with the conductor height of 27 feet and 70 foot poles, the annual maximum level of EMF will measure approximately 128 mG (milliGauss). At a point 3.5 feet above ground at the base of one of the structures, the annual maximum EMF level will measure approximately 70 mG. At a point 100 feet in transverse direction from the line at a point 3.5 feet above ground at mid-span, the annual maximum EMF will measure approximately 11 mG. At 500 feet in a transverse direction from the line, the annual maximum EMF will measure approximately 0.07 mG.

The EMF levels stated in the above example are expected annual maximums. The minimum level would be about 30 percent of the annual peak, and an annual time-weighted average would be about 45 percent of the annual maximum. The maximum electromagnetic field levels are likely to occur during late afternoon and early evening hours, on either the warmest or coolest days during the year, when the demand for electricity is greatest. Under certain abnormal transmission switching arrangements, the EMF levels could exceed the values given above, e.g. another transmission line down due to a storm. These switching arrangements are typically short term.

Oliver Wind will continue to closely monitor this issue and will respond to any new research on EMF as the circumstances require.

**(g) Animal health and safety**

Livestock impacts will be avoided as discussed in Section D.3.c.1. above.

**(h) Plant life**

Impacts of the proposed facility on agricultural plant life will be minimal as discussed above. Native vegetation disturbed by construction will be reseeded with a native grass seed mixture and unavoidable losses of trees and shrubs

will be restored to as close as practicable to pre-existing conditions. Wetland vegetation will be avoided.

**d. Policy criteria**

**The following have been adopted by the commission to give preference to an applicant that will maximize benefits that result from the adoption of the policies and practices, N.D.A.C. § 69-06-08-02.**

Because Oliver Wind's proposed facility has taken the Commission's policy criteria into consideration, and because the proposed facility adopts and reinforces these policy considerations and maximizes the benefits resulting from the adoption of these policies, this Application should be given preference.

**(1) Location and design.**

FPL Energy has numerous policies that guide the location and design of electric transmission lines. (Examples are provided in Exhibit 6). These policies include minimizing and mitigating impacts, following the National Electric Safety Code requirements and policies, designing the system to efficiently transfer electricity, ensuring worker and public health and safety, and constructing facilities to most effectively and efficiently meet its delivery obligations.

**(2) Training and utilization of available labor in this state for the general and specialized skills required.**

Oliver Wind will use available and qualified contractors to construct the proposed facility. All personnel involved in the construction of the proposed facility must follow the bid specifications in order to meet applicable safety requirements.

**(3) Economies of construction and operation.**

Oliver Wind has designed and will operate the proposed facility as economically efficient as possible.

**(4) Use of citizen coordinating committees.**

No citizen coordinating committees were used for the proposed route or proposed corridor.

**(5) A commitment of a portion of the transmitted product for use in this state.**

Oliver Wind's proposed transmission line will enable the construction of an approximately 50 MW wind energy project in North Dakota. This project will benefit the state and local economy.

**(6) Labor relations.**

Labor relations will not be affected.

**(7) The coordination of facilities.**

By its very nature, the proposed facility will create efficient coordination with existing facilities. The proposed facility was conceived as a way to coordinate existing substations and existing transmission facilities, and to strengthen the reliability of the area's electrical facilities.

**(8) Monitoring of impacts.**

The impacts of the construction and operation of the proposed facility are discussed in section D.3.c., above. Oliver Wind will monitor revegetation success following construction along the route consistent with applicable Stormwater Pollution Prevention Plans required for construction. Any concerns raised by agencies, landowners, or the Public Serve Commission will be addressed immediately. Impacts to wetland and woodlands will be avoided to the maximum extent possible.

**(9) Utilization of existing and proposed rights-of-way and corridors.**

Oliver Wind does not own any existing facilities within the corridor. The proposed route avoids all rights-of-way.

**(10) Other existing or proposed transmission facilities.**

Coordination of the proposed facility with existing and proposed transmission facilities is discussed above.

**e. Summary of Criteria in Proposed Corridor and Route.**

Criteria	Acres or Number within Corridor <sup>a</sup>	Acres or Number within Route <sup>b</sup>	% of Corridor occupied by Criteria	% of Route occupied by Criteria
Exclusion: Community Parks	0	0	0	0
Exclusion: Habitat for Threatened, Rare species	0	0	NA	NA
Avoidance: Federal Waterfowl Production Areas	0	0	0	0
Avoidance: State Wildlife Management Areas	0	0	0	0
Avoidance: Irrigated land	0	0	0	0
Avoidance: Reservoirs	128 acres*	0	19%	0
Avoidance: Occupied residences	0	0	NA	NA
Avoidance: Other historic resources	0	0	NA	NA
Selection: Extractive Resources	**	**	NA	NA
Selection: Wetlands	128.4 acres	0	19%	0
Selection: Woodlands	13.74 acres	0***	2.1%	minimal
Selection: Communication Towers	1	0	NA	N/A

<sup>a</sup> corridor size is estimated at 667acres

<sup>b</sup> Route with 100- ft. buffer is estimated at 2.8 acres

\* Nelson Lake (a FWS NWI Wetlands) is located at the edge of the corridor but will not be impacted by this proposed project.

\*\* Extractive resources exist within the corridor but are not currently being developed.

\*\*\*There is one small area of trees and shrubs previously planted to act as windscreen along the southeast corner of the proposed facility that will be impacted during project construction.

**f. Design and construction limitations.**

In order to satisfy the need expressed in section II.C of this application, it was necessary to originate the proposed facility at a substation in Oliver County and connect it to a proposed transmission facility in Oliver County (Square Butte Cooperative’s Center Substation). The location of the proposed substation and the connection in Oliver County has limited design by dictating the points of terminus for the line.

**g. Economic considerations.**

Oliver Wind has strived and will continue to strive to minimize any economic damage this proposed facility might create. The route was chosen in as straight a line as possible with consideration given to willing landowner participation, exclusion areas, avoidance areas, and other selected areas. Obviously, when the length of the line is increased, the project costs also increase.

**4. General Mitigative Measures to Minimize Adverse Impacts.**

**Discuss the general mitigative measures that will be taken to minimize adverse impacts which result from a route location in the proposed corridor.**

Oliver Wind will avoid potential impacts to sensitive resources, which includes exclusion, avoidance and selection criteria, as noted above in the criteria sections above. (See Section II.D.3). Oliver Wind will implement a construction stormwater pollution prevention plan to minimize impacts to soil erosion and water quality.

**5. Qualifications of People Involved in the Corridor Study**

**List the qualifications of the people in the various disciplines that contributed to the corridor location study.**

<b>Name</b>	<b>Educational and Professional Experience</b>	<b>Project Responsibility</b>
John DiDonato	Director , Project Development FPL Energy Bachelor’s degree, Kent State University. Master’s degree, Florida Atlantic University	Project developer representing FPL Energy in all commercial and regulatory aspects of the project.
Kenneth Stein	Principal Environmental Specialist FPL Energy J.D University of Oregon, Environmental Law B.S University of Michigan, Environmental Science	Project environmental manager.
Dick Rausch	Construction Project Manager FPL Energy	Provided input on route from a "constructability" perspective
Matt Grylicki	Consulting Engineer Peak Power	Transmission line engineering.
Larry Levin	Construction Project Leader FPL Energy	Representing FPL Energy on landowner discussions and selection of corridor.
Tom Factor	Land Easement Specialist/Route Mapping FPL Energy	Representing FPL Energy on landowner discussions and selection of corridor.
Ted Weissman	Land Easement Specialist FPL Energy	Representing FPL Energy on landowner discussions and selection of corridor.
Brian Bjella	Attorney for applicants Fleck, Mather & Strutz, Ltd. J.D. degree, University of North Dakota	Applicant's counsel.

## **6. Maps**

**Map the criteria within the designated corridor showing the proposed route and location of any new associated facilities.**

See Section II.D.2 of the Certificate of Corridor Compatibility Application.

## **REFERENCES**

North Dakota Game and Fish Department (NDGFD). 2004. North Dakota's 100 Species of Conservation Priority. North Dakota Outdoors. July, 2004.

United States Fish and Wildlife Service (FWS). Threatened and Endangered Species System. North Dakota Listings. Downloaded December 15, 2004. Online at:  
[http://ecos.fws.gov/tess\\_public/TESSWebpageUsaLists?state=all](http://ecos.fws.gov/tess_public/TESSWebpageUsaLists?state=all)

# APPLICATION FOR ROUTE PERMIT

## TABLE OF CONTENTS

I.	INTRODUCTION .....	1
II.	ANALYSIS ACCORDING TO PSC GUIDELINES .....	1
	SECTION A. DESCRIPTION OF FACILITY .....	1
	1. Type .....	1
	2. Product .....	1
	3. Size and Design .....	1
	4. Time Schedule .....	1
	5. Right-of-way Preparation, Construction, and Reclamation Procedures .....	1
	6. Easement Acquisition .....	3
	SECTION B. LOCATION.....	3
	1. FPL Energy LLC Company Polices .....	3
	2. Factors listed in N.D.C.C. § 49-22-09 .....	4
	a. 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.....	4
	b. The effects on new energy conversion and transmission technologies and systems designed to minimize adverse environmental effects. ....	4
	c. The potential for beneficial uses of waste energy from a proposed energy conversion facility.....	4
	d. Adverse direct and indirect environmental effects which cannot be avoided should the proposed site or route be designated. ....	4
	e. Alternatives to the proposed site, corridor, or route which are developed during the hearing process and which minimize adverse effects. ....	4
	f. Irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated. ....	5
	g. The direct and indirect economic impacts of the proposed facility. ....	5
	h. 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. ....	5
	i. The effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites. ....	5
	j. 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. ....	5
	k. Problems raised by federal agencies, other state agencies, and local entities. ....	5
	3. Criteria maps.....	5
	4. Description of PSC criteria found along the proposed route .....	5
	5. Evaluation of criteria found along the proposed route.....	6
	a. Exclusion areas .....	6
	(1) Designated or registered national: parks, memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas. ....	6
	(2) Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves. ....	6
	(3) County parks and recreational areas; municipal parks; parks owned or administered by other governmental subdivisions. (See Exhibit 4, Criteria Map 2).....	6

(4)	Areas critical to the life stages of threatened or endangered animal or plant species. (See Exhibit 4, Criteria Map 2).	6
(5)	Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged. (See Exhibit 4, Criteria Map 2).	6
	b.    Avoidance Areas	6
(1)	Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands. (See Exhibit 4, Criteria Map 3).	6
(2)	Designated or registered state: wild, scenic or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands (See Exhibit 4, Criteria Map 3).	7
(3)	Historical resources which are not specifically designated as exclusion or avoidance areas. (See Exhibit 4, Criteria Map 4).	7
(4)	Areas which are geologically unstable.	7
(5)	Within five hundred feet of a farmhouse, rural residence, or place of business. This criterion shall not apply to a water pipeline transmission facility (See Exhibit 4, Criteria Map 4).	7
(6)	Reservoirs and municipal water supplies. (See Exhibit 4, Criteria Map 3).	7
(7)	Water resources for organized rural water districts.	7
(8)	Irrigated land. (See Exhibit 4, Criteria Map 3).	7
(9)	Areas of recreational significance which are not designated as exclusion areas.	7
	c.    Selection Criteria	7
(1)	The impact upon agriculture:	7
(a)	Agricultural production.	7
(b)	Family farms and ranches.	7
(c)	Land which the owner can demonstrate has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation.	8
(d)	Surface drainage patterns and ground water flow patterns.	8
(2)	The impact upon:	8
(a)	Noise sensitive land uses.	8
(b)	The visual effect on the adjacent area.	8
(c)	Extractive and storage resources. (See Exhibit 4, Criteria Map 5).	8
(d)	Wetlands, woodlands, and wooded areas. (See Exhibit 4, Criteria Maps 5 and 6).	8
(e)	Radio and television reception, and other communication or electronic control facilities. (See Exhibit 4, Criteria Map 5).	8
(f)	Human health and safety.	8
(g)	Animal health and safety.	8
(h)	Plant life.	8
	d.    Policy Criteria	9
	e.    Summary of Criteria in Proposed Corridor and Route	9
	f.    Design and Construction Limitations	9
	g.    Economic Considerations	9
6.	Environmental Impacts and Mitigation	9
	a.    Physical environment	9
(1)	Topography and geology	9
(2)	Mineable resources	9
(3)	Water resources	9
(4)	Soils	9
(5)	Atmospheric conditions	9
	b.    Biological environment	10
(1)	Vegetation	10
(2)	Fish and wildlife	10
	Habitat loss	10

Electrocution .....	10
Bird collision.....	10
(3) Rate and endangered species .....	11
c. Cultural environment .....	11
(1) Land use.....	11
(2) Agriculture .....	11
(3) Community services .....	11
(4) Transportation.....	11
(5) Population and economy.....	11
(6) Archaeological and Historical sites .....	11
7. Qualifications of People Involved in the Facility Route Location Study .....	12
8. Maps .....	12
REFERENCES .....	12

## I. INTRODUCTION

This is an Application for a Route Permit by FPL Energy Oliver County Wind, LLC (Oliver Wind). Although separate and apart from, it is to be reviewed in conjunction with Oliver Wind's Certificate of Corridor Compatibility Application. In these Applications, Oliver Wind is seeking siting approval for a 230,000 Volt (230 kV) transmission line in Oliver County (See Exhibit 1). Because the two Applications have been consolidated for filing, and in order to avoid redundancies, many sections of the Route Permit Application refer back to the Certificate of Corridor Compatibility Application for analysis.

## II. ANALYSIS ACCORDING TO PSC GUIDELINES

This Application follows the format set forth in the North Dakota Public Service Commission Application Guidelines for a Route Permit ("PSC Guidelines"), promulgated pursuant to the North Dakota Energy Conversion and Transmission Facility Siting Act, N.D.C.C. Chapter 49-22.

### SECTION A. DESCRIPTION OF FACILITY

#### 1. Type

See Section II.A.1. of the Certificate of Corridor Compatibility Application.

#### 2. Product

See Section II.A.2. of the Certificate of Corridor Compatibility Application.

#### 3. Size and Design

See Section II.A.3. of the Certificate of Corridor Compatibility Application. A Design Data Report will be included at a later date.

#### 4. Time Schedule

See Section II.A.3. of the Certificate of Corridor Compatibility Application.

#### 5. Right-of-way Preparation, Construction, and Reclamation Procedures

**(This section is not specifically called for in the PSC Guidelines, but it is included to provide additional relevant information as contemplated under the Energy Conversion and Transmission Facility Siting Act, N.D.C.C. § 49-22-08.1, Subd.e.)**

#### Transmission Line

The proposed route passes primarily through private land (Minnkota). The length of the route between substation fence lines is approximately 300 feet. Because there are very few obstructions within the proposed route, minimal right-of-way preparations will be necessary. In those few areas where there is tree and shrub growth, right-of-way clearing may include cutting and removal. Where practicable, trees and low-growing vegetation will not be removed if future growth will not interfere with the operation or maintenance of the line. There may be limited use of herbicides to remove or control the growth of vegetation in some areas. Herbaceous and smaller woody plants will not be disturbed, except for those that will be crushed unavoidable during construction of the proposed facility. No critical threatened or endangered species habitat or otherwise sensitive vegetation will be permanently disturbed. There will be no machine clearing of vegetation within 50 feet of any river or stream, and ground cover vegetation near rivers or streams will not be disturbed.

Geotechnical investigation for the proposed facility included two (2) borings to a depth of 35 feet within the Oliver Substation footprint and two borings within the Square Butte

Substation. All borings were sampled using Standard Penetration Test procedures under the guidance of a licensed Geotechnical consultant. The soils samples from these boring were tested in the laboratory to establish engineering properties such as workability, bearing capacity, thermal resistivity, and corrosivity. Ground electrical resistivity was also measured in the field using a standard four-point Wenner array. The results of the geotechnical exploration program did not indicate any geotechnical concerns that would preclude construction of the facility.

The structures will be designed for installation at existing grades. Therefore, structure sites will not be graded or leveled, unless it is necessary to provide a reasonably level area for construction access and activities. Once construction is completed, any graded area will be restored to its original contour to the extent practicable.

Staging and laydown areas will be located within the right-of-way and limited to previously disturbed or developed areas.

After the right-of-way is prepared, the structure will be framed and erected at the structure site. The structure site will need to be accessed several times. This access will include construction crews and equipment, such as digger/derrick trucks to auger holes for the structure, a crane for structure setting, and crew vehicles and bucket trucks for wire stringing and clipping operations.

The largest disturbance during installation of the pole will occur during the excavation of the foundation. The foundation will extend into the subsurface approximately 25 feet and be approximately six (6) feet in diameter. The foundation will be constructed of reinforced concrete with pre-fabricated reinforcing placed in the boreholes. Spoil removed during boring activities for the intermediate structure will be removed to adjacent upland areas.

After the structure has been erected, conductors will be installed by establishing stringing setup areas within the right-of-way. Conductors will be installed using a "controlled tension method," which ensures that the cable comes off the reel at a constant tension without backlashes. Conductor stringing operations will also require brief access to the structure to secure the conductor wires to the insulators or shield wire clamps once final line sag is established.

Stringing equipment generally consists of wire pullers, tensioners, conductor reels, shield wire reels, and sheave blocks. Stringing operations consist of pulling lightweight cables or ropes through the stringing sheaves located at every structure site. This cable or rope will be used to pull the conductors through the sheaves under sufficient tension to keep the conductor from coming into contact with the ground. Temporary guard or clearance poles will be installed over existing distribution or communication lines, streets, roads, highways, railways, or other obstructions after any necessary notifications are made and/or permits obtained. This ensures that conductors will not obstruct traffic or come into contact with existing energized conductors or other cables, and protects the conductors from damage. Once a section of a line has been installed, temporary structures will be removed, holes backfilled and the area of disturbance reseeded to produce the same cover that was removed.

Debris associated with the transmission line construction may include construction materials such as packaging material, insulator crates, conductor reels, and wrapping. This debris may also include excess excavated soil and removed vegetation. Materials with salvage value, including conductor reels, unused conductor and hardware, poles, and other materials, will be removed from the site for reuse. Excess soil and vegetation will be distributed along the transmission right-of-way, but will not be placed in wetlands or other aquatic resources.

Solid waste will be temporarily stored within the right-of-way or within the temporary construction easements, and then transported to appropriate disposal facilities. Debris will be disposed of in accordance with federal, state, and local regulations.

Limited ground disturbance at the structure site is anticipated during construction. The staging areas will be located within the right-of-way, and will be limited to the structure site areas for structure laydown and framing prior to structure installation. Disturbed areas will be restored to their original condition to the maximum extent practicable. Post-construction reclamation activities will generally include the following:

- Cleaning up all construction sites, including removing and disposing of debris.
- Removing all temporary facilities, including access trains, and staging and laydown areas.
- Employing appropriate erosion control measures.
- Reseeding disturbed areas (due to construction activities) with vegetation like that which was removed and restoring the areas to their original condition to the extent possible.

## **6. Easement Acquisition**

**(This section is not specifically called for in the PSC Guidelines, but it is included to provide additional relevant information as contemplated under the Energy Conversion and Transmission Facility Siting Act, N.D.C.C. § 49-22-08.1, Subd.f.)**

Since the proposed facility will be located on Minnkota land, no other landowners will be disturbed.

## **SECTION B. LOCATION**

This section explains the considerations that contributed to Oliver Wind's selection of the proposed route. It describes the justification for Oliver Wind's location of the proposed route within the proposed corridor. FPL Energy's environmental policies are discussed in Section II.B.1. The factors set forth in N.D.C.C. § 49-22-09 are examined in Section II.B.2., and environmental and human health criteria are discussed and analyzed in Section II.B.4. Specific impacts of the proposed facility and mitigation of those impacts are provided in Section II.B.5.

### **1. FPL Energy LLC Company Policies**

**Discuss the utility's policies and commitments to limit the environmental impact of its facilities, including copies of board resolutions and management directives.**

FPL Energy has strong corporate environmental commitments. Its policies are designed to avoid and minimize environmental impacts of its facilities. FPL Energy was ranked #1 by Innovest (an independent ranking firm) for its environmental commitment. Please refer to the <http://www.fplenergy.com> for more information on this and other environmental awards. Other policies ensure adherence to the National Electric Safety Code, efficient transfer of electricity, worker and public health and safety, and economical construction facilities to minimize rate increases to its customers. Relevant policies are discussed throughout this Application and examples are provided in Exhibit 6.

## 2. Factors listed in N.D.C.C. § 49-22-09

**Discuss the factors listed in § 49-22-09, N.D.C.C. to aid the Commission's evaluation of the proposed route.**

The Energy Conversion and Transmission Facility Siting Act (N.D.C.C. § 49-22-09) lists 11 factors designed to aid the Commission in its evaluation and designation of corridors and routes. This section discusses the actions Oliver Wind has taken or will take to address these factors. Specific information is also provided in later sections that describes the location and consideration of exclusion and avoidance areas, impacts to the environment, and mitigative measures.

**a. 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.**

Research and investigations relating to the effects of the location, construction and operation of the proposed facility are referenced throughout this Application and the Certificate of Corridor Compatibility Application.

**b. The effects on new energy conversion and transmission technologies and systems designed to minimize adverse environmental effects.**

Oliver Wind will follow the most current standards of the National Electric Safety Code (NESC). These state-of-the-art design standards help minimize adverse effects to the environment and ensure the safety and health of the public, as well as the employees and contractors who construct, operate and maintain the facilities. Oliver Wind will also follow safety policies that are even more stringent than the NESC. These policies further minimize environmental impacts, and ensure the safety of both the public and Oliver Wind's employees.

Oliver Wind has also followed their policies that require them to practice and promote environmental stewardship. (See Exhibit 6). Oliver Wind's policies were developed and are constantly revised to incorporate the most recent scientific and technological information available for electric transmission facilities.

**c. The potential for beneficial uses of waste energy from a proposed energy conversion facility.**

This factor is not applicable to this transmission facility project.

**d. Adverse direct and indirect environmental effects which cannot be avoided should the proposed site or route be designated.**

The impacts to woodlands will be minimal. There is one small area of trees and shrubs previously planted to act as windscreen along the southeast corner of the proposed facility that will be impacted during project construction.

**e. Alternatives to the proposed site, corridor, or route which are developed during the hearing process and which minimize adverse effects.**

The project facility was designed to serve the wind energy center. The proposed route is the most efficient route for this wind energy center to the Square Butte Cooperative's Center Substation. The site proposed for the new wind energy center has excellent wind resources and minimal environmental effects. Therefore, a hearing may not be necessary for this application as discussed further in the Waiver of Procedures and Time Schedules.

**f. Irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated.**

There are no irreversible or irretrievable commitments of natural resources created by the siting of the proposed facility, corridor, or route.

**g. The direct and indirect economic impacts of the proposed facility.**

The proposed facility will provide direct and indirect positive economic impacts within the State of North Dakota. The purpose of the project is to increase the reliability of electric service throughout the region. This increased reliability and capacity may help attract industrial growth – especially in the agricultural processing industry.

Local businesses are likely to experience positive impact from construction activities along the route. Construction materials and supplies for the proposed facility will be purchased from local suppliers whenever feasible.

**h. 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.**

Oliver Wind is not aware of any existing plans for other development in the vicinity of the proposed route and corridor. The proposed facility will enhance the electric system, to the benefit of industrial and non-industrial customers alike.

**i. The effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites.**

Oliver Wind’s consultant conducted a Class I review of historic and archeological records through the North Dakota State Historic Preservation Office (SHPO) as well as a Class III pedestrian survey. No archaeological/cultural resources were identified. (See also the analysis in Section II.D.3.b.(3) of the Certificate of Corridor Compatibility Application).

**j. 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.**

None located along the proposed route. (See analysis in Section II.D.2.a.(4) of the Certificate of Corridor Compatibility Application).

**k. Problems raised by federal agencies, other state agencies, and local entities.**

Each of the agencies listed in the Certificate of Corridor Compatibility Application is aware of the proposed facility. FPL Energy will follow all conditions that may be imposed by these agencies.

**3. Criteria maps**

**Identify and map the criteria that led to the proposed route location within the designated corridor.**

See Section II.D.2. of the Certificate of Corridor Compatibility Application and Exhibit 4.

**4. Description of PSC criteria found along the proposed route**

**Discuss in detail the relative value of each criteria and how the location, construction, and operation of the facility will affect each criteria.**

See Section II.D.3. of the Certificate of Corridor Compatibility Application and Exhibit 4.

**5. Evaluation of criteria found along the proposed route**

The criteria to be evaluated shall include at a minimum all of the following which are within the designated corridor:

- a. Exclusion area;**
- b. Avoidance areas;**
- c. Selection criteria;**
- d. Policy criteria;**
- e. Design and construction limitations; and**
- f. Economic considerations.**

The proposed transmission line route avoids the exclusion areas and avoidance areas to the maximum extent practical within the corridor.

**a. Exclusion areas**

- (1) Designated or registered national: parks, memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas.**

None located along the proposed route. See Section II.D.3.a.(1) of the Certificate of Corridor Compatibility Application.

- (2) Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves.**

None located along the proposed route. See Section II.D.3.a.(2) of the Certificate of Corridor Compatibility Application.

- (3) County parks and recreational areas; municipal parks; parks owned or administered by other governmental subdivisions. (See Exhibit 4, Criteria Map 2)**

None located along the proposed route. See Section II.D.3.a.(3) of the Certificate of Corridor Compatibility Application.

- (4) Areas critical to the life stages of threatened or endangered animal or plant species. (See Exhibit 4, Criteria Map 2).**

None located along the proposed route. See Section II.D.3.a.(4) of the Certificate of Corridor Compatibility Application.

- (5) Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged. (See Exhibit 4, Criteria Map 2).**

None located along the proposed route. See Section II.D.3.a.(5) of the Certificate of Corridor Compatibility Application.

**b. Avoidance Areas**

- (1) Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands. (See Exhibit 4, Criteria Map 3).**

None located along the proposed route. See Section II.D.3.b.(1) of the Certificate of Corridor Compatibility Application.

- (2) **Designated of registered state: wild, scenic or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands (See Exhibit 4, Criteria Map 3).**

None located along the proposed route. See Section II.D.3.b.(2) of the Certificate of Corridor Compatibility Application.

- (3) **Historical resources which are not specifically designated as exclusion or avoidance areas. (See Exhibit 4, Criteria Map 4).**

FPL Energy's consultant conducted a Class I review of historic and archeological records through the North Dakota State Historic Preservation Office (SHPO) as well as a Class III pedestrian survey. No archaeological/cultural resources were identified. See Section II.D.3.b.(3) of the Certificate of Corridor Compatibility Application.

- (4) **Areas which are geologically unstable.**

None located along the proposed route. See Section II.D.3.b.(4) of the Certificate of Corridor Compatibility Application.

- (5) **Within five hundred feet of a farmhouse, rural residence, or place of business. This criterion shall not apply to a water pipeline transmission facility (See Exhibit 4, Criteria Map 4).**

The route avoids all residences located within the corridor. See Section II.D.3.b.(5) of the Certificate of Corridor Compatibility Application.

- (6) **Reservoirs and municipal water supplies. (See Exhibit 4, Criteria Map 3).**

None located along the proposed route. See Section II.D.3.b.(6) of the Certificate of Corridor Compatibility Application.

- (7) **Water resources for organized rural water districts.**

None located along the proposed route. See Section II.D.3.b.(7) of the Certificate of Corridor Compatibility Application.

- (8) **Irrigated land. (See Exhibit 4, Criteria Map 3).**

None located along the proposed route. See Section II.D.3.b.(8) of the Certificate of Corridor Compatibility Application.

- (9) **Areas of recreational significance which are not designated as exclusion areas.**

None located along the proposed route. See Section II.D.3.b.(9) of the Certificate of Corridor Compatibility Application.

**c. Selection Criteria**

- (1) **The impact upon agriculture:**

- (a) **Agricultural production.**

The route avoids all residences and agricultural lands. See Section II.D.3.c.(1)(a) of the Certificate of Corridor Compatibility Application.

- (b) **Family farms and ranches.**

The route avoids all residences and agricultural lands. See Section II.D.3.c.(1)(b) of the Certificate of Corridor Compatibility Application.

- (c) **Land which the owner can demonstrate has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation.**

None located along the proposed route. See Section II.D.3.c.(1)(c) of the Certificate of Corridor Compatibility Application.

- (d) **Surface drainage patterns and ground water flow patterns.**

See Section II.D.3.c.(1)(d) of the Certificate of Corridor Compatibility Application.

**(2) The impact upon:**

- (a) **Noise sensitive land uses.**

None located along the proposed route. See Section II.D.3.c.(2)(a) of the Certificate of Corridor Compatibility Application.

- (b) **The visual effect on the adjacent area.**

The effects of this new project on the visual resources of the area will be minimal. See Section II.D.3.c.(2)(b) of the Certificate of Corridor Compatibility Application.

- (c) **Extractive and storage resources. (See Exhibit 4, Criteria Map 5).**

A gravel pit was located at the northern end of the proposed route within the existing Square Butte Switchyard. Since this gravel pit shows up beneath the existing switchyard, it is unlikely to be active. See Section II.D.3.c.(2)(c) of the Certificate of Corridor Compatibility Application.

- (d) **Wetlands, woodlands, and wooded areas. (See Exhibit 4, Criteria Maps 5 and 6).**

The proposed facilities will avoid wetlands, woodlands and wooded areas. See Section II.D.3.c.(2)(d) of the Certificate of Corridor Compatibility Application.

- (e) **Radio and television reception, and other communication or electronic control facilities. (See Exhibit 4, Criteria Map 5).**

None located along the proposed route. See Section II.D.3.c.(2)(e) of the Certificate of Corridor Compatibility Application.

- (f) **Human health and safety.**

None located along the proposed route. See Section II.D.3.c.(2)(f) of the Certificate of Corridor Compatibility Application.

- (g) **Animal health and safety.**

None located along the proposed route. See Section II.D.3.c.(2)(g) of the Certificate of Corridor Compatibility Application.

- (h) **Plant life.**

None located along the proposed route. See Section II.D.3.c.(2)(h) of the Certificate of Corridor Compatibility Application.

**d. Policy Criteria**

See Section II.D.3.d of the Certificate of Corridor Compatibility Application.

**e. Summary of Criteria in Proposed Corridor and Route**

See Section II.D.3.e of the Certificate of Corridor Compatibility Application.

**f. Design and Construction Limitations**

See Section II.D.3.f of the Certificate of Corridor Compatibility Application.

**g. Economic Considerations**

See Section II.D.3.g of the Certificate of Corridor Compatibility Application.

**6. Environmental Impacts and Mitigation**

**Discuss the mitigative measures that will be taken to minimize adverse impacts which result from the location, construction, and operation of the facility.**

This section summarizes potential environmental impacts of the proposed facility, especially those that are not covered in the above listed criteria, and details mitigation measures.

**a. Physical environment**

**(1) Topography and geology**

Topography and geology will not be affected along the route.

**(2) Mineable resources**

There are no active sand or gravel pits along the route. Coal mine developments are common in the general area and potential exists for coal resource to be present in the strata beneath the proposed corridor. However, at this time there are no known plans for mine development along the proposed route. Given the number of mines in the area, coal may be mineable.

**(3) Water resources**

FPL Energy will follow construction guidelines and recommendations of the Department of Health. This includes the use of mesh or burlap to hold soil during construction; establishing vegetative cover on disturbed or newly constructed areas; and following safe storage and handling procedures to prevent contamination of water from fuel spillage, lubricants, and chemicals.

**(4) Soils**

To minimize the amount of soil compaction during construction, access trails will be kept to the minimum necessary for construction equipment. When soils are exposed, Oliver Wind will employ appropriate erosion control measures. Practices will include placement of sediment barriers downstream of construction and revegetation as soon as possible after construction. Compaction will be alleviated by tilling as necessary following construction. However, such measures are not expected to be necessary to reestablish vegetation.

**(5) Atmospheric conditions**

There are two potential atmospheric impacts from the proposed facility construction: (1) excess dust from construction, and (2) noise. Dust levels will be monitored during the construction process and if excess dust is noted, water will be sprayed to suppress it. Also, ensuring that heavy equipment has proper muffling

systems will minimize noise during construction. Construction near farm and city residence will be limited to normal working hours to minimize impact of residents.

**b. Biological environment**

**(1) Vegetation**

Vegetation consists of mixed prairie grasses and forbs, with some volunteer alfalfa. In a few areas, clearing will consist of the removal of planted landscape trees and brush. Where practicable, trees and low-growing vegetation will be left uncleared if their future growth will not interfere with the operation or maintenance of the line. In some areas there will be limited use of herbicides to remove or control the growth of vegetation. Herbaceous and smaller woody plants will not be disturbed, except for those that will be disturbed unavoidably during structure installation. Tree removal will be minimized to the extent practicable to allow for safe and efficient management of the tower construction activities.

Areas that are disturbed to the point that vegetation is removed will be reseeded using similar vegetation that was removed, to the extent possible.

**(2) Fish and wildlife**

In order to examine potential fish and wildlife impacts of the proposed facility, representatives of FPL Energy obtained comments from and met with U.S. Fish and Wildlife Service and the North Dakota Game and Fish Department.

There are two main impacts to fish and wildlife: (1) displacement of habitat by structure placement, and (2) migratory and resident bird collision of or electrocution with the power line. An examination of these impacts and Oliver Wind's proposed mitigation plans is outlined below.

**Habitat loss**

Habitat displacement will be minimal since construction will take place in an area already disturbed by other substation and transmission facilities. Disturbed areas will be restored to their original condition to the maximum extent practicable.

**Electrocution**

Electrocution of birds by power lines is a concern mostly for raptor species, such as golden eagles and red-tailed hawks. Birds are electrocuted when they come in contact with more than one conductor wires at once. This can occur on smaller distribution lines that have short distances between conductors (Olendorff et al. 1981 and Avian Power Line Interaction Committee 1996). The conductors for the proposed facility are spaced approximately 16 feet apart to make electrocution very unlikely.

**Bird collision**

Bird collision is a concern mostly for large, heavy bodied, flocking birds that make daily flight between adjacent habitats for roosting and feeding, and those with nocturnal feeding flights. Therefore, migratory waterfowl (e.g., tundra swans, snow geese, Canada geese, and dabbling ducks) and large waterbirds (e.g., sandhill cranes, pelicans, and gulls) have the greatest risk for collision, specifically where the proposed facility crosses large bodies of water and wetlands (Avian Power Line Interaction Committee 1994).

Since the proposed facility avoids wetlands and runs in a north-south direction (parallel to migratory bird routes), it is unlikely that migratory waterfowl and waterbirds will be impacted.

**(3) Rate and endangered species**

As set forth more fully in the Corridor Application, there are no federally listed threatened or endangered animal/plant species previously documented within the corridor (or route).

The proposed corridor contains one sensitive species and habitat which has been avoided by this proposed corridor and route.

**c. Cultural environment**

**(1) Land use**

The proposed facility will have no impacts to agricultural land use. (See discussion in Section II.D.3.c.(1) of the Corridor Certificate Application). Short-term impacts will take place during construction. With the proper construction and reclamation methods mentioned above for most land use will return to normal.

**(2) Agriculture**

The proposed facility will be located within Minnkota property. The proposed facility should not affect long-term productivity of the soil. The original contours will be maintained to keep existing drainage patterns intact. (See also the discussion in Section II.D.3.c(1) of the Corridor Certificate Application).

**(3) Community services**

The impact to community services will be as a result of construction activity and influx of contractor employees. Oliver Wind's personnel and contractors will be utilized for all construction activities. The communities along the proposed route have sufficient hotels and other services to handle the influx of workers.

**(4) Transportation**

The proposed facility does not cross any public roads.

**(5) Population and economy**

Oliver Wind's employees and contractors will design, construct, and maintain the proposed facility. All workers will be either Oliver Wind's employees or contract employees. It is possible that a contractor will be either Oliver Wind's employees or contract employees. It is possible that a contractor may hire a small number of local workers. No additional permanent jobs will be created by this action. The construction activities will provide a seasonal influx of additional dollars into the local communities during the construction phase, and materials will be purchased from local vendors where feasible.

**(6) Archaeological and Historical sites**

With respect to archaeological/cultural resource, Oliver Wind's consultant conducted a Class I review of historic and archeological records through the North Dakota State Historic Preservation Office (SHPO) as well as a Class III pedestrian survey. No archaeological/cultural resources were identified. (See Section II.D.3.b.(3).)

**7. Qualifications of People Involved in the Facility Route Location Study**

See Section II.D.5 of the Certificate of Corridor Compatibility Application.

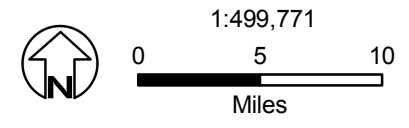
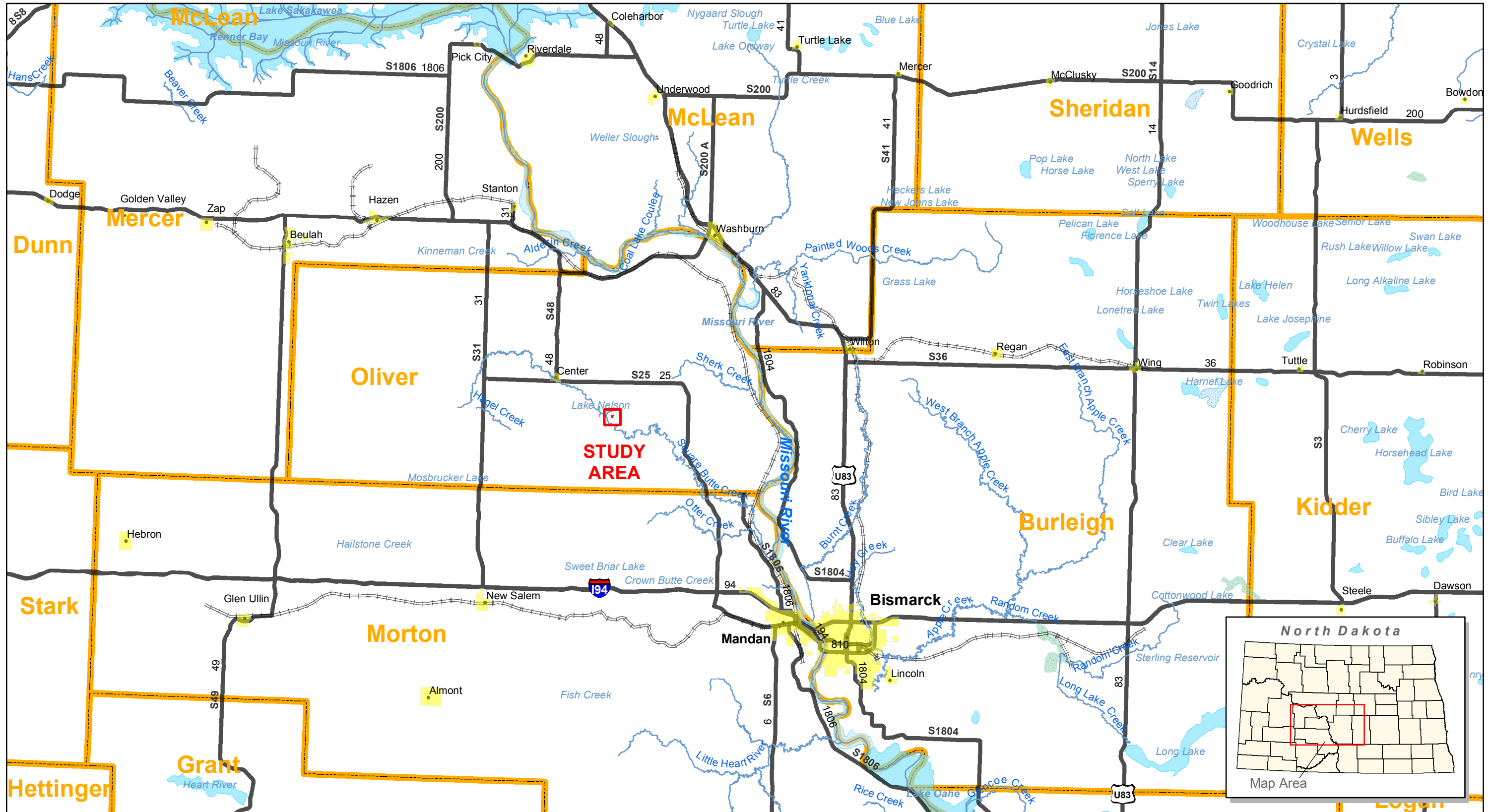
**8. Maps**

See Section II.D.2 of the Certificate of Corridor Compatibility Application and the Waiver of Procedures.

**REFERENCES**

North Dakota Game and Fish Department (NDGFD). 2004. North Dakota's 100 Species of Conservation Priority. North Dakota Outdoors. July, 2004.

United States Fish and Wildlife Service (FWS). Threatened and Endangered Species System. North Dakota Listings. Downloaded December 15, 2004. Online at: [http://ecos.fws.gov/tess\\_public/TESSWebpageUsaLists?state=all](http://ecos.fws.gov/tess_public/TESSWebpageUsaLists?state=all)



- Cities and Towns
- Study Area
- County Lines

**FIGURE 1**  
**GENERAL LOCATION MAP AND STUDY AREA**  
**FPLE - ELECTRICAL TRANSMISSION LINE**  
**OLIVER COUNTY, NORTH DAKOTA**

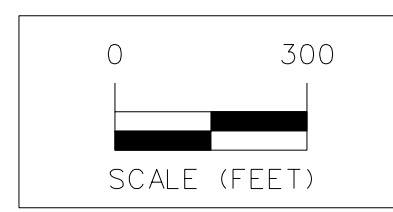
V:\PENNDATE.TBL V:\print\_drivers\Color\Terry\_Hoff.01  
 11.4.17 11:300  
 6/26/2006 4:35:12 PM  
 I:\MS\_MY\_INT\105.1003\Cadd\MINKOTA POWER SEC. 33-142-83\_SE.dwg  
 6/26/2006 4:35:12 PM



- 22**
- TURBINE WITH NUMBER
  - UNDERGROUND COLLECTION LINE
  - OVERHEAD COLLECTION LINE
  - ACCESS ROAD
  - CONSTRUCTION EASEMENT
  - PROPERTY BOUNDARY
  - EXISTING ROAD RIGHT-OF-WAY
  - EXISTING ROAD CENTERLINE

PROPERTY OWNER APPROVAL	
OWNER _____	DATE _____
OWNER _____	DATE _____

PRELIMINARY



ISSUE DATE: 6-26-2006

**LEGEND**

MARK	REVISION	DATE	BY
5	ADDED ACCESS ROAD TO PROPOSED SUBSTATION	6/26/06	DW
4	RELOCATED SUBSTATION, COLLECTION LINE AND EASEMENTS	6/15/06	DW
3	RELOCATED COLLECTION LINE AND ADDED EASEMENTS	6/8/06	DW
2	RELOCATED COLLECTION LINE	3/24/06	DW

Engineer: JWK	Checked By: MGG	Scale: 1"=
Technician: DW	Date: 1/26/06	Field B/c:
Project No: 105.1003		Sheet 2 of 1
File No:		

**OLIVER COUNTY, NORTH DAKOTA**

**FPL - OLIVER COUNTY WIND CTR**

**EXHIBIT B - MINNKOTA POWER**

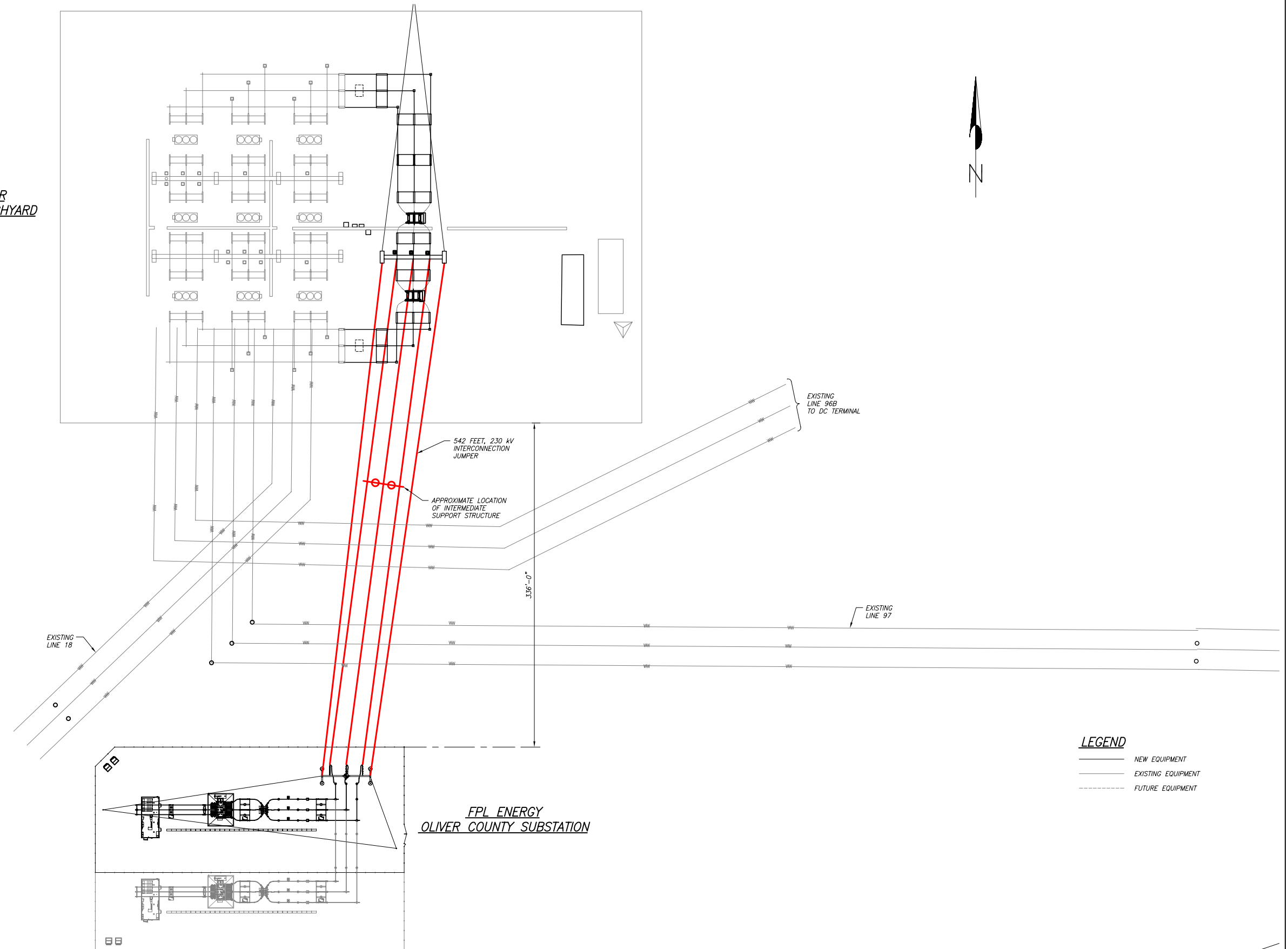
**SNYDER & ASSOCIATES**

ATLANTA, GA 770-260-6666  
 IOWA 51503 712-322-3202  
 CEDAR RAPIDS, IA 319-322-8894  
 MARYVILLE, MO 800-862-6688  
 ST. JOSEPH, MO 816-944-5222

105.1003

Sheet 3 of 3

MINNKOTA POWER  
SQUARE BUTTE SWITCHYARD



**LEGEND**  
 — NEW EQUIPMENT  
 — EXISTING EQUIPMENT  
 - - - FUTURE EQUIPMENT

FPL ENERGY  
OLIVER COUNTY SUBSTATION

PLOTED: 06/16/06 09:03:29 AM FILENAME: F:\apps\05-6059\dwg\60591206.dwg USER: per



P.O. Box 340  
 Golden, Colorado 80402  
 (303) 462-1100 phone  
 (303) 462-2600 fax



REV	DESCRIPTION	ENG	DWN	CHK	DATE
A	FOR FPL ENERGY REVIEW AND COMMENT	PSF	GLJ	PSF	05/12/06
B	REVISED PER FPL ENERGY COMMENTS	PSF	GLJ	PSF	05/16/06
C	ADDED INTERMEDIATE SUPPORT STRUCTURE	PSF	PSF	PSF	05/30/06
D	REVISED FOR NEW SUBSTATION LOCATION	PSF	PSF	PSF	06/16/06

ENG: P. FJELD  
 DWN: G. JEFFERSON  
 CHK:  
 DATE:

CLIENT/PROJECT: **FPL ENERGY  
OLIVER COUNTY SUBSTATION**

TITLE: **OVERALL SITE PLAN**

SCALE: 1"=50'  
 0 50' 100' 150'

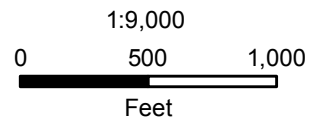
DRAWING NUMBER: **60591206**

REVISION: **D**



Approximate location of intermediate support structure

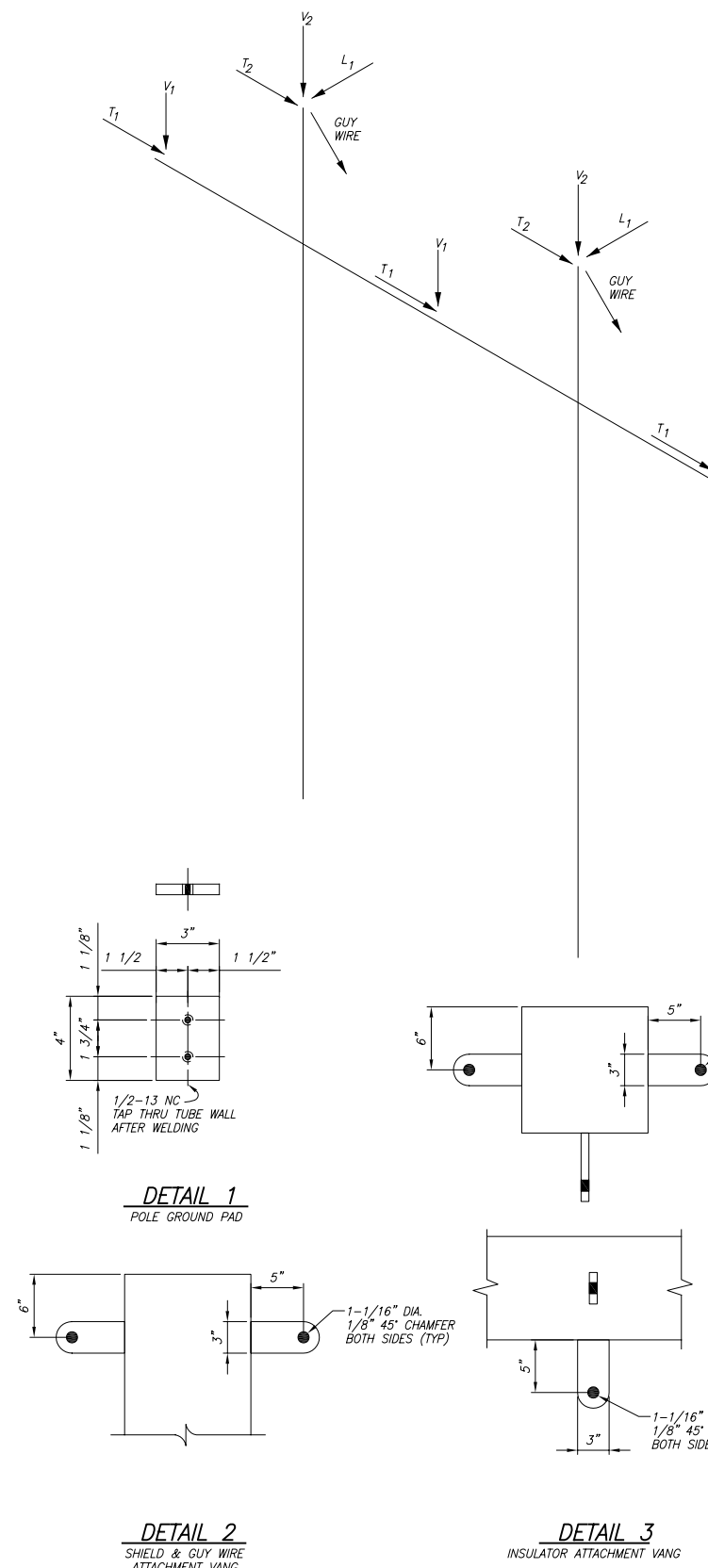
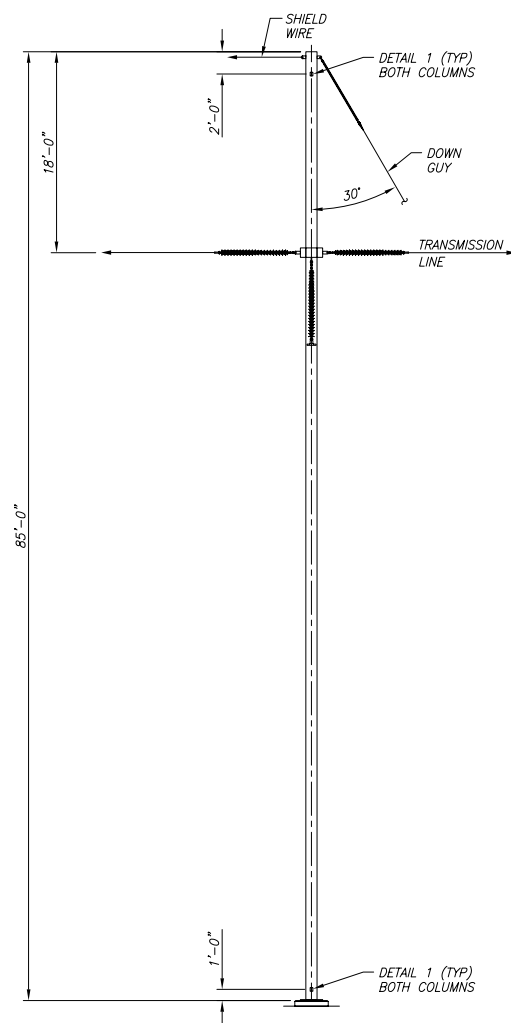
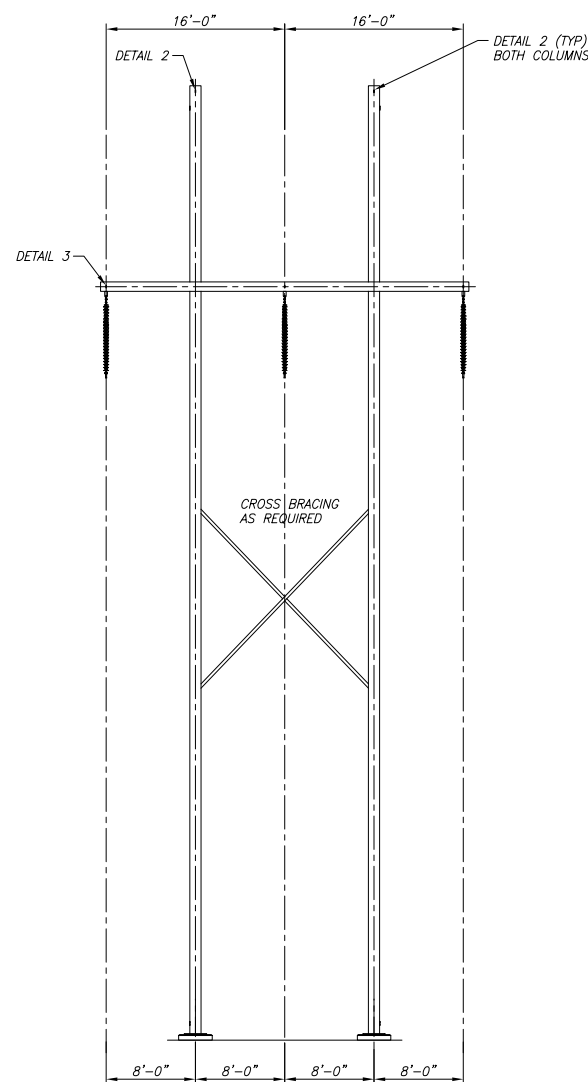
Proposed Oliver Substation



- Proposed Substation Construction Area (FPL data)
- Structure Location

**EXHIBIT 2A**  
**STRUCTURE LOCATION**  
**FPLE - ELECTRICAL TRANSMISSION LINE**  
**OLIVER COUNTY, NORTH DAKOTA**

PLOTTED: 06/23/06 09:11:15 AM FILENAME: F:\proj\05-6059\dwg\60592802.dwg USER: tcrensow



DESIGN APPLICATION	
<b>WIRE DATA</b>	
230 kV CONDUCTOR	- 795 kcmil 26/7 ACSR "DRAKE"
SHIELD WIRE	- 3/8" E.H.S.
WIND SPAN	- 270 FT.
WEIGHT SPAN	- 525 FT.
LINE ANGLE	- 15°
<b>LOADING CRITERIA</b>	
CASE 1 - NESC HEAVY:	0° F 40 MPH WIND 1/2" RADIAL ICE
CASE 2 - EXTREME WIND:	60° F 90 MPH WIND 0" RADIAL ICE
CASE 3 - EXTREME ICE:	32° F 28 MPH WIND 1" RADIAL ICE
CASE 4 - DEFLECTION:	60° F 28 MPH WIND 0" RADIAL ICE
CASE 5 - CONSTRUCTION:	0° F 0 MPH WIND 0" RADIAL ICE 20° DOWN ANGLE ON WIRE

STRUCTURE LOADS						
	V <sub>1</sub> (kips)	V <sub>2</sub> (kips)	L <sub>1</sub> (kips)	T <sub>1</sub> (kips)	T <sub>2</sub> (kips)	WIND ON STRUCTURE T (PSF)
CASE 1	1.68	0.67	1.05	0.47	0.31	15
CASE 2	0.59	0.16	0.55	0.58	0.19	28
CASE 3	1.97	1.05	1.56	0.05	0.02	2
CASE 4	0.59	0.16	0.25	0.05	0.02	2

- NOTES**
- DESIGN & FABRICATION SHALL BE IN ACCORDANCE WITH THE SPECIFICATION
  - LOADS SHOWN IN THE TABLE ARE ULTIMATE VALUES AND INCLUDE ALL APPLICABLE OVERLOAD FACTORS.
  - THE WEIGHT OF THE STRUCTURE SHALL BE CALCULATED BY THE FABRICATOR AND USED IN THE DESIGN. FOR LOAD CASE 1, THE FABRICATOR SHALL APPLY AN OVERLOAD FACTOR OF 1.5 TO THE DEADWEIGHT OF THE STRUCTURE.
  - STRUCTURE DEFLECTION UNDER LOAD CASE 4 SHALL BE LIMITED AS FOLLOWS:
    - THE HORIZONTAL DEFLECTION OF VERTICAL MEMBERS SHALL BE LIMITED TO 1/100 OF THE VERTICAL HEIGHT.
    - THE HORIZONTAL & VERTICAL DEFLECTION OF HORIZONTAL MEMBERS SHALL BE LIMITED TO 1/200 OF THE SPAN.
  - STRUCTURE SHALL BE DESIGNED FOR SEISMIC ZONE 0.
  - STRUCTURE SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
  - STRUCTURE DETAIL DRAWING IS TO BE USED TO PROCURE STEEL ONLY. THIS DRAWING IS NOT TO BE USED AS A FABRICATION DRAWING.
  - STRUCTURE DESIGNATION: TAN 1
  - 1 STRUCTURE REQUIRED.
  - INSULATORS, & HARDWARE SHOWN FOR INFORMATION ONLY, FABRICATOR WILL NOT SUPPLY.
  - GUY WIRE SHALL BE 1/2" EHS OR 3/8" EHS STEEL AS REQUIRED BY MANUFACTURERS DESIGN.
  - GUY WIRE LOADS ARE NOT INCLUDED IN THE LOADING TABLE & SHALL BE DETERMINED BY THE MANUFACTURER.

**PEAKPOWER ENGINEERING**  
 P.O. Box 340  
 Golden, Colorado 80402  
 (303) 462-1100 phone  
 (303) 462-2600 fax



REV	DESCRIPTION	ENG	DWN	CHK	DATE	ENG: M. GRYLICKI	CLIENT/PROJECT:
A	FOR BID & PROCUREMENT	MDG	LAB	MDG	06/23/06	DWN: L. BRENTON	FPL ENERGY OLIVER COUNTY SUBSTATION
						CHK: M. GRYLICKI	TITLE: TANGENT STRUCTURE
						DATE: 06/23/06	SCALE: NONE
							DRAWING NUMBER: 60592802
							REVISION: A

From: [Kenneth\\_Stein@fpl.com](mailto:Kenneth_Stein@fpl.com)

Date: 07/19/2006

To: United States Fish and Wildlife Service (USFWS)	General Office
North Dakota State Water Commission (NDSWC)	General Office
North Dakota Game and Fish Department (NDGFD)	General Office
North Dakota Historic Preservation Office (NDSHPO)	General Office
Department of Transportation	General Office
Land Department	Michael Haupt
Aeronautics Commission	General Office
Department of Health	Dave Glatt (Chief)
Parks and Recreation Department	General Office

Subject: Oliver Transmission Line Application

---

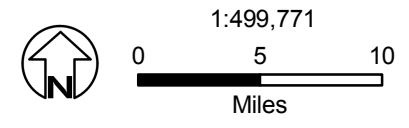
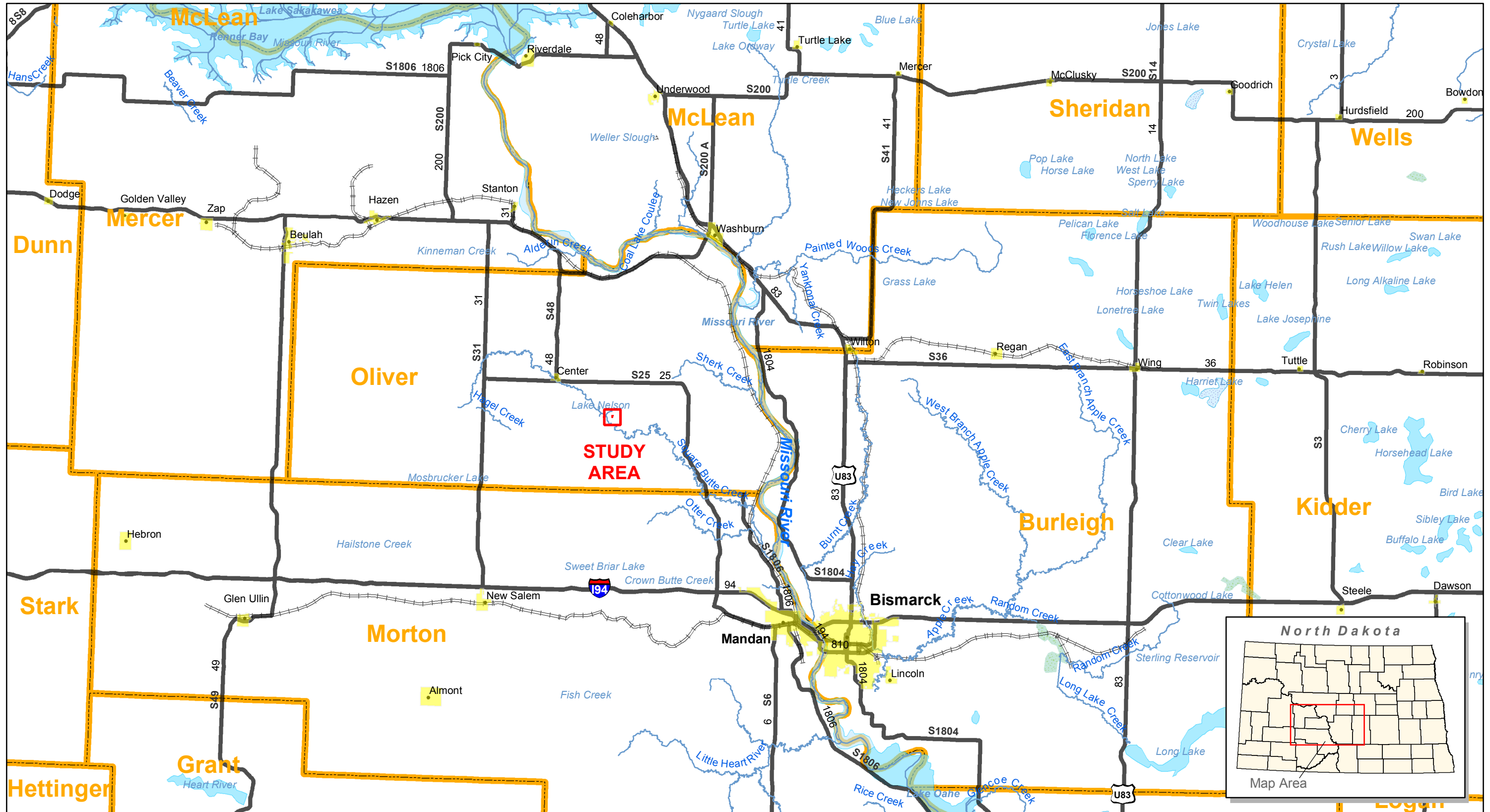
FPL Energy is submitting an application to the ND Public Service Commission (PSC) for an approximately 542 foot long 230 kV transmission line between the proposed Oliver substation and the Square Butte Cooperative's Center Substation in Oliver County. Please refer to the attached figures identifying the proposed route (Exhibit 1).

This project is encompassed by the Burleigh Transmission Line corridor that was submitted for your review in April 2005. That Burleigh transmission line project did not move forward.

Per PSC regulations, we anticipate that you will be receiving a copy of the application for review likely in late July. We welcome any comments that you have. Please contact me if you have any questions:

FPL Energy  
Attn: Kenneth Stein  
Principal Environmental Specialist  
JB/JES  
700 Universe Blvd  
Juno Beach, FL 33408  
(561) 691-2216  
[Kenneth\\_Stein@fpl.com](mailto:Kenneth_Stein@fpl.com)

Thank you



- Cities and Towns
- Study Area
- County Lines

**FIGURE 1**  
**GENERAL LOCATION MAP AND STUDY AREA**  
**FPLE - ELECTRICAL TRANSMISSION LINE**  
**OLIVER COUNTY, NORTH DAKOTA**

V:\PENNDATE.TBL V:\print\_drivers\Color\Terry\_Hoff\_01  
 11.4.17 11:00  
 6/26/2006 4:35:12 PM  
 I:\MS\_MY\_INT\105.1003\Cadd\MINKOTA POWER SEC. 33-142-83\_SE.dwg  
 6/26/2006 4:35:12 PM



**22**

TURBINE WITH NUMBER

UNDERGROUND COLLECTION LINE

OVERHEAD COLLECTION LINE

ACCESS ROAD

CONSTRUCTION EASEMENT

PROPERTY BOUNDARY

EXISTING ROAD RIGHT-OF-WAY

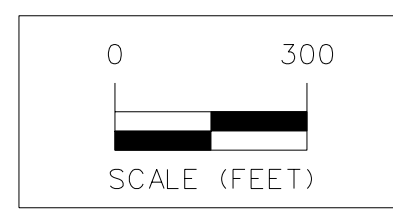
EXISTING ROAD CENTERLINE

PROPERTY OWNER APPROVAL

OWNER \_\_\_\_\_ DATE \_\_\_\_\_

OWNER \_\_\_\_\_ DATE \_\_\_\_\_

**PRELIMINARY**



ISSUE DATE: 6-26-2006

**LEGEND**

MARK	REVISION	DATE	BY
5	ADDED ACCESS ROAD TO PROPOSED SUBSTATION	6/26/06	DW
4	RELOCATED SUBSTATION, COLLECTION LINE AND EASEMENTS	6/15/06	DW
3	RELOCATED COLLECTION LINE AND ADDED EASEMENTS	6/8/06	DW
2	RELOCATED COLLECTION LINE	3/24/06	DW

Engineer: JWK Checked By: MGG Scale: 1"=100'  
 Technician: DW Date: 1/26/06 Field B/c:  
 Project No: 105.1003  
 File No:

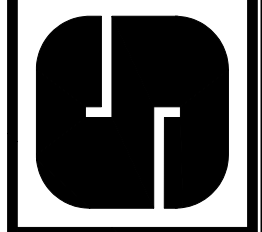
**FPL - OLIVER COUNTY WIND CTR**  
**EXHIBIT B - MINNKOTA POWER**  
**SNYDER & ASSOCIATES**

OLIVER COUNTY, NORTH DAKOTA

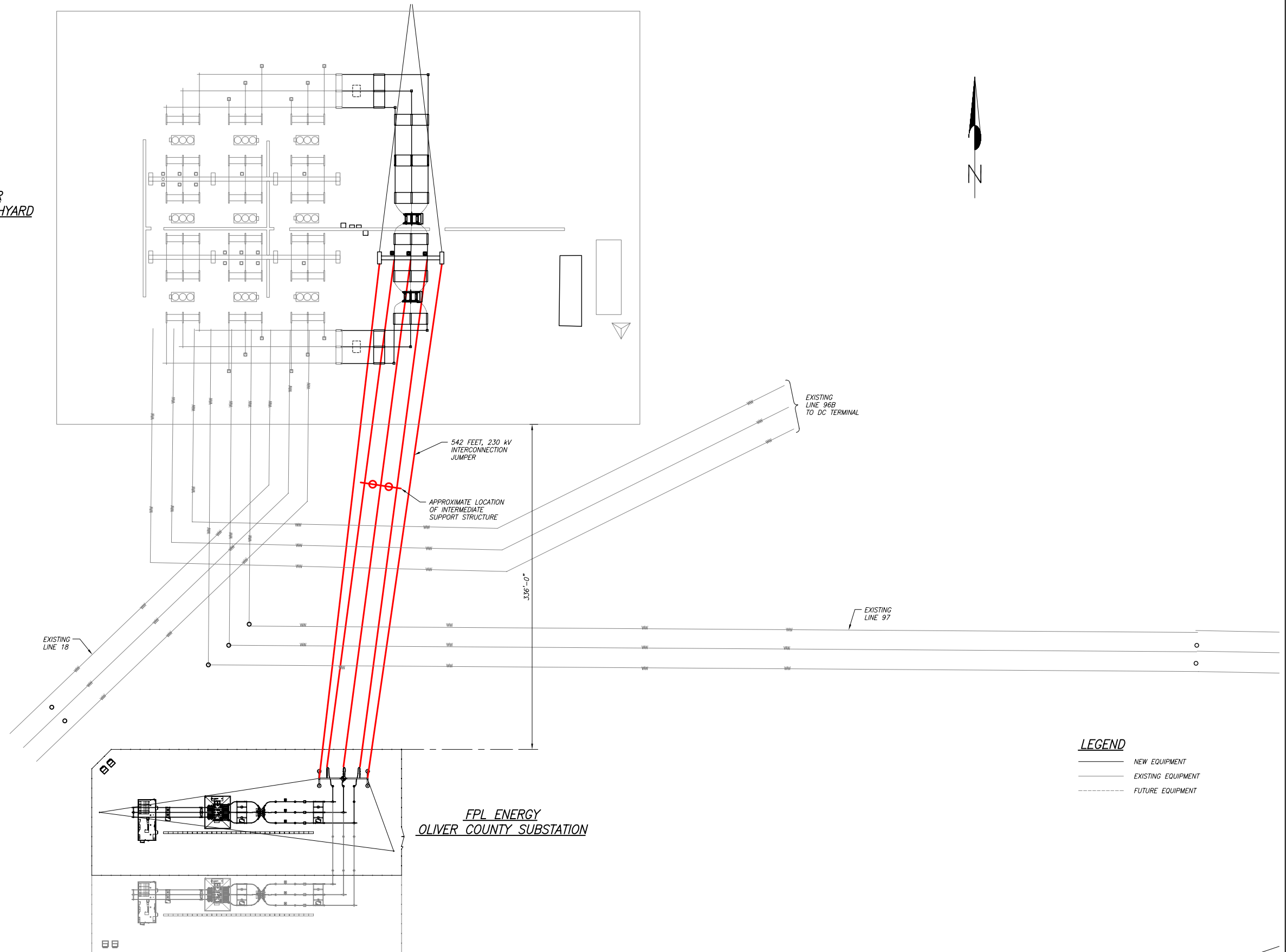
MARYVILLE, MO 63688  
 ANKENY, IA 50220  
 CEDAR RAPIDS, IA 52401

1751 MADISON AVENUE  
 COUNCIL BLUFFS, IOWA 51503

712-322-8888  
 515-864-2020  
 319-322-8894



MINNKOTA POWER  
SQUARE BUTTE SWITCHYARD



FPL ENERGY  
OLIVER COUNTY SUBSTATION

**LEGEND**

- NEW EQUIPMENT
- EXISTING EQUIPMENT
- - - FUTURE EQUIPMENT

PLOTED: 06/16/06 09:03:29 AM FILENAME: F:\apps\05-6059\dwg\60591206.dwg USER: per



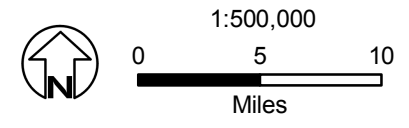
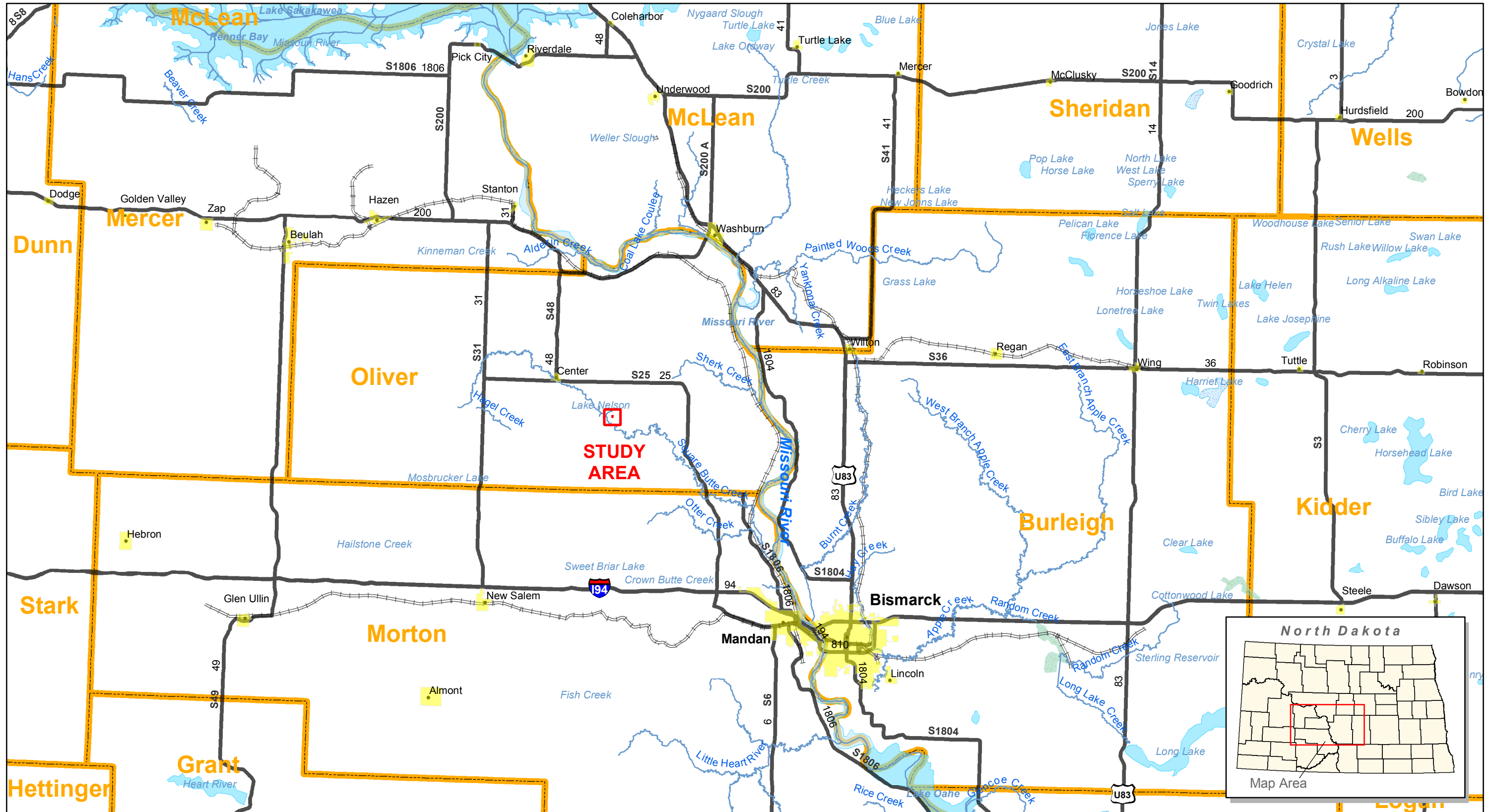
P.O. Box 340  
Golden, Colorado 80402  
(303) 462-1100 phone  
(303) 462-2600 fax



REV	DESCRIPTION	ENG	DWN	CHK	DATE
A	FOR FPL ENERGY REVIEW AND COMMENT	PSF	GLJ	PSF	05/12/06
B	REVISED PER FPL ENERGY COMMENTS	PSF	GLJ	PSF	05/16/06
C	ADDED INTERMEDIATE SUPPORT STRUCTURE	PSF	PSF	PSF	05/30/06
D	REVISED FOR NEW SUBSTATION LOCATION	PSF	PSF	PSF	06/16/06

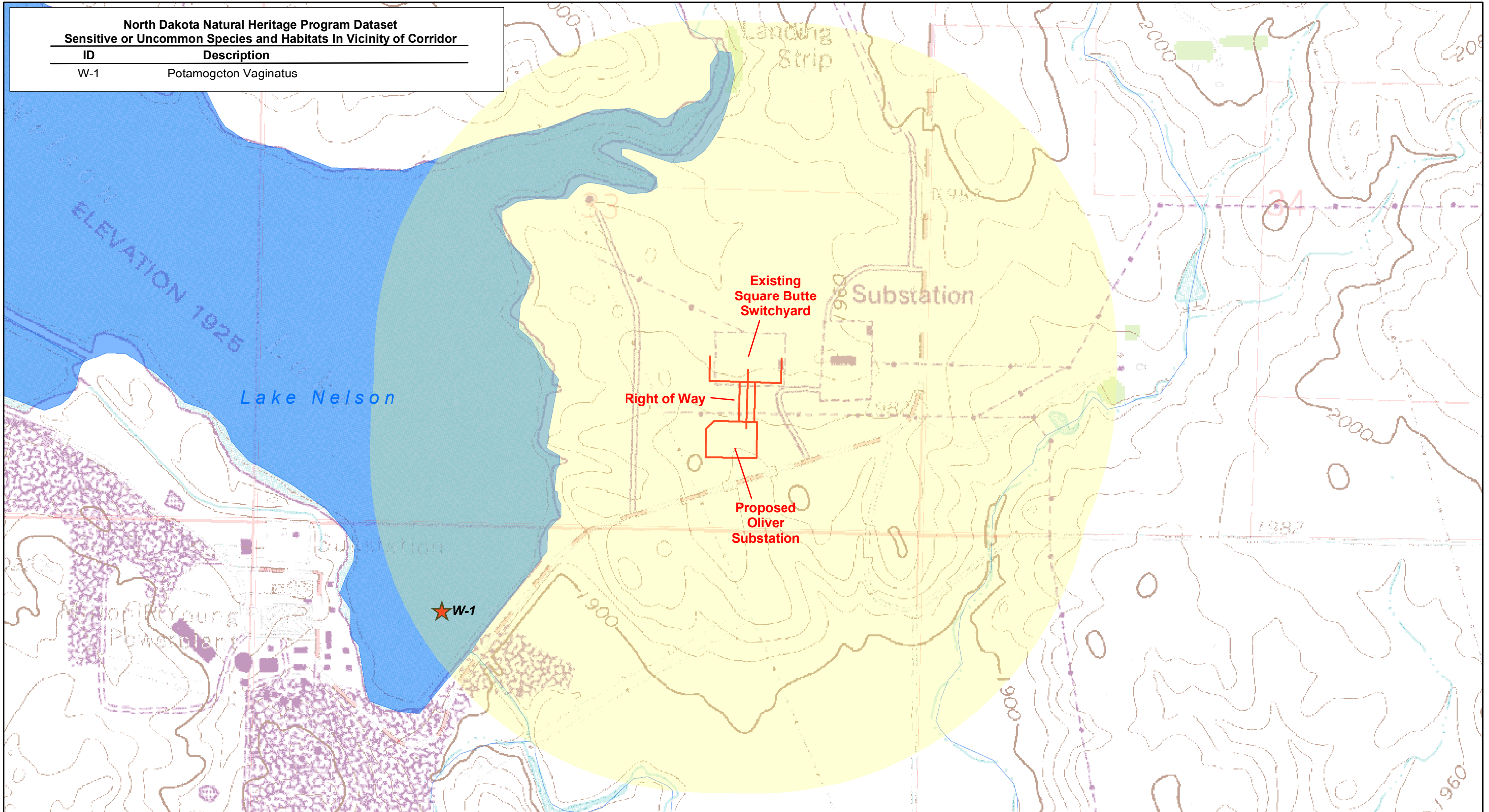
ENG: P. FJELD  
DWN: G. JEFFERSON  
CHK:  
DATE:

CLIENT/PROJECT:	FPL ENERGY OLIVER COUNTY SUBSTATION	
TITLE:	OVERALL SITE PLAN	
SCALE:	0 50' 100' 150' 1"=50'	DRAWING NUMBER: 60591206
		REVISION: D



- Cities and Towns
- Study Area
- County Lines

**FIGURE 1**  
**GENERAL LOCATION MAP AND STUDY AREA**  
**FPLE - ELECTRICAL TRANSMISSION LINE**  
**OLIVER COUNTY, NORTH DAKOTA**

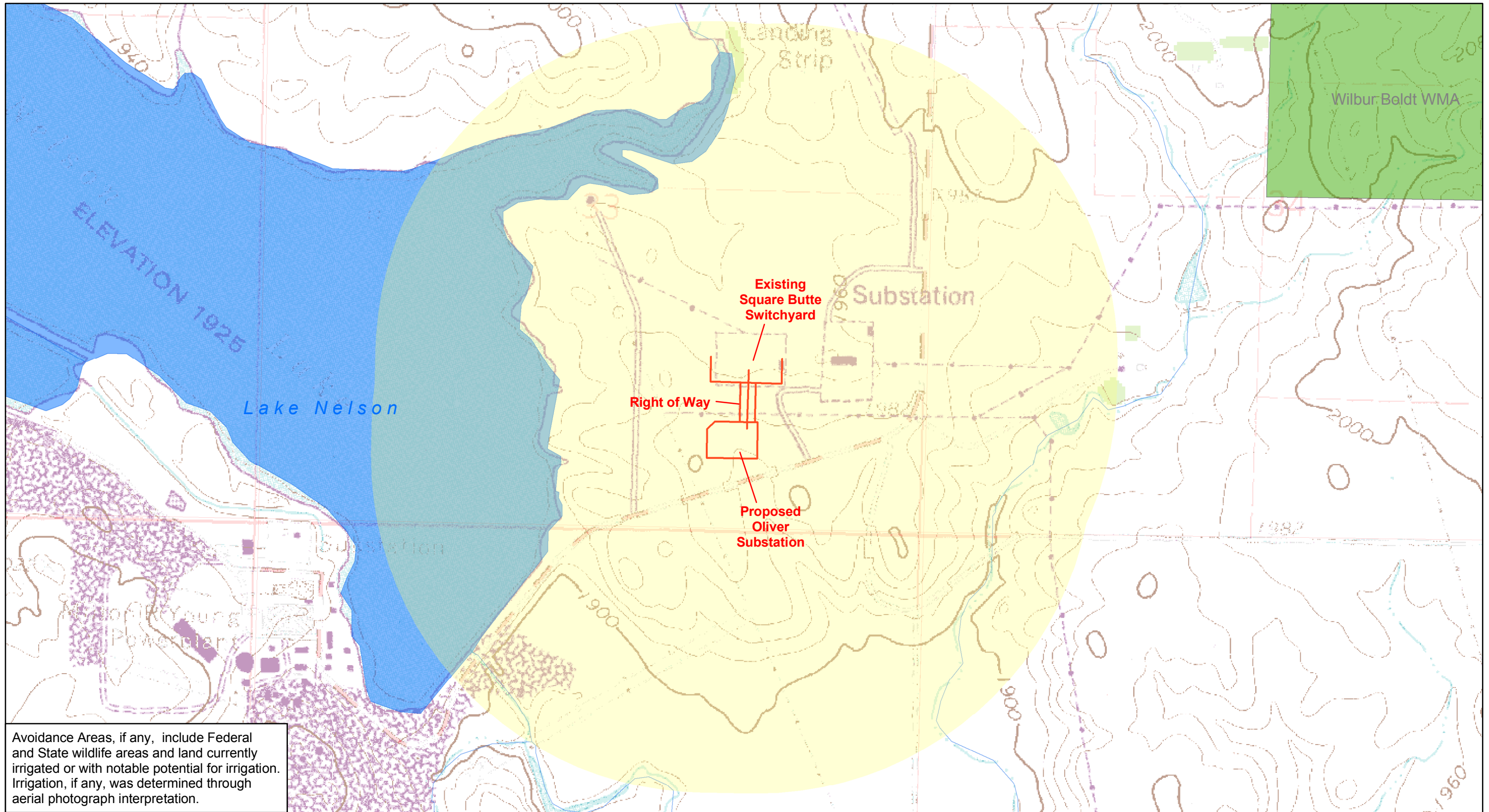


North Dakota Natural Heritage Program Dataset	
Sensitive or Uncommon Species and Habitats In Vicinity of Corridor	
ID	Description
W-1	Potamogeton Vaginatus



- Proposed Substation Construction Area (FPL data)
- Corridor (0.5 mile offset)
- ★ Sensitive Species and Habitats

**FIGURE 2**  
**EXCLUSION AREAS**  
**FPLE - ELECTRICAL TRANSMISSION LINE**  
**OLIVER COUNTY, NORTH DAKOTA**

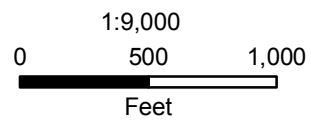
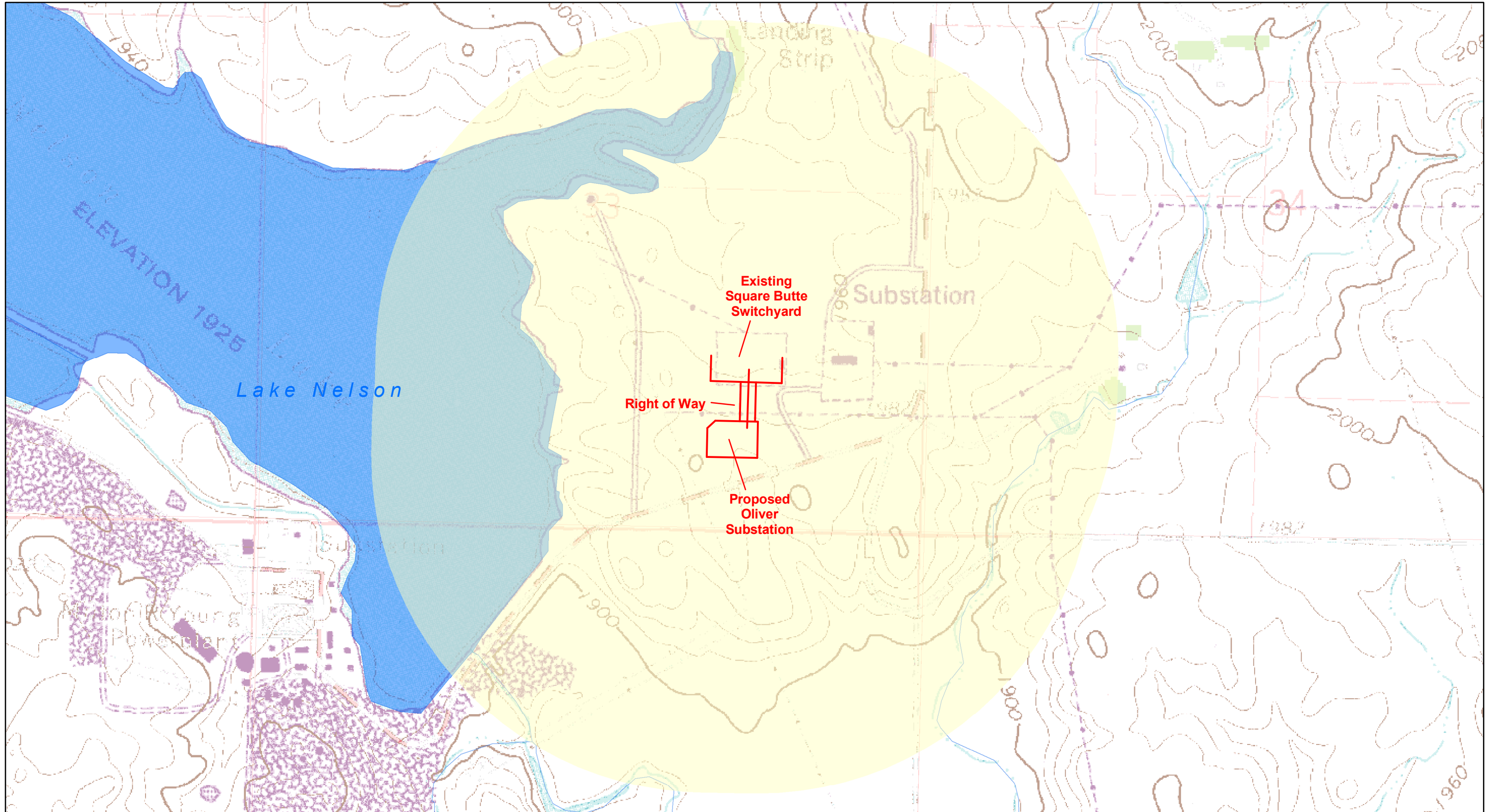


Avoidance Areas, if any, include Federal and State wildlife areas and land currently irrigated or with notable potential for irrigation. Irrigation, if any, was determined through aerial photograph interpretation.



- Proposed Substation Construction Area (FPL data)
- Corridor (0.5 mile offset)
- Wildlife Management Area (WMA)

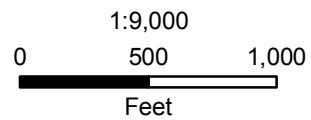
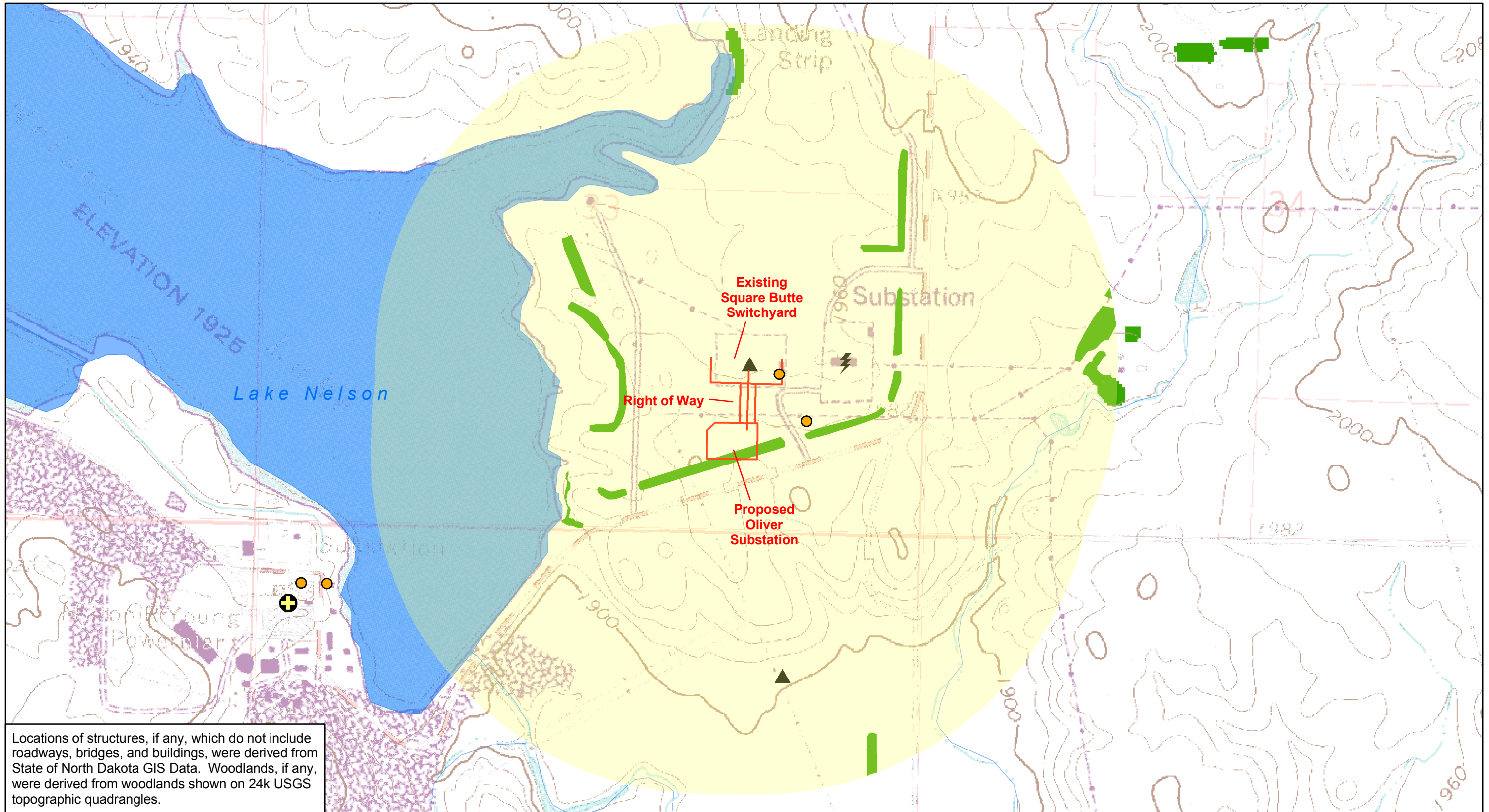
**FIGURE 3**  
**AVOIDANCE AREAS**  
**FPLE - ELECTRICAL TRANSMISSION LINE**  
**OLIVER COUNTY, NORTH DAKOTA**



- Proposed Substation Construction Area (FPL data)
- Corridor (0.5 mile offset)

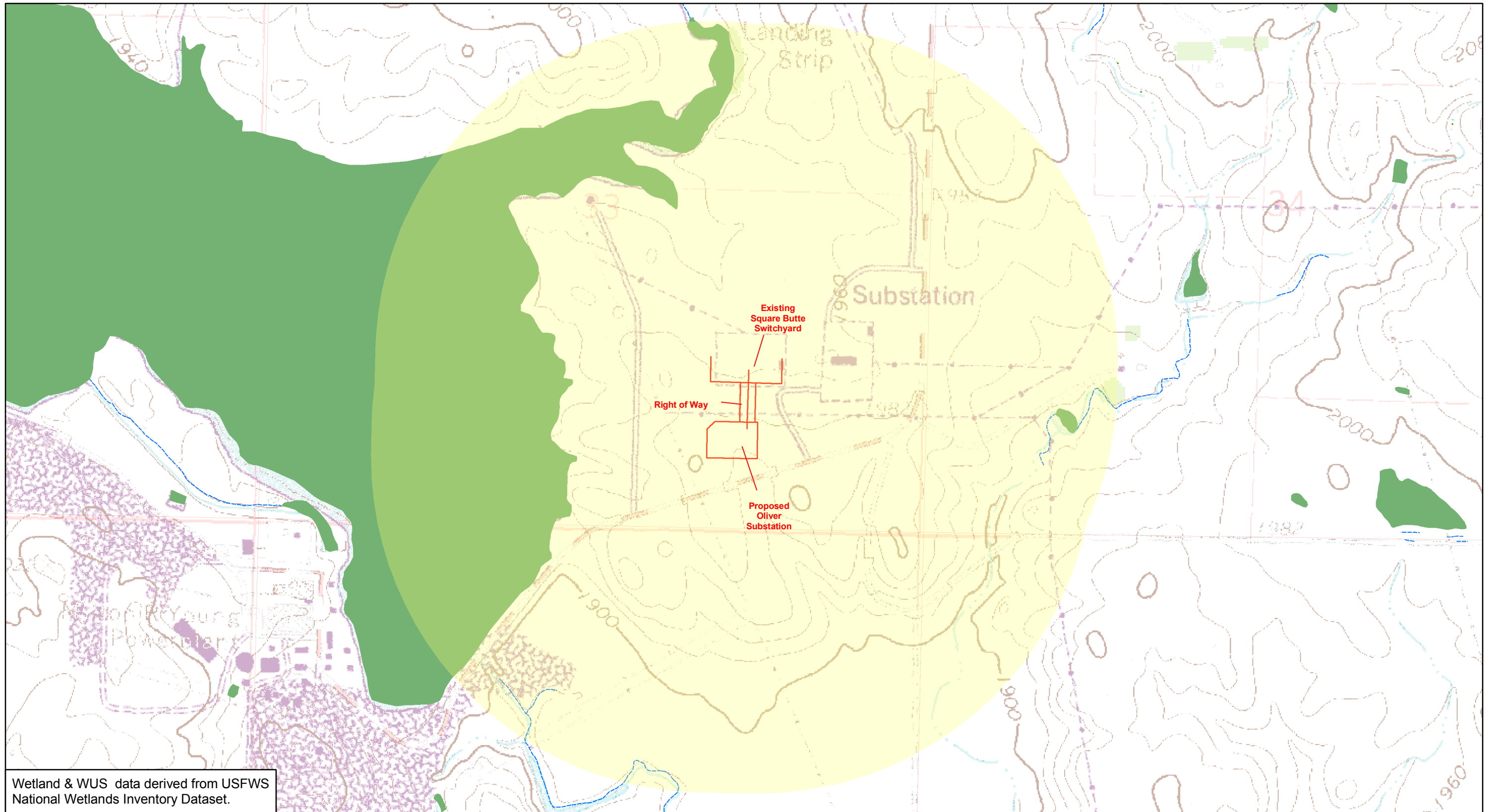
Aerial photograph interpretation was used to determine if residences or buildings were within the corridor.

**FIGURE 4**  
**AVOIDANCE AREAS - RESIDENCES AND FARMSTEADS**  
**FPLE - ELECTRICAL TRANSMISSION LINE**  
**OLIVER COUNTY, NORTH DAKOTA**



- Proposed Substation Construction Area (FPL data)
- Corridor (0.5 mile offset)
- Woodlands/Shelterbelts
- Microwave Tower
- ▲ Gravel Pit
- ⊕ Power Plant
- ⚡ Power Substation

**FIGURE 5**  
**AVOIDANCE AREAS - STRUCTURES**  
**FPLE - ELECTRICAL TRANSMISSION LINE**  
**OLIVER COUNTY, NORTH DAKOTA**



Wetland & WUS data derived from USFWS National Wetlands Inventory Dataset.


**TETRA TECH, INC.**



- Proposed Substation Construction Area (FPL data)
- Waters of the US (WUS)
- FWS NWI Wetlands
- Corridor (0.5 mile offset)

**FIGURE 6**  
**AVOIDANCE AREAS - WETLANDS**  
**FPLE - ELECTRICAL TRANSMISSION LINE**  
**OLIVER COUNTY, NORTH DAKOTA**



BUILDING FOR  
A SUSTAINABLE FUTURE  
ENVIRONMENTAL REPORT

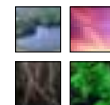




## FPL Group At A Glance (NYSE: FPL)

FPL Group is one of the nation's largest providers of electricity-related services with annual revenues of \$8.5 billion. Our companies include:

	Overview	Highlights
<b>Florida Power &amp; Light</b>	Serves 4 million customer accounts in Florida	More than 21,000 MW of generating capacity covering 27,700 square miles of service territory, approximately 550 substations and over 67,000 miles of electric lines
<b>FPL Energy</b>	A leader in producing electricity from clean and renewable fuels	More than 5,000 MW of owned operating capacity in more than a dozen states
<b>FPL FiberNet</b>	A leading provider of fiber-optic networks in Florida	More than 2,500 route miles of fiber optic capacity, which is the second-largest metropolitan area fiber network in the U.S.



# To Our Friends and Neighbors

We at FPL Group work hard to provide reliable and reasonably priced electricity and related services to customers across the United States. Doing so safely and in harmony with our environment continues to be a value all of our employees share. It is a challenge and commitment we take very seriously, and it is a key to our success.

The examples in this report will help you understand how we're minimizing our impact on the environment and collaborating with our communities on sensitive issues.

Building on our successes, we can look with great confidence to the challenges and opportunities of the future. Growth in demand for electricity will continue across the markets we serve. Much of this growth will be driven by increases in the use of technology, which is radically transforming the way we live, work and play. Consumers, community groups and others are more keenly aware of environmental issues than ever before and will continue to share their views with us and with policymakers in government.

These realities are driving us to think in new and highly creative ways about how best to serve both our customers and the communities in which we do business, while positioning the company for strong performance going forward.

We're excited about the future. Meeting the demand for cost-effective production of electric power *can* go hand-in-hand with sustaining, protecting and enhancing our beautiful and fragile environment ... and, in our view, it *must*. Future generations will be affected by how we act today, and we believe this is the most important reason to continue building a sustainable future for every part of our business.

Sincerely,

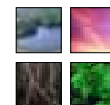
Lew Hay  
Chairman,  
CEO and President

Randy LaBauve  
Vice President,  
Environmental Services

# We're Your **Neighbors**



**Innovest ranked FPL #1 out of 28 major electric utilities surveyed for environmental performance.**



FPL Group is one of the largest energy companies in the nation, with millions of people benefiting from the electricity and related services we provide.

Our aim, however, is to operate not as a large, faceless corporation, but rather as a team of dedicated employees led by strong corporate leadership. In that sense, we're sharply focused on:

- anticipating and understanding our customers' needs;
- building long-term relationships in the neighborhoods and communities of which we're a part, and;
- being open-minded and receptive to new ideas.

An important part of all of these strategies and actions is a commitment to conduct all business activities in an environmentally responsible manner. For example:

- We work to embrace the spirit and intent of environmental laws, regulations and standards, as we continue to focus on environmental improvement.

- We incorporate environmental protection and stewardship as an integral part of the design, construction, operation and maintenance of our facilities.
- We encourage the wise use of energy to minimize adverse impacts on the environment.
- We communicate clearly and frequently on environmental issues.
- We conduct periodic self-evaluations and report on our performance.

So after having heard our intentions, some may ask: How have we done? Has FPL Group been a good neighbor?

Many of you will judge our performance based on your own personal interactions with and observations of the company ... and that's as it should be. Others of you may find it helpful to judge our performance by reviewing the numerous local, state and national environmental awards FPL Group continues to receive.

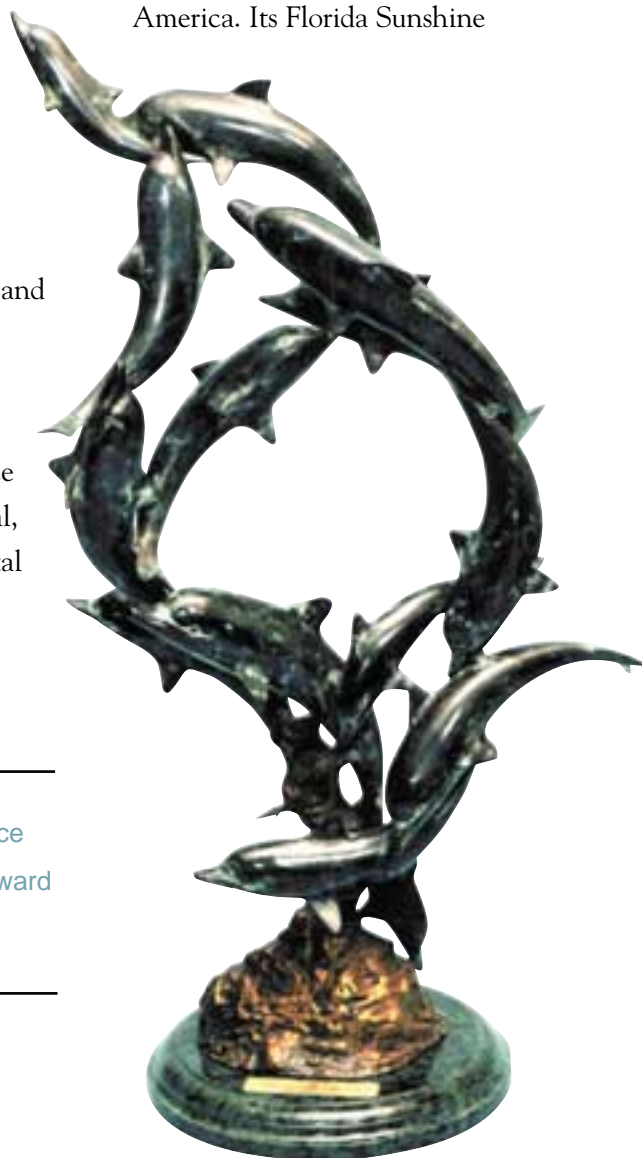
For example:

- In 2002 FPL ranked first out of 28 major electric utilities surveyed in an environmental assessment conducted by Innovest, an independent advisory group. Innovest believes a company's environmental performance bodes well for its future stock price performance.
- We were awarded the 2001 Waste Reduction and Pollution Prevention Award from the Solid Waste Association of North America. Its Florida Sunshine

---

The Florida Ocean Alliance, whose mission is to protect and enhance ocean resources, presented FPL with its Environmental Achievement Award for our innovative energy management programs in 2001.

---



Chapter recognized us for our efforts to conserve resources and protect the environment.

- FPL received a 2001 Program Champion Award from the Environmental Protection Agency’s WasteWise program. This is the third time we have received this honor. WasteWise is a voluntary program and involves business, government agencies and others who have pledged to conserve natural resources

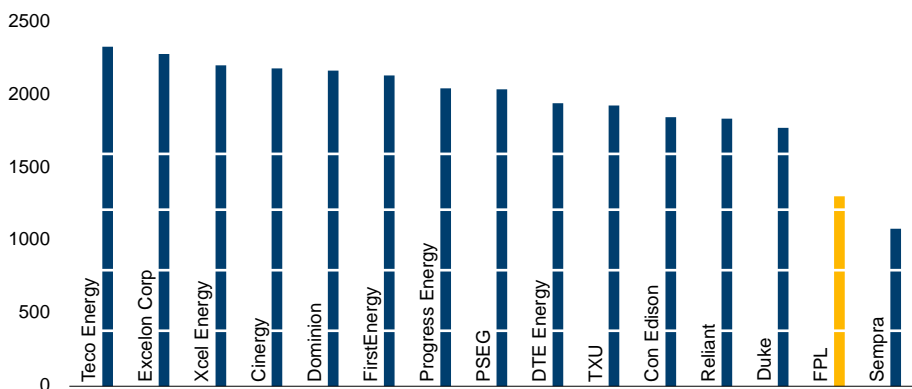
through solid waste reduction.

- Our innovative wildlife, land and water management efforts at FPL Energy’s Harris hydroelectric facility in Maine were recognized by the National Hydropower Association in its 2002 Outstanding Stewardship of America’s Rivers report.
- The Florida Department of Environmental Protection named FPL a “Partner for Ecosystem Protection” for our emission-

reducing “repowering” projects at our Fort Myers and Sanford locations. Repowering involves converting older, oil-fired plants to new clean-burning and more efficient natural gas-fired technology.

- Guidelines and information we developed for our Web site, [www.fpl.com](http://www.fpl.com), for protection of the Florida manatee generated a StudyWeb Academic Excellence Award for FPL. StudyWeb is a favorite Web site for teachers and students who use the site’s educational resources for classroom projects and homework assignments.

Although we’ve earned important recognition for our environmental programs, we continue to seek ways to do even better.



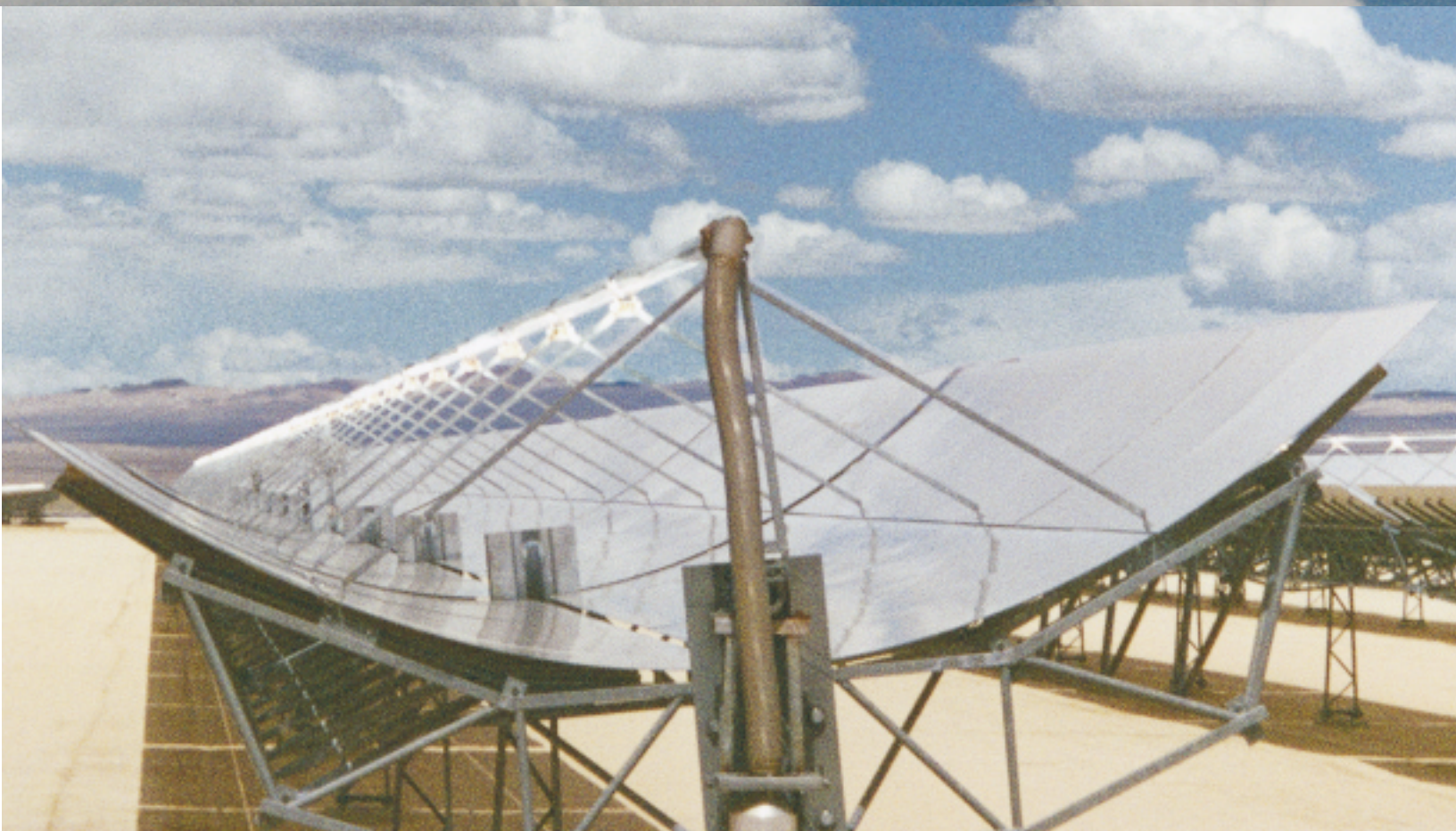
**Fossil Generation Portfolio CO2 Emissions (lbs/mwh)**

Source: Resource Data Institute. Based on a 3-year average of 1999-2001. Includes only fossil generation. Excludes plants with incomplete data, usually peakers and smaller units.

FPL Group is a charter partner in the Environmental Protection Agency’s voluntary Climate Leaders program aimed at reducing greenhouse gas emissions. The program will begin by inventorying six greenhouse gases produced by fossil fuel-burning facilities and other greenhouse gas contributors.

Over the past decade, we voluntarily have made significant reductions in plant emissions, and today we have some of the lowest emission rates of sulfur dioxide, nitrogen oxide and carbon dioxide in the industry. Partnering with the EPA in Climate Leaders is an important next step for FPL Group to take on our journey to assess and reduce emissions at our power plants in Florida and throughout the country.

FPL Energy owns and operates the largest solar field in the world at its Mojave Desert facility.



## We're Taking Care of **Business**

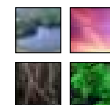
**F**rom design and construction to operations, maintenance, and all other aspects of our business, no major decision is made at FPL Group without carefully considering its environmental impact.

For example, it's our policy that:

- the Board of Directors reviews company environmental strategies and performance;
- operating divisions' business plans include environmental performance as a key component;
- we regularly conduct environmental audits of our facilities and operations;
- environmental factors make up a big part of company "due



FPL Energy is the largest developer and operator of wind energy in the United States.



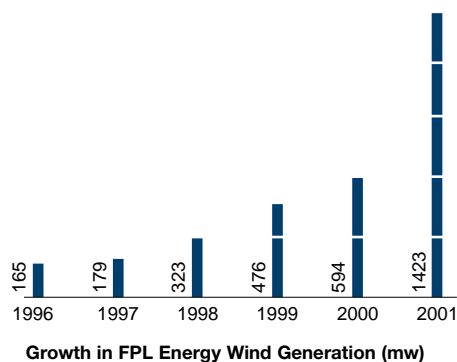
diligence” research prior to making any decision to purchase a development project, power plant or business;

- employees are trained in many aspects of environmental awareness, management and procedures, and;
- employee performance evaluations consider whether environmental targets have been completed successfully.

The environmental activities of FPL Group are guided by environmental professionals who represent more than 45 areas of expertise and have an average of 15 years of experience. Many worked previously as regulators, power plant personnel or environmental consultants.

Here’s a glimpse at how the company’s high expectations are being achieved on a daily basis:

- FPL maintains a diverse fuel mix of nuclear, oil, natural gas and coal to ensure reliable service to our customers.



- FPL Energy is the nation’s leading developer, builder and owner of wind generation facilities, with more than 23 facilities across the U.S.
- We own and operate the largest wind farm in the west, the Stateline Energy Center on the Oregon-Washington border.
- We own the largest solar fields in the world — the Solar Electric Generating Stations (SEGS) — in California’s Mojave desert.
- We operate 29 hydroelectric facilities in Maine and New Hampshire.

While we continue to add new power plants across the nation, we

also utilize energy conservation programs in Florida to help individual customers reduce their demand for electricity, saving energy and money at the same time. These programs include:

- a Web-based home energy survey available at [www.fpl.com](http://www.fpl.com) to help customers understand how they are using power and find ways to maximize energy efficiency in their homes;
- encouraging customers — often via rebates — to adopt high efficiency heating, ventilation, air conditioning, lighting, window treatments and roof and ceiling insulation, and;
- our voluntary “On-Call” program where customers elect to have FPL briefly interrupt some of their electric appliances for short periods during times of high electricity demand, in exchange for credits on their bill.

---

We are actively supporting research and development programs that promote the development of alternative, cost-effective renewable energy sources. We’re also continuing to explore innovative new retail programs using environmentally-friendly sources such as solar, biomass, landfill gases, wind and hydroelectric power.

---



# We're Enhancing Our Commitment

**F**PL Group is constantly seeking ways to improve our performance to go beyond what is expected. This commitment permeates our business, notably our approach to environmental issues. We frequently develop or support programs that are more far-reaching than what is legally required.

We strive for more efficient operations and improved performance with less impact on the environment. For example:

- In Maine, we assist in preserving archeological sites on our

property, in carbon-dating recovered materials, and we monitor our sites annually to ensure they are not disrupted by erosion.

- We were awarded Edison Electric Institute's National Land Management Award for our stewardship of 25,000 acres surrounding our Turkey Point plant. This site contains fresh and estuarine wetlands, subtropical hardwood forests and is home to 26 state- and 17 federally-protected animal species,

including the American crocodile and the wood stork.

- Our 20 years of monitoring at our Turkey Point plant has shown dramatic increases in the number of endangered American crocodile hatchlings: from 15 to more than 300 annually.
- We sponsor charity fishing tournaments at several of our plants, as well as beach cleanups, to which families and friends are invited.

Water is another valued natural resource. With our hydroelectric

Our hydroelectric facilities provide environmental and recreational benefits.



facilities in Maine and New Hampshire, and water as a key ingredient in electricity generation at other plants as well, we have a keen interest in managing this resource wisely.

- In Maine, we manage river flows to meet the habitat needs of fish species and to provide opportunities for whitewater recreation, boaters and anglers at our dams. We also manage water levels for fish spawning, loon nesting and public water access.
- In an ongoing water use reduction project, we installed equipment and procedures at six power plants to collect, treat and re-use water for such purposes as steam

generation and plant operations. The use of this water has reduced our need for groundwater and municipal water supplies.

- Our Bellingham plant in Massachusetts and Doswell plant 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.

Our commitment to reduce emissions has yielded important dividends for air quality as well.

- Our hydro, wind, nuclear and solar plants across the country generate no greenhouse gases whatsoever.

- Over the past 10 years, FPL has demonstrated a trend of reductions in the rates of sulfur dioxide and nitrogen dioxides by 29% and 38% respectively.
- In Florida, our rates of emission of sulfur dioxide, carbon dioxide and nitrogen oxides are among the lowest of the major investor-owned utilities in the state and in the nation.

Beyond developing new ways to maintain and enhance our resources, we look for opportunities to properly dispose of waste and to recycle and re-use materials required for company operations.

- A voluntary clean-up of non-hazardous industrial waste



Our Turkey Point plant is home to the endangered American crocodile.

---

The cooling canals at our Turkey Point plant are one of three nesting areas in the country for the endangered North American saltwater crocodile. The remote and secure canals afford a tranquil and protected environment for this reclusive species.

---

products has removed more than 350,000 tons of waste from 13 facilities in Florida. This clean-up has helped us identify many innovative recycling techniques such as transforming the wastes into useful products.

- For more than 20 years, FPL has

operated an in-house recycling center and presently handles more than 100 different types of recyclable materials. The center's mission is to cost-effectively recover and market the company's surplus assets, maximizing value while

protecting the environment.

- Each year, we recycle an average of 14,000 tons of reclaimed metals; 6,000 tons of scrap wood; 1,300 tons of porcelain; and 1,000 tons of paper and cardboard.
- Our recycling center benefits

from a unique partnership with Palm Beach Habilitation Center, which prepares adults with disabilities to learn skills needed for full-time employment.

- More than \$1.7 million worth of poleline hardware was

refurbished and restocked in 2001, a 21% increase over 2000.

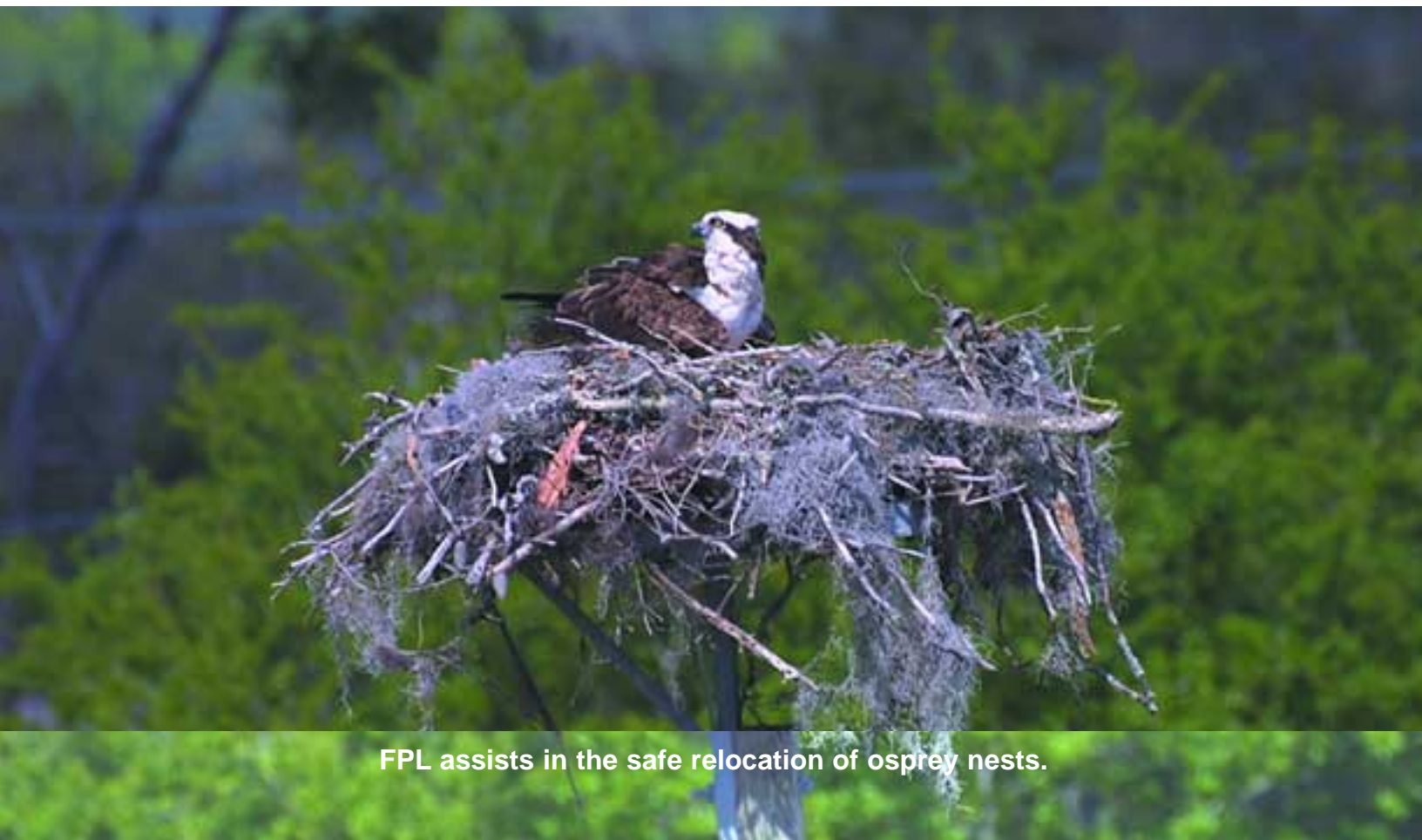
- Children, businesses and the environment all benefit from the work of the Resource Depot, a clearinghouse through which businesses donate surplus goods.

These materials are then given to day care centers, teachers and parents for use in learning and other creative activities with children. FPL is a charter sponsor of this charitable organization.

---

FPL Group is continuously looking for ways to improve our operations to minimize impacts on birds and other wildlife near our facilities. To support this commitment we have initiated a comprehensive wildlife and natural resources training program for our field crews.

---



FPL assists in the safe relocation of osprey nests.

# We're Building Better Communities Through Stronger Relationships

Our neighbors recognize that electric power is essential to today's lifestyles. Together, we're making our communities great places to live, work and play.

And working with our neighbors on things that matter most to them can reap many rewards for the environment.

Through tours, special displays and mailings, and our Web site, [www.fpl.com](http://www.fpl.com), we offer a wide array of information to schools, community groups and individuals about how we do business and the environmental issues we all care about. For example:

- We sponsor popular evening walks near our St. Lucie plant on Hutchinson Island in Florida where people can view loggerhead sea turtles nesting. We also conduct nesting surveys for the State of Florida, maintain one of the largest sea turtle databases in the world and track the movements of these turtles for wildlife agencies.
- Our award-winning Web site features information on tree planting in Florida, as well as educational materials for students and teachers on endangered and protected species.

- In Maine, we've built special fishways and pumps to help a variety of native fish migrate. The tours we offer to school groups and the public include videos, classroom presentations, visits to fishways and fish viewing areas.

Before we undertake major electric system expansion or upgrade projects, we reach out to solicit the views of community members on a variety of issues, including how to minimize our impacts on the environment.

- As part of our two major energy-boosting "repowering" projects in Florida, we sought the views of customers, environmental groups, state and local legislators and the arts community. We have incorporated their ideas in developing plans for our new operations.
- We also work closely with the community when planning and siting our transmission and distribution systems — our poles and wires. By using existing corridors we've avoided disrupting private property and having to disturb natural resources.

## FPL Fort Myers Plant Emission Improvements From Repowering (lbs/mwh)

Emission	Historical	Repowered
Nitrogen Oxide (NO <sub>x</sub> )	7.23	0.26
Sulfur Dioxide (SO <sub>2</sub> )	20.94	0.02
Carbon Dioxide (CO <sub>2</sub> )	1722.00	774.00
Carbon Monoxide (CO)	1.53	0.18
Particulate Matter (PM)	0.62	0.04
Volatile Organic Compounds (VOC)	0.05	0.01

FPL Group seeks input from our communities when planning new operations.



---

FPL Group has instituted community outreach programs that have become an integral part of our planning for all major projects. This outreach, which uses such tools as phone surveys, meetings, open houses and presentations to community and environmental groups, is a proactive measure that ensures the community has an opportunity to voice their questions and concerns about a project. This approach enables us to respond to community concerns in a timely and meaningful way and has resulted in stronger relationships in many communities involved in our repowering projects, new development projects, nuclear relicensing, substation and transmission line siting projects, and hydroelectric licensing.

---



---

The lush flora and fauna of Manatee Island, located in the Caloosahatchee River adjacent to the Fort Myers plant, will continue to be protected with FPL's donation of the 18-acre refuge to the U.S. Fish and Wildlife Service in January 2001. The island serves as a unique haven for birds and other species of wildlife. With FPL's donation, Manatee Island becomes the first addition to the Caloosahatchee National Wildlife Refuge, established in 1920.

---

Many of the environmental projects we undertake in our neighborhoods are driven by a strong network of employee volunteers. Each year, Earth Day and Arbor Day, for example, spur a variety of activities. Recently:

- FPL Energy staff members volunteered to host fourth and fifth graders from CK Burns Elementary School in Saco, Maine, at a salmon release at the Saco River. Students learned about salmon habitat and migration patterns.
- Habitat for Humanity engaged several of FPL's employees in its effort to build a home completely by women and for women. The home also conformed to FPL's BuildSmart™ guidelines for energy efficiency.
- In Florida, FPL volunteers joined forces with the Marine Resources Council, Boy Scouts and Explorers and the Merritt Island High School Earth Club to plant 2,000 mangroves along the east side of our Cape Canaveral plant.
- At Miami's Metro Zoo, nearly 100 FPL volunteers highlighted our energy conservation efforts



FPL donated Manatee Island to the National Wildlife Refuge.

and our ecological activities protecting endangered species. An FPL electric vehicle and our mobile emissions testing laboratory were also on display.

- In Sarasota, Florida, vegetation management staffers helped dedicate Millennium Trail, a grove of 145 native trees at the John and Mabel Ringling Sarasota Museum of Art.
- We make the best use of the special talents of our large and growing retiree population in various activities. For example, FPL retirees host the public at our manatee viewing area in Riviera Beach, Florida.
- We were the major sponsor of the Air and Waste Management

Association's international meeting in 2001, where we trained K-12 science teachers on the use of environmental resource guides and offered educational programs for children, students and adults in attendance.

As part of the process of permitting or relicensing some of our power plants, we've donated land to governments and implemented a number of innovative programs to aid local conservation and recreation activities.

- Our Everglades Mitigation Bank is returning more than 13,000 acres of wetlands to its natural condition. Located

between two national parks, the site is home to more than 38 species of wildlife, of which 12 are endangered and nine are threatened.

- At our Harris hydroelectric facility on Maine's Upper Kennebec River, we're putting 1,300 acres of land into conservation easements.

Recreational opportunities and "ecotourism" are valued by many of our neighbors. Recognizing that, we work in partnership with community groups to preserve and enhance these opportunities as we grow our business.

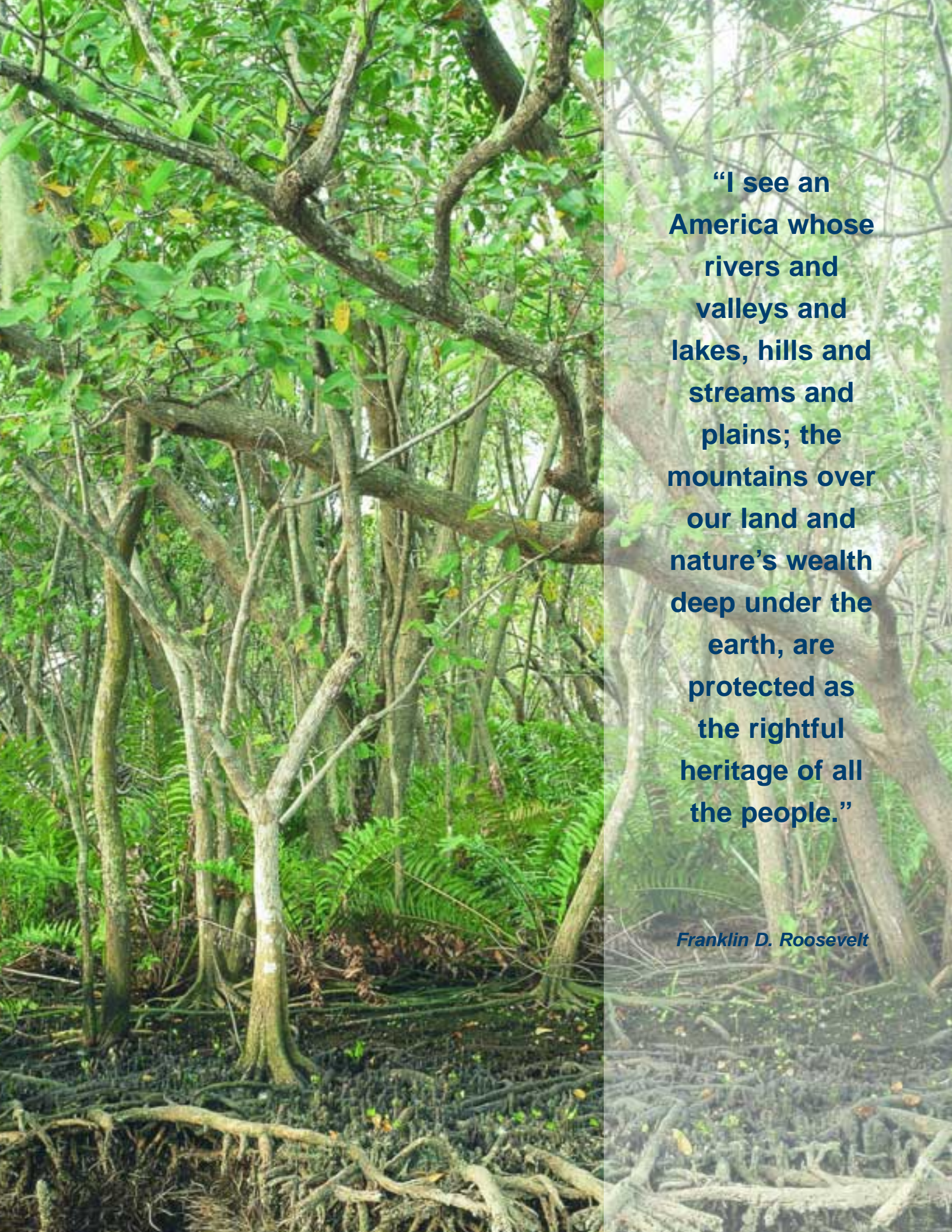
- In Maine, we ensure public access to more than 300 recreation sites along our

reservoirs and waterways. We support whitewater recreation, a multi-million dollar industry in the state. We also provide parking, trails and proper water flows to optimize fishing access and fish habitat on area rivers.

- The Barley Barber Swamp is a 400-acre natural cypress swamp voluntarily preserved by FPL at our Martin power plant in Florida. Trained guides lead visitors along a one-mile boardwalk that winds through this pristine ecosystem.

FPL Group would like to acknowledge Jim Valentine for many of the environmental photos in this report.



A photograph of a dense forest with many trees and exposed roots. The trees have thick, gnarled trunks and are covered in green leaves. The ground is covered in a thick layer of roots and fallen leaves. The background is a soft, out-of-focus green, suggesting a deep forest.

**“I see an  
America whose  
rivers and  
valleys and  
lakes, hills and  
streams and  
plains; the  
mountains over  
our land and  
nature’s wealth  
deep under the  
earth, are  
protected as  
the rightful  
heritage of all  
the people.”**

*Franklin D. Roosevelt*



FPL Group, Inc.  
700 Universe Boulevard  
Juno Beach, Florida 33408

This environmental report was printed on an alkaline pH paper made from 100% post-consumer waste and uses inks derived from renewable agricultural materials.



Printed on recycled paper