

Tree and Shrub Replacement Plan

Oliver II Wind Project Transmission Line

Prepared for:

NEXTERA ENERGY RESOURCES
Oliver County Wind, LLC
ND PSC Case Number: PU-06-312 (Transmission Line)

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Table of Contents

1.0 INTRODUCTION & REGULATORY BACKGROUND..... 1-1

2.0 INVENTORY OF TREES AND SHRUBS IN PROJECT AREA 2-1

3.0 LANDOWNER CONSULTATION..... 3-1

4.0 PLANTING SCHEDULES..... 4-1

5.0 FOLLOW-UP DOCUMENTATION AND MONITORING 5-1

TABLES

1 Location and Number of Trees Removed within Project Area..... 2-1

2 Landowner Preferences for Tree Replacement..... 3-1

FIGURES

1 Project Location Map

2 Site Plan

APPENDICES

A North Dakota Public Service Commission Order

B Planting Plan

1.0 Introduction & Regulatory Background

In 2007, Oliver County Wind, LLC (Oliver Wind), a subsidiary of NextEra Energy Resources, LLC, constructed a 542-foot long, 230 kV electric transmission line and associated substation facility in Section 33 of Township 142N, Range 83W in Oliver County, North Dakota. The transmission line was built to connect the Oliver II Wind Energy Center to the existing Square Butte Electric Cooperative Center Substation, owned by Minnkota Power Cooperative, Inc. (Minnkota). Its construction required the removal of trees and shrubs within Project rights-of-way. Under current regulations, a transmission line of this length would not fall under the jurisdiction of the North Dakota Public Service Commission (PSC). However, at the time of permitting and construction of the Project, there were no length thresholds for jurisdiction of transmission lines, so this Project is considered to be under the jurisdiction of the PSC.

Projects under the jurisdiction of the PSC that require the removal of trees or shrubs in the course of Project construction must replace them, following PSC replacement requirements (**Appendix A**, *ND Public Service Commission Order*, pages 3-5, Case No. PU-06-312). The PSC requires approval of a Tree and Shrub Mitigation Plan/Replacement Plan before trees or shrubs are planted. Paragraph 15 of the PSC Order (PU-06-312) outlines the specific requirements for tree and shrub replacement, as follows:

15) Trees and other wooded vegetation must be replaced with saplings that are two or more years old at a rate of two for every one removed along the route. The landowner shall be given the option of having replacement trees/shrubs planted off the right-of-way on the landowner's property or waiving the requirement in writing and allowing replacement plantings of trees/shrubs elsewhere. Oliver Wind shall inspect tree replacements once a year for three years and send a report on or shortly before November 1 of [each year] to the Commission documenting work completion and condition of woodlands planting. The Commission may order additional plantings if survival rates are less than 75% of the required ratio of two for one.

Oliver Wind retained Tetra Tech EC, Inc. (Tetra Tech) and Wenck Associates, Inc. (Wenck) to assist in the preparation of a tree and shrub mitigation plan for the Project and to assist in contacting landowners to determine their tree replacement preferences.

2.0 Inventory of Trees and Shrubs in Project Area

Oliver Wind documented the number and location of trees and shrubs removed during construction of the Project (**Table 1**). Oliver Wind surveyed windbreaks, shelterbelts, other planted areas, and native growth areas that were cleared during construction. Counts were completed by direct stem count.

Trees were removed from only one location, a shelterbelt running along the southeast side of the existing Square Butte Electric Cooperative Center Substation, owned by Minnkota (**Figure 2**). A total of 103 trees and shrubs were removed from within Project right-of-ways (**Table 1**). The total number of trees/shrubs to be replaced based on this inventory is 206, assuming a 2:1 replacement ratio.

Table 1. Location and Number of Trees Removed within Project Area

Location			Location Description	Number of Trees Removed	Type of Tree	Landowner
Township	Range	Section				
142N	83W	33	Substation Pad	103	unknown	Minnkota Power Cooperative, Inc.
TOTAL				103		

3.0 Landowner Consultation

Wenck contacted Paul Mahlen, Property and Right-of-Way Manager for Minnkota, to determine preferences for tree replacement. Mr. Mahlen was asked whether Minnkota preferred trees to be replaced on their property off the Project right-of-way, or whether they preferred not to have trees replaced on their property and instead have them planted at an alternative location. Since Minnkota requested replacement of the trees on their property, Wenck coordinated with Mr. Mahlen which tree/shrub species were preferred for replacement and the amount of each type.

A planting plan was coordinated with the Oliver County Soil Conservation District, which designed a windbreak planting to the west of the Center Substation (**Table 2; Appendix B**). The appropriateness of tree and shrub requests was reviewed by Wenck, Tetra Tech, and the Oliver County Soil Conservation District. Requested species were suitable to North Dakota growing conditions and are commonly recommended for tree plantings by the North Dakota Forest Service (<http://www.ndsu.edu/ndfs/>) and the Oliver County Soil Conservation District.

Table 2. Landowner Preferences for Tree Replacement

Landowner	Number of Trees Removed (Actual Count)	Number of Replacement Trees (Estimated)	Tree/Shrub Species Requested	Comments
Minnkota Power Cooperative, Inc.	103	46	Black Hills Blue Spruce	Windbreak planting to west of existing substation.
		35	Siberian Crabapple	
		35	Midwest Crabapple	
		46	Wild Plum	
		46	Apricot	
TOTAL	103	208		

4.0 Planting Schedules

Spring 2011

The planting for Minnkota will be installed in the spring or early summer of 2011 (**Appendix B**). The planting will be in Section 33, Township 142N, Range 83W. Minnkota will be responsible for making arrangements to cultivate the area and prepare the soil for planting.

The Oliver County Soil Conservation District will plant replacement trees and install weed barrier fabric. Trees will be 2-year-old saplings and shrubs will be stem cuttings.

There was some discussion about planting older tree and shrub stock to compensate for the delayed installation of this planting. In June 2008, there was a replacement planting for this Project of 306 Caragana shrubs which were installed on Minnkota's property (at approximately a 3:1 ratio replacement). This entire planting failed and thus planting older trees would have compensated for a year's growth. However, Oliver County Soil Conservation District personnel recommended the standard age stock because they have better chances of survival. Older transplants have more difficulty adjusting to conditions as a transplant and are more prone to dying.

5.0 Follow-up Documentation and Monitoring

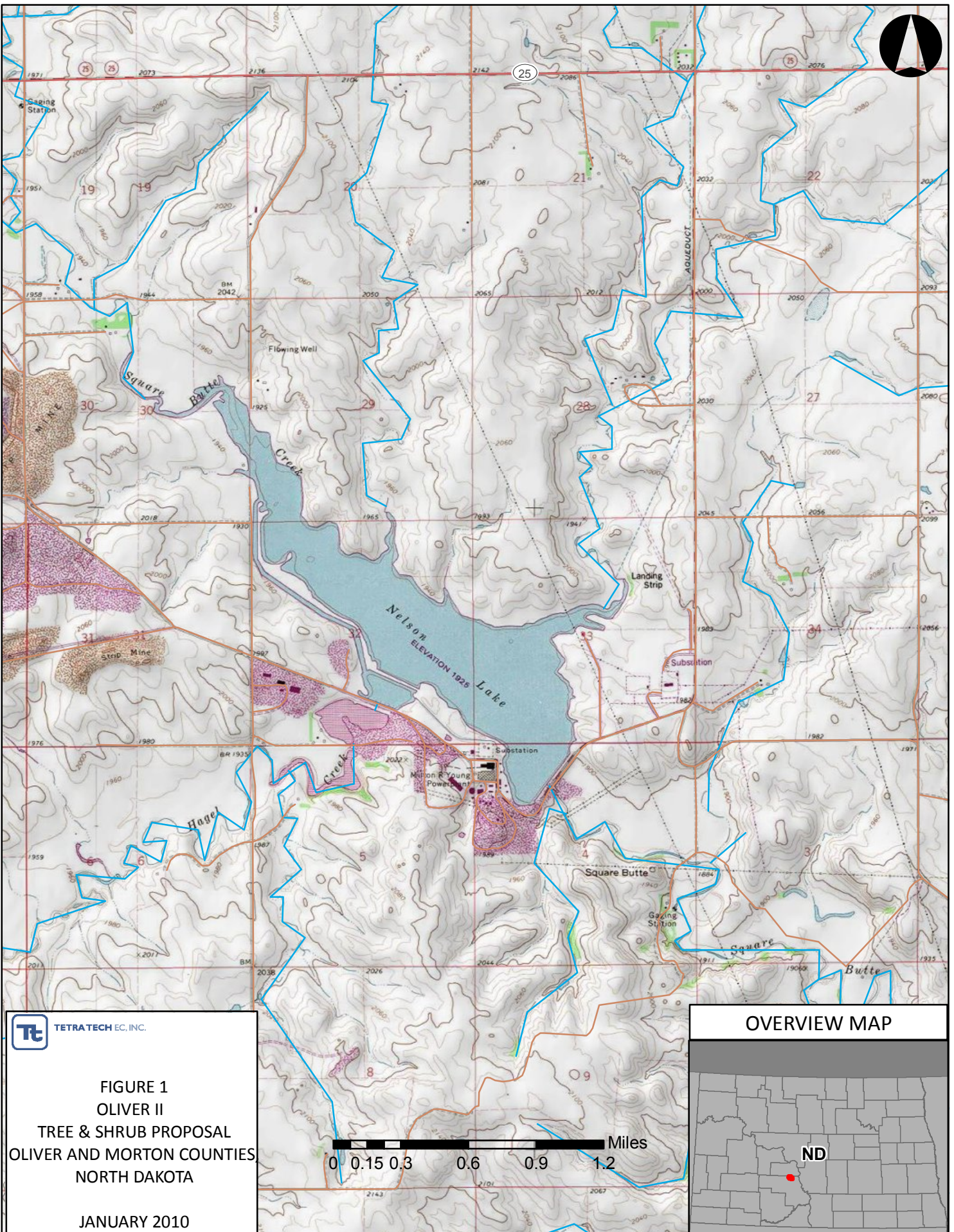
After tree plantings are installed, the number, species, location, and date of planting will be documented and filed with the PSC.


Replacement plantings will be inspected each year for three years in 2012, 2013, and 2014 near the anniversary planting date. The number and type of each surviving tree or shrub will be recorded. Notes on the condition of the saplings will be taken. Survival rates will be calculated and a report will be submitted to the PSC before November 1 of each fall documenting this information. If the survival rate after three years is less than 75 percent, additional plantings may be ordered based on consideration by the PSC.

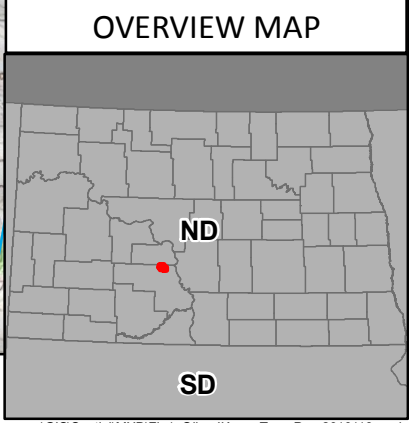
Figures

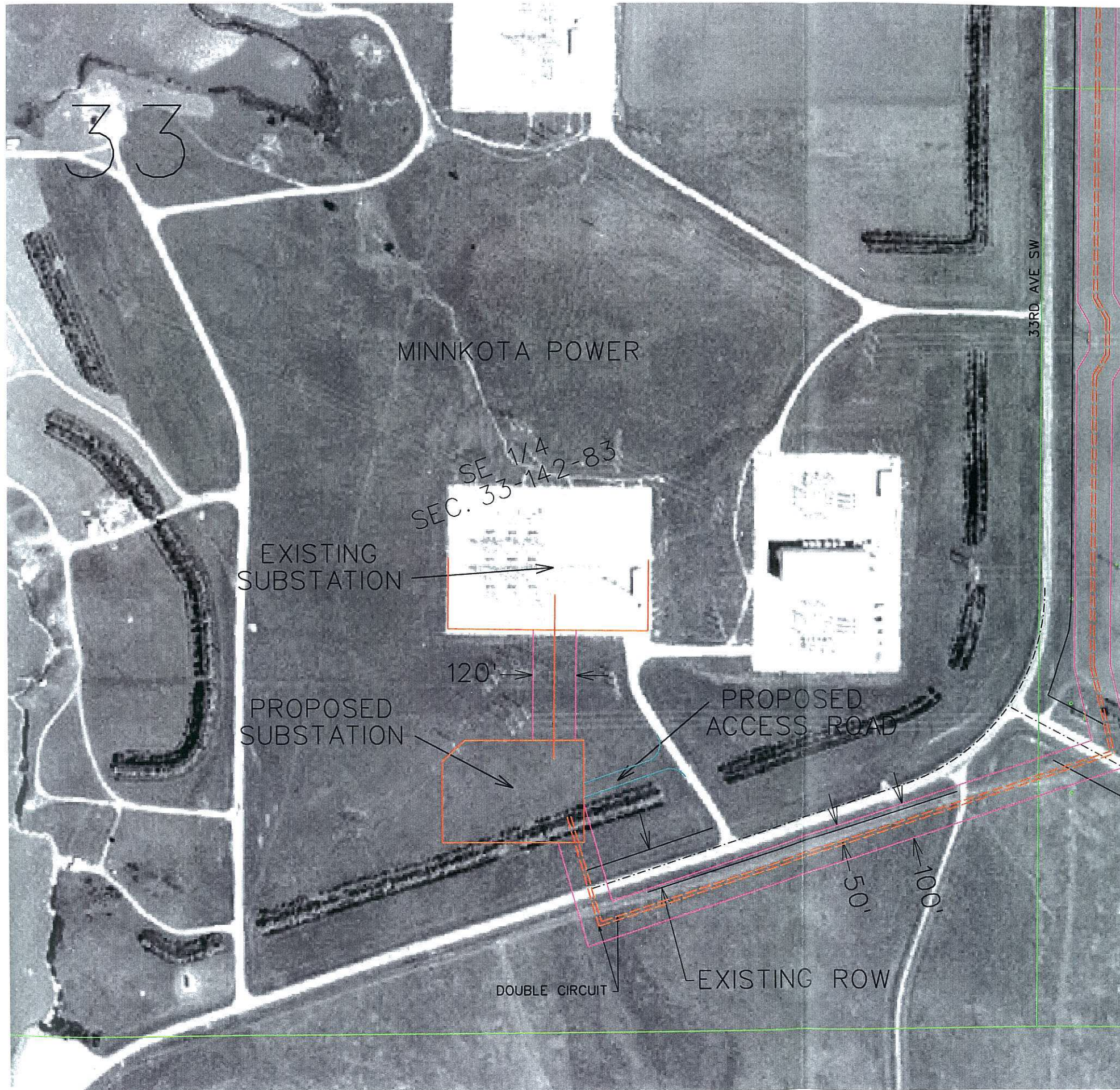
Project Location Map

Site Plan



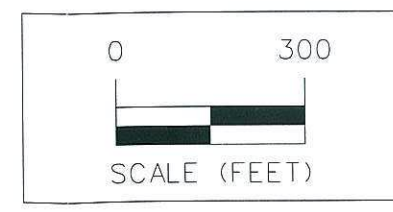

TETRA TECH EC, INC.
FIGURE 1
OLIVER II
TREE & SHRUB PROPOSAL
OLIVER AND MORTON COUNTIES
NORTH DAKOTA
JANUARY 2010





- 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 _____



ISSUE DATE: 6-26-2006

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 Bk:
 Project No: 105.1003
 File No:

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

OLIVER COUNTY, NORTH DAKOTA

MARSHVILLE, MO 660-582-8888
 ANKENY, IA 515-243-6506
 CEDAR RAPIDS, IA 319-362-3394

1751 MADISON AVENUE
 COUNCIL BLUFFS, IOWA 51503
 712-322-3202

105.1003
 Sheet 3 of 3

Sheet 2 of 1

Appendix A

North Dakota Public Service Commission Order

Case No. PU-06-312

**STATE OF NORTH DAKOTA
PUBLIC SERVICE COMMISSION**

**FPL Energy Oliver County Wind, LLC
230 kV Transmission Line - Oliver County
Siting Application**

Case No. PU-06-312

ORDER

August 23, 2006

On July 17, 2006 FPL Energy Oliver County Wind, LLC (Oliver Wind) filed a Letter of Intent to construct approximately 542 feet of radial 230 kV electric transmission line and associated substation facilities in Oliver County, North Dakota. On July 26th the Commission acknowledged the Letter of Intent, shortened the waiting period between filing of a Letter of Intent and a siting application to one day and assessed a filing fee of \$22,500.

On July 25, 2006 Oliver Wind filed consolidated applications for a waiver of procedures and time schedules, a certificate of corridor compatibility and a route permit authorizing construction. Oliver Wind asserts in its application that the proposed electric transmission facilities will produce minimal adverse effects and requests that the Commission (1) waive provisions of law and rule that require filing of separate applications, separate hearings and certain time schedules; (2) not hold a public hearing, but instead publish a notice of opportunity for hearing; (3) find that the proposed facilities are of such length, design, location and purpose that it will produce minimal adverse effects; (4) provide in the notice of opportunity for hearing that requests for hearing be made in not more than ten days under N.D.C.C. section 49-22-13(4); and (5) designate and approve the requested facilities and issue the appropriate corridor certificate and route permit.

On July 28, 2006 the Commission found Oliver Wind's consolidated applications complete and issued a Notice of Filing and Notice of Opportunity for Hearing. The notice provided until August 22, 2006 for receiving written comments and requests for hearings. The notice stated that the Commission can determine the matter without a hearing and no requests for hearing have been received. The notice identified the following issues to be considered:

1. Will the location, construction, and operation of the proposed facilities produce minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota?
2. Are the proposed facilities compatible with the environmental preservation and the efficient use of resources?

3. Will the proposed facility locations minimize adverse human and environmental impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion?
4. Are the proposed facilities of such length, design, location, or purpose that they will produce minimal adverse effects so that procedures and time schedules may be waived?
5. Does a demonstrable emergency exist, which requires immediate construction so that adherence to procedures and time schedules would jeopardize the utility's system?
6. Is it appropriate for the Commission to waive any procedures and time schedules as requested in the application?

Oliver Wind proposes to construct approximately 542 feet of 230 kV electric transmission line and associated substation facilities to interconnect Oliver Wind's proposed wind energy generating project to Square Butte Electric Cooperative's existing Center Substation in Oliver County, North Dakota.

The associated substation facilities include a new collection substation and interconnection modifications at the Center Substation where the electricity generated will be inverted to direct current (DC) for transmission to retail loads in Minnesota.

Oliver Wind proposes a circular transmission corridor with a radius of approximately one-half mile around its proposed transmission line route located in the SE $\frac{1}{4}$ of Section 33, T 142N, R 83W. The corridor is located entirely within Oliver County in Sections 3 & 4 of T 141N, R 83W, and Sections 33 & 34 of T 142N, R 83W.

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

The estimated cost of the transmission line and associated substation facilities is approximately \$4.5 million.

The proposed transmission line and associated substation facilities would be constructed entirely on utility property surrounding the existing Milton R. Young electric generating station.

Oliver Wind conducted a Class I review of historic and archeological records and a Class III cultural resource pedestrian survey of the project area. The State Historical Society of North Dakota found these studies acceptable and concurred with Oliver Wind's determination of no significant impact on cultural resources.

Nelson Lake along the western edge of the proposed corridor is an area of recreational significance listed on the U.S. Fish and Wildlife National Wetlands Inventory (NWI). Nelson Lake offers boating, fishing and other recreational opportunities. Nelson Lake is located approximately 0.3 miles west of the proposed route and will be avoided.

The Pioneer Riparian community, *Potamogeton vaginatus* (sheathed pondweed) has been identified by the North Dakota Heritage Program as a sensitive plant species found within the Nelson Lake wetlands in the southwestern portion of the proposed corridor. Disturbance of this plant and associated wetland and riparian communities will be avoided.

The U.S. Fish and Wildlife Service has reviewed the project and concluded no significant impact on fish and wildlife resources. The service reports no endangered or threatened species are known to occupy the project area.

Oliver Wind estimates approximately 13.74 acres of woodlands and shelterbelts within the proposed corridor. 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 by construction.

The Commission finds the location, construction, and operation of the proposed transmission line will produce minimal adverse effects on the environment and upon the welfare of the citizens of North Dakota.

The Commission finds the proposed transmission line compatible with the environmental preservation and the efficient use of resources.

The Commission finds the proposed transmission line route minimizes adverse human and environmental impact while ensuring continuing system reliability and integrity and ensuring that energy needs are met and fulfilled in an orderly and timely fashion.

The Commission finds the proposed transmission line is of such length, design, location, or purpose that it will produce minimal adverse effects.

The Commission does not find that a demonstrable emergency exists.

The Commission finds it appropriate to waive procedures and time schedules as requested in the application.

Order

The Commission Orders:

1. Oliver Wind's application for waiver of procedures and time schedules is granted.

2. Certificate of Site Compatibility for a Transmission Facility Corridor No. 92 is issued to Oliver Wind, designating a corridor for its proposed transmission line and associated substation facilities as shown on the attached map.
3. Route Permit for Construction of a Transmission Facility No. 102 is issued to Oliver Wind, granting authority to construct the transmission line and associated substation facilities in the location shown on the attached map.
4. Oliver Wind shall conduct a preconstruction conference prior to commencement of any construction, which must include an Oliver Wind representative, its construction supervisor and a representative of Commission staff to ensure that Oliver Wind fully understands the conditions set forth in this Order.
5. Oliver Wind shall comply with the rules and regulations of all other agencies having jurisdiction over any phase of the project, and shall provide copies of all licenses and permits to the Commission prior to construction of the transmission lines.
6. Oliver Wind shall inform the Commission of its intent to start construction prior to commencement of construction and, once construction has started, shall keep the Commission updated on construction activities on a weekly basis.
7. Oliver Wind shall construct and operate the transmission line and associated substation facilities in the manner described in its application and in accordance with the National Electric Safety Code and all applicable safety requirements.
8. Oliver Wind shall promptly report to the Commission the presence in the permit area of any critical habitat of threatened or endangered species, or of bald or golden eagles which Oliver Wind becomes aware of and which were not previously reported to the Commission.
9. If any cultural resource, paleontological, archeological, historical, or grave site is discovered during construction, it must be marked, preserved, and protected from further disturbances until a professional examination can be made by the State Historical Society, a report of such examination is filed with the Commission and clearance to proceed is given by the Commission.
10. All pre-existing roads and lanes used during construction must be restored to a condition that will accommodate their previous use and areas used as temporary roads or working areas during construction shall be restored to their original condition.
11. Construction must be suspended when weather conditions are such that construction activities will cause irreparable damage, unless adequate protection measures approved by the Commission are taken.
12. Reclamation and clean-up along the right-of-way must be continuous and coordinated with construction.

13. Reclamation, fertilization, and reseeded is to be done by Oliver Wind according to the National Resources Conservation Service and County Farm Service Agency recommendations for CRP, native prairie and other lands, unless otherwise specified by the landowners and approved by the Commission.

14. Oliver Wind's obligation for reclamation and maintenance of the right-of-way will continue throughout the life of the transmission lines.

15. Trees and other wooded vegetation must be replaced with saplings that are two or more years old at a rate of two for every one removed along the route. The landowner shall be given the option of having replacement trees/shrubs planted off the right-of-way on the landowner's property or waiving that requirement in writing and allowing replacement plantings of trees/shrubs elsewhere. Oliver Wind shall inspect tree replacements once a year for three years and send a report on or shortly before November 1 of 2007, 2008 and 2009 to the Commission documenting work completion and condition of woodlands planting. The Commission may order additional plantings if survival rates are less than 75% of the required ratio of two for one.

16. Oliver Wind shall work with landowners and residents to mitigate any increase in television and residential radio interference that results from the project.

17. Oliver Wind shall obtain approval from the Commission or from Commission staff prior to any changes in structure locations.

18. Oliver Wind shall provide the Commission with a copy of the design specifications for construction showing the location of the transmission line and associated substation facilities as built. Oliver Wind shall provide this information within three months of the completion of construction.

19. The authorization granted by the corridor certificate and route permit is subject to modification by order of the Commission if deemed necessary to further protect the public or the environment.

PUBLIC SERVICE COMMISSION

Susan E. Wefald
Commissioner

Tony Clark
President

Kevin Cramer
Commissioner

Appendix B

Planting Plan

