Pillsbury - Fargo Generation Outlet Project

Application for a Waiver of Procedures and Timelines, and Consolidated Certificate of Corridor Compatibility and Route Permit

March 14, 2008

OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

MPC

Your Touchstone Energy® Partner

Prepared by:

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OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.
Your Touchstone Energy® Partner

March 18, 2008

Ms. Illona Jeffcoat-Sacco
Executive Secretary
North Dakota Public Service Commission
600 E. Boulevard Avenue, Department 408
Bismarck, ND 58505-0480

RE: Otter Tail Power Company (Otter Tail Power) and planned joint partner Minnkota Power Cooperative, Inc. (Minnkota), collectively referred to as "the Utilities" Application to the North Dakota Public Service Commission for Waiver of Procedures and Time Schedules and Consolidated Application for a Certificate of Corridor Compatibility and Route Permit for the Pillsbury-Fargo Generation Outlet

Dear Ms. Jeffcoat-Sacco:

Pursuant to North Dakota Century Code 49-22-08 and 49-22-08.1, the Energy Conversion and Transmission Facility Siting Act, and promulgated rules, the Utilities have enclosed the following:

An original and ten copies of an Application for a Waiver of Procedures and Time Schedules and Consolidated Application for a Certificate of Corridor Compatibility and Route Permit for the Pillsbury-Fargo Generation Outlet, Docket Number PU-08-48. A check, payable to the North Dakota Public Service Commission, was previously sent to the North Dakota Public Service Commission in the amount of $100,000.00, which is the fee previously set by the Commission.

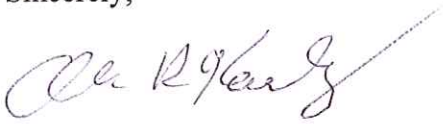
The Utilities have provided proposed pole locations in the Route Permit application that are representative of the final placement. The Utilities propose to submit the Final Plan and Profile drawings at least 10 days prior to the preconstruction hearing.

The Utilities believe that this approach to the Final Plan and Profile drawings is consistent with Commission guidelines with respect to transmission siting. Nonetheless, the Utilities request that the Commission stipulate in the Route Permit that a Final Plan and Profile be submitted to the Commission at least 10 days prior to the preconstruction hearing.

The Route and Corridor described in this Application from Pillsbury to Fargo is similar to the Route and Corridor approved by the Commission in North Dakota Public Service Commission Case No. 126-90-625, a case filed by Cenex Pipeline Company in 1990.

Please contact me by phone at 218-739-8416 or via email at akoeckeritz@otpco.com should you have any questions with respect to this filing.

Sincerely,



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Pillsbury - Fargo
Generation Outlet Project

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March 14, 2008

Prepared for:

OTTER TAIL POWER COMPANY

&

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1.0 INTRODUCTION

Otter Tail Power Company (Otter Tail Power) and planned joint partner Minnkota Power Cooperative, Inc. (Minnkota), collectively referred to as "the Utilities", submits this application for a Waiver of Procedures and Time Schedules, and a Consolidated Certificate of Corridor Compatibility (Corridor Certificate) and Route Permit to construct the Pillsbury to Fargo Generation Outlet Project.

The Pillsbury to Fargo Generation Outlet Project is located in Cass and Barnes counties, North Dakota (figure 1), and will consist of approximately 56.6 miles of 230,000 volt (230-kV) transmission line between a new project substation located in Section 7 of Ellsbury Township, Barnes County, North Dakota, and the existing Maple River substation, near Fargo, Cass County, North Dakota. The high voltage transmission line would serve as a generation outline line to support planned wind development projects in Barnes, Griggs and Steele counties.

Otter Tail Power provides electricity and energy services to more than a quarter million people in Minnesota, North Dakota, and South Dakota, and is headquartered in Fergus Falls, Minnesota. Otter Tail Power owns and operates or markets approximately 716 megawatts (MW) of generation capability, including the Big Stone Plant (Milbank, South Dakota), Coyote Station Plant (Beulah, North Dakota), and Hoot Lake Plant (Fergus Falls, Minnesota). Otter Tail Power also owns and operates approximately 5,293 miles of transmission lines. Approximately nine percent of their electricity is produced with renewable resources, including wind, water, and biomass. Minnkota is a generation and transmission cooperative that supplies wholesale electricity to 11 member-owned distribution cooperatives, three in eastern North Dakota and eight in northwestern Minnesota. Minnkota also is the operating agent for Northern Municipal Power Agency (NMPA), which serves 12 municipal utilities in the same geographic region. Together the Minnkota/NMPA Joint System currently serves more than 280,000 people.

1.1 COMPLIANCE WITH THE ENERGY CONVERSION AND TRANSMISSION FACILITY SITING ACT CHAPTER 49-22

The North Dakota Energy Conversion and Transmission Facility Siting Act (Siting Act) require applications for a Corridor Certificate and a Route Permit to meet the criteria set forth in North Dakota Century Code (NDCC) 49-22.

To the extent available, the Utilities have presented herein information required by the North Dakota Siting Act. The Utilities have considered exclusion areas, avoidance areas, selection criteria and policy criteria in the selection and design of the proposed route (figure 2). In addition, sufficient generation outlet design and technical information have been provided for a thorough evaluation of the reasonableness of the corridor studied and proposed route. The Utilities have chosen a corridor that is substantially adjacent to existing utility and transportation corridors, which thereby helps to minimize environmental impacts.

Tables 1 and 2 outline the information required to fulfill the requirements for a Corridor Certificate and Route Permit with the North Dakota Public Service Commission (Commission or PSC) using the PSC Guidelines and identifying where these requirements are addressed in this document.

1.1.1 Waiver of Procedures and Time Schedules

The Utilities submit this Application for a Waiver of Procedures and Time Schedules and consolidated applications for a Corridor Certificate and Route Permit (collectively, application) for purposes of siting and constructing an approximately 56.6-mile-long 230-kV transmission facility. By this application, the Utilities request that the Commission, pursuant to NDCC Section 49-22-07.2, waive the following requirements:

1. That the Commission hold separate hearing as may be required by NDCC Sections 49-22-08 and 49-22-08.1, 49-22-13 and North Dakota Administrative Code (NDAC) Section 69-06-01-02. The Utilities request that the Commission hold a single consolidated hearing on this waiver request and application for a Certificate of Corridor Compatibility and Route Permit. The Utilities also requests that the Commission shorten the three-month period specified in NDCC Section 49-22-08(5) and the six-month period specified in NDCC Section 49-22-08.1(5).
2. That the Commission waive the requirements of NDCC Section 49-22-08 and NDCC Section 49-22-08.1 insofar as these sections may require the separate filing of applications for a Corridor Certificate and a Route Permit, and insofar as they require separate publication of notices of filing applications.
3. That the Commission waive the requirements of a Ten-Year Plan to be included in the application. The Utilities will update their Ten-Year Plans with the Commission by July 2008.
4. That the Commission waive requirements for mylar maps and stereo-pair aerial photographs as set forth in the Commission's Application Guidelines for a Corridor Certificate and a Route Permit. Geographic Information System (GIS) maps that meet the intent of the Commission requirements are provided in the application.

The Commission's Application Guidelines for Waiver of Procedures and Time Schedules require a facility description, need for, cost of and justification for the request for waiver, together with evidence that the project will produce minimal adverse effects. As demonstrated in the application, and as summarized below, the Utilities Waiver Request and the issuance of a Corridor Certificate and Route Permit is justified, as the proposed facility is of such design, location and purpose that it will produce minimal adverse effects.

Description

The Utilities propose to construct, own, and operate a 56.6-mile-long, 230-kV, three-phase alternating current electric transmission line from a new substation in Section 7 of Ellsbury Township, Barnes County, North Dakota (figure 3), to the existing Maple River substation, near Fargo, Cass County, North

Dakota (figures 4 and 5). The purpose of the transmission line facilities is to transmit 400 MW of electricity from proposed wind projects in Barnes, Steele, and Griggs counties. However, the line will be designed to transmit up to 680 MW to allow for future growth.

Additionally, the proposed facility offers North Dakota and the Mid-Continent Area Power Pool/Midwest Independent System Operator (MAPP/MISO) region the opportunity to ensure adequate capacity exists, to stabilize and perhaps even lower wholesale power prices, and to provide added reliability through transmitting the electricity generated by a clean, cost-effective renewable energy facility.

A description of the project is described in greater detail throughout the application.

Need

The need for the proposed facility and how it will further the public interest is described in greater detail in section 2.0 of the application.

Cost

The estimated total cost of construction is $35,000,000.

Justification for Waiver

Waivers of timelines and procedures are needed in order to prevent potentially significant delays in this project. A key incentive for wind energy is the federal Production Tax Credit (PTC). The PTC is set to expire at the end of 2008. The Utilities need to receive all pre-construction permits and approvals so that construction can begin in 2008 in sufficient time to complete the project allowing the wind energy projects to qualify for the PTC. Completing this line will help the Utilities secure economic Power Purchase Agreement (PPA)(s) and wind energy ownership opportunities. Like other wind projects, the Pillsbury to Fargo Generation Outlet Project would not be viable without receiving this credit.

Section 49-22-07.2 of the Act provides that the Commission may waive procedures and time schedules upon a finding that "the proposed facility is of such length, design, location or purpose that it will produce minimal adverse effects." Based upon the thorough investigation and analysis set forth in the application, waivers are appropriate because the proposed facility will produce minimal adverse effects.

In determining whether the proposed facility will result in adverse impacts on the environment, the Utilities evaluated the project using the criteria set forth in the Act, the Rules, and the Commission's Guidelines for Energy Conversion and Transmission Facility Siting (Guidelines). The Utilities evaluated the impacts of the project considering the siting criteria laid out in NDAC 69-06-08 (section 3.0 of the application) and the factors to be considered in NDCC Section 49-22-09 (section 8.0 of the application). Impacts associated with the project are summarized in section 5.17 of the application. Based upon this evaluation and the factors set forth in the Siting Act and Guidelines, the proposed facility will have minimal adverse effects.

State and federal agencies were consulted to provide input on potential impacts of the proposed corridor and route and, in general, concluded that the proposed facility would produce minimal adverse effects. Their findings are summarized in section 8.11 of this application.

Also, the Utilities proposal takes into consideration federal and state agency concerns and thereby further mitigates any adverse effects associated with the project. The designated state agencies and officers listed in NDAC 69-06-01-05 were notified about the proposed project in February of 2008 and the Utilities will continue to work with the agencies to implement conditions that may be imposed.

In short, the Utilities submit and believe the evidence demonstrates that it has taken all feasible and prudent actions to minimize and mitigate to the greatest extent possible all known or potential adverse impacts. As a result, the proposed project will produce minimal adverse effects. Accordingly, the Utilities respectfully requests that the Commission grant the requested waivers and render an expeditious decision.

1.1.2 Certificate of Corridor Compatibility

Table 1 outlines the information required in the PSC Guidelines dated November 1979 for a Corridor Certificate.

Table 1
Corridor Certificate Completion Checklist

State Authority	Description	Section
Chapter 49-22	PSC Guidelines: Energy Conversion and Transmission Facility Siting	1.1.1
Section A	Description	1.2
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	1.0, 1.2.1
2.	Product: Describe the type, source, and final destination of the product to be transmitted by the proposed facility.	1.2.3
3.	Size and Design:	4.0
a.	Provide a description of the size and design of the ELECTRICAL facility including, but not limited to, the following:	4.1, 4.2.1, 4.2.4
1.	Width of right of way;	4.2.1
2.	Estimated span lengths;	4.2.1
3.	Anticipated type of structure;	4.2.1
4.	Approximate length of facility	Figures, 1.2, 4.1
5.	Voltage; and	4.2.1
6.	The requirement for a general location of any new associated	4.2.4

State Authority	Description	Section
	facilities.	
b.	Provide a description of the size and design of the PIPELINE facility including, but not limited to, the following:	N/A
4.	Time Schedule: Provide the anticipated time schedule for the accomplishment of the following events:	1.3
a.	Certificate of Corridor Compatibility;	1.3
b.	Route Application;	1.3
c.	Route Permit;	1.3
d.	Construction start date;	1.3
e.	Construction complete; and	1.3
f.	In-service date.	1.3
Section B	Studies	
	Provide a copy of any evaluative studies or assessments of the environmental impact of the proposed facility submitted to any federal, regional, state or local agency.	Studies completed: 1. Class I Cultural Resources Inventory (appendix A) 2. The Utilities will conduct a Class III cultural resources survey, and wetland delineation, prior to construction.
Section C	Need for Facility	2.0
1.	An analysis of the need for the proposed facility based on present and projected demand for the product to be transmitted by the facility, including the most recent system studies supporting the analysis of the need.	2.1
2.	A description of any feasible alternative methods of serving the need.	2.2
3.	A statement justifying any deviations from the most recent Ten-Year Plan which the proposed facility may present.	2.3
Section D	Location	1.0, 1.2
1.	Select a study area, which includes the proposed corridor, of sufficient width to enable the Commission to evaluate the factors addressed in Section 49-22-09, NDCC.	1.2.1, 6.0
2.	Identify and map the criteria that led to the proposed corridor location within the study area.	Figure 2, 1.2.1, 3.0
3.	Discuss the relative value of each criteria and how the proposed corridor location was selected giving consideration to all criteria.	1.2.1, 3.0

State Authority	Description	Section
4.	The criteria to be evaluated shall include at a minimum all of the following which are within the study area:	3.0
a.	Exclusion areas;	3.1.1
b.	Avoidance areas;	3.1.2
c.	Selection criteria;	3.1.3
d.	Policy criteria;	3.1.4
e.	Design and construction limitations; and	3.1.5
f.	Economic considerations.	3.1.6
5.	Discuss the general mitigation measures that will be taken to minimize adverse impacts that result from a route location in the proposed corridor.	5.1.3, 5.2.3, 5.3.3, 5.4.3, 5.5.3, 5.6.3, 5.7.3, 5.8.3, 5.9.3, 5.10.3, 5.11.3, 5.12.3, 5.13.3, 5.14.3, 5.15.3, 5.16.3
6.	List the qualifications of the people in the various disciplines that contributed to the corridor location study	9.0
7.	Maps	Figures
a.	Map the criteria within the study area showing the proposed corridor. Several different criteria may be shown on each map, depending on the map scale and the density and nature of the criteria. Minimum map scale shall be ½ inch = 1 mile. All maps shall be at the same scale unless otherwise specified.	Figures
b.	Furnish one set of Mylar maps, separate from the application, of the same scale as the criteria maps and showing the same basic features as the criteria maps, including the study area, but not the proposed facility location.	Figures
Chapter 49-22-09	Factors to be considered in evaluating applications and designation of sites, corridors, and routes.	8.0
1.	Available research and investigations relating to the effects of the location, construction, and operation of the proposed facility on public health and welfare, natural resources, and the environment.	8.1
2.	The effects of new energy conversion and transmission technologies and systems designed to minimize adverse environmental effects.	8.2
3.	The potential for beneficial uses of waste energy from a proposed energy conversion facility	8.3
4.	Adverse direct and indirect environmental effects which cannot be avoided should the proposed site or route be designated.	8.4
5.	Alternatives to the proposed site, corridor, or route which are developed during the hearing process and which minimize adverse effects.	8.5

State Authority	Description	Section
6.	Irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated.	8.6
7.	The direct and indirect economic impacts of the proposed facility	8.7
8.	Existing plans of the state, local government, and private entities for other developments at or in the vicinity of the proposed site, corridor, or route.	8.8
9.	The effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites.	8.9
10.	The effect of the proposed site or route on areas which are unique because of biological wealth or because they are habitats for rare and endangered species	8.10
11.	Problems raised by federal agencies, other state agencies, and local entities	8.11

1.1.3 Route Permit Application

Table 2 below outlines the information required in the PSC Guidelines dated November 1979 for a Route Permit. Information regarding easements for transmission lines per NDCC 49-22-08.1(f) is also included in the application in section 3.1.5.

Table 2
Route Permit Completion Checklist

State Authority	Description	Section
Chapter 49-22	PSC Guidelines: Energy Conversion and Transmission Facility Siting	1.1.2
Section A	Description	1.2
1.	Type: Describe the type of transmission facility proposed.	1.0, 1.2.2
2.	Product: Describe the product or products to be transmitted.	1.2.3
3.	Size and Design: Provide a general description of the proposed size and design, and any alternate size or design, which was considered. Provide one (1) copy of the design data report, separate from the application, for the proposed facility and any associated facilities.	4.0
4.	Time Schedule: Provide the anticipated time schedule for the accomplishment of major events including, at a minimum, the following:	1.3
a.	Route Permit;	1.3
b.	Right-of-way acquisition complete;	1.3
c.	Construction start date;	1.3
d.	Construction complete;	1.3
e.	Test operations; and	1.3
h.	In-service date.	1.3
Section B	Studies	
	Provide a copy of any evaluative studies or assessments of the environmental impact of the proposed facility submitted to any federal, regional, state or local agency.	Studies completed: 1. Class I Cultural Resources Inventory (appendix A) 2. The Utilities will conduct a Class III cultural resources survey, and wetland delineation, prior to construction.

State Authority	Description	Section
Section C	Need for Facility	2.0
1.	An analysis of the need for the proposed facility based on present and projected demand for the product to be transmitted by the facility, including the most recent system studies supporting the analysis of the need.	2.1
2.	A description of any feasible alternative methods of serving the need.	2.2
3.	A statement justifying any deviations from the most recent Ten-Year Plan which the proposed facility may present.	2.3
Section D	Location	1.0, 1.2
1.	Discuss the utility's policies and commitments to limit the environmental impact of its facilities, including copies of board resolutions and management directives.	Appendix B
2.	Discuss the factors listed in Section 49-22-09, NDCC to aid the Commission's evaluation of the proposed route.	All 6.0
3.	Identify and map the criteria that led to the proposed route location within the designated corridor.	Figure 2, 1.2.2, 3.0
4.	Discuss in detail the relative value of each criteria and how the location, construction, and operation of the facility will affect each criteria.	3.0, 5.0-5.16
5.	The criteria to be evaluated shall include at a minimum all of the following which are within the designated corridor:	3.0
a.	Exclusion areas;	3.1.1
b.	Avoidance areas;	3.1.2
c.	Selection criteria;	3.1.3
d.	Policy criteria;	3.1.4
e.	Design and construction limitations; and	3.1.5
f.	Economic considerations.	3.1.6

State Authority	Description	Section
6.	Discuss the mitigative measures that will be taken to minimize adverse impacts which result from the location, construction, and operation of the proposed facility.	5.1.3, 5.2.3, 5.3.3, 5.4.3, 5.5.3, 5.6.3, 5.7.3, 5.8.3, 5.9.3, 5.10.3, 5.11.3, 5.12.3, 5.13.3, 5.14.3, 5.15.3, 5.16.3
7.	List the qualifications of the people in the various disciplines that contributed to the facility route location study.	9.0
8.	Maps	Figures
a.	Map the criteria within the designated corridor showing the proposed route and location of any new associated facilities. Several different criteria may be shown on each map, depending on the map scale and the density and nature of the criteria. Minimum map scale shall be ½ inch = 1 mile. All maps shall be at the same scale unless otherwise specified.	Figures
b.	Furnish one (1) set of Mylar maps, separate from the application, of the same scale as the criteria maps and showing the same basic features as the criteria maps, including the designated corridor, but not the proposed route or location of any new associated facilities.	Figures
c.	Furnish one (1) set of uncontrolled 9x9 inch stereo-pair aerial photographs, separate from the application, with acceptable resolution showing the designated corridor, proposed route and location of any new associated faculties, and Section, Township and Range numbers, at a scale of 1 inch = 2000 feet, together with a flight map at a scale of ½ inch = 1 mile showing each flight line and the beginning and ending photo number of each flight line. Photo mosaic strip maps will also be acceptable. If the applicant can demonstrate that because of the limited size and scope of the project, aerial photographs would not be practical, this requirement may be waived.	Figures
Chapter 49-22-09	Factors to be considered in evaluating applications and designation of sites, corridors, and routes.	8.0
1.	Available research and investigations relating to the effects of the location, construction, and operation of the proposed facility on public health and welfare, natural resources, and the environment.	8.1
2.	The effects of new energy conversion and transmission technologies and systems designed to minimize adverse environmental effects.	8.2
3.	The potential for beneficial uses of waste energy from a proposed energy conversion facility	8.3

State Authority	Description	Section
4.	Adverse direct and indirect environmental effects which cannot be avoided should the proposed site or route be designated.	8.4
5.	Alternatives to the proposed site, corridor, or route which are developed during the hearing process and which minimize adverse effects.	8.5
6.	Irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated.	8.6
7.	The direct and indirect economic impacts of the proposed facility	8.7
8.	Existing plans of the state, local government, and private entities for other developments at or in the vicinity of the proposed site, corridor, or route.	8.8
9.	The effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites.	8.9
10.	The effect of the proposed site or route on areas which are unique because of biological wealth or because they are habitats for rare and endangered species	8.10
11.	Problems raised by federal agencies, other state agencies, and local entities	8.11

1.2 PROJECT SUMMARY

The Utilities propose to construct a generation outlet, including one new substation (figure 3) and a 230-kV transmission line on single circuit 230-kV steel davit arm steel mono-pole and wooden or steel H-frame structures (figures 4 and 5) within the corridor identified in section 1.2.1. A description of the proposed facility is provided in section 4.2. A route was selected after addressing the factors identified in NDCC 49-22-09 and evaluating the criteria in NDAC 69-06-08-02. Below is a description of the study area, the proposed corridor, and the proposed route for the new 230-kV transmission line and new substation. The new line will be approximately 56.6 miles in length and will transmit energy from a new substation near Pillsbury, North Dakota, to an existing substation located near Fargo, North Dakota.

1.2.1 Study Area and Proposed Corridor

Figure 2 presents exclusion and avoidance areas in the study area that were analyzed to select the proposed corridor. The proposed corridor was identified by looking for other existing corridor facilities between the generation outlet area and the market delivery point. In particular, other powerline, roadway,

rail, and pipeline corridor facilities were sought to maximize the potential to collocate near existing facilities and minimize the amount of new "Greenfield" right-of-way. The western terminus of the corridor is located to be easily accessible to planned wind generation facilities in Griggs, Steele and Barnes counties. The eastern terminus of the corridor is located to access existing transmission and distribution facilities near Fargo, North Dakota. The energy transmitted along the new transmission lines will help the Utilities meet Minnesota's 25-by-25 renewable energy standard and the 10 percent renewable energy objectives initiated in North Dakota and South Dakota.

The proposed corridor was selected in the study area after considering the exclusion and avoidance criteria outlined in NDAC 69-06-08-02. In reviewing the proposed study area vicinity, no major transmission facilities occur except closer to the vicinity of Fargo. Existing Burlington Northern Santa Fe (BNSF) railroad track facilities and roadways are significant facilities that exist in the study area. The area is otherwise generally rural and intensively farmed land interspersed by small incorporated and non-incorporated communities, rural homesteads, open land, wind breaks, distribution lines and other facilities such as buried pipelines and fiber optic cables. Of particular note, a Cenex natural gas pipeline was identified that closely follows the BNSF railroad and other roadways in the study area. The Cenex pipeline route was previously reviewed and approved by the PSC under the Siting Act as Docket #PU-126-90-625.

The proposed corridor study area is six miles wide for the generation outlet. The corridor consists of the legal location descriptions (townships, ranges and sections) provided in Table 3 and is represented on the figures included with this application (i.e., figures 2 through 5). The selected corridor complies with NDCC 69-06-04-02 which states that the width of the corridor must be 10 percent of the length of the line, not less than one mile and not more than six miles in width.

Table 3
Corridor Study Area Legal Descriptions

Township Name	Township	Range	Sections
Barnes	139	49	2 – 10
Mapleton	139	50	1, 2
Reed	140	49	4 – 11; 13 – 36
Raymond	140	50	1 – 30; 33 – 36
Harmony	140	51	1 – 6; 8 – 15; 23; 24
Casselton	140	52	1
Harwood	141	49	31; 32
Berlin	141	50	17 – 22; 25 – 36

Township Name	Township	Range	Sections
Rush River	141	51	3 – 36
Amenia	141	52	1 – 28; 35; 36
Empire	141	53	1- 6; 9 – 14
Gunkel	142	51	31; 32
Arthur	142	52	17 – 22; 25 – 36
Erie	142	53	2 – 36
Rich	142	54	1 – 30; 33 – 36
Lake	142	55	1 – 17; 23; 24
Dows	143	53	31; 32
Page	143	54	19; 20; 26 – 36
Rochester	143	55	6 – 9; 13 – 36
Minnie Lake	142	56	1 – 4; 12
Ellsbury	143	56	1 – 36
Baldwin	143	57	1 – 27
Sibley Trail	143	58	1; 12
Carpenter	144	56	29 – 34
Willow Lake	144	57	20 – 36

The factors addressed in NDCC 49-22-09 were considered in evaluating the corridor for a 230-kV transmission line and are discussed in section 8.0. All exclusion and avoidance criteria within the study area were considered in selecting the proposed corridor. The Utilities sought to avoid residential areas, irrigated land, recreational areas, waterfowl production areas (WPAs), and wildlife management areas (WMAs) to the extent practicable. The Utilities also considered utilizing existing transmission corridors and interconnecting with existing infrastructure where possible. This is consistent with NDAC Policy Criteria for transmission corridors and routes (§§69-06-08-02-2e; 69-06-08-02-4i; 69-06-08-02-4g) which encourages applicants to avoid places of residence, maximize benefits by utilizing existing and proposed route corridors and coordinating facilities.

1.2.2 Proposed Route

Within the study area corridor, the Utilities identified a proposed route after considering the exclusion and avoidance criteria outlined in NDAC 69-06-08, as outlined in section 3.0 of this application, and after considering public input as described in section 6.0 of this application. Figure 2 identifies the proposed route relative to the study area and exclusion and avoidance criteria. Legal descriptions of the route location are provided in Table 4.

Table 4
Route Location Legal Descriptions

County	Township Name	Township	Range	Sections
Cass	Reed	140	49	7; 8; 16-17; 21; 28
Cass	Raymond	140	50	7 - 12
Cass	Harmony	140	51	1; 12
Cass	Rush River	141	51	18-21; 26-28; 35; 36
Cass	Amenia	141	52	4 - 6; 9-11; 13; 14
Cass	Arthur	142	52	31
Cass	Erie	142	53	28-30; 33-36
Cass	Rich	142	54	6-8; 17; 20; 21; 25-28
Cass	Lake	142	55	1; 2
Cass	Rochester	143	55	29; 30; 32-35
Barnes	Ellsbury	143	56	7-10; 15; 22-25

The proposed route generally will be within about 100 feet of existing transmission line, buried pipeline, BNSF railroad right-of-way and/or roadways for about 47.4 miles of the 56.6 -mile-long route (87 percent of the length). This includes about 10.2 miles (18 percent) directly adjacent to existing high voltage transmission line, about 32.0 miles (56 percent) that will be about 75 feet from an existing Cenex pipeline, which is generally within about 100 feet of BNSF railroad, and about 5.2 miles (9 percent) that will be about 50 feet from existing roadways. Of the 32.0 miles that the proposed generation outlet parallels the existing Cenex pipeline, 28.6 miles is coincidental with the BNSF rail line. The Cenex pipeline route was previously reviewed and approved by the Commission under Docket No. PU-126-90-625.

There are two locations where the proposed route is not adjacent to existing corridors, which total about 9.2 miles (13 percent) of the route. One is a 2.2-mile-long segment near the Maple River substation

where existing farmland is crossed in order to avoid existing residences and be adjacent to an existing transmission line crossing of the Sheyenne River. The other is about a 7.0-mile-long segment to avoid residences and irrigated areas south of the Erie Lake Wildlife Management Area.

The average span length would be about 600 feet where mono-pole structures are used, and about 900 feet where H-frame structures are used. Longer span lengths—up to approximately 1,000 feet—and shorter span lengths will be possible in select locations where practicable to avoid or minimize impact to residences; wetlands and water bodies; sensitive areas such as native prairie and windbreaks or other areas identified to minimize impacts to farming operations; or to span railroads and roadways.

1.2.3 Product

The generation outlet will transmit the energy generated by the proposed wind generation projects in Barnes, Griggs, and Steele Counties to the existing Maple River substation near Fargo, North Dakota. The line is intended to carry 230-kV, three-phase, alternating current, electrical energy. The maximum capacity will be 680 MW and is expected to operate at 400 MW. Much of the energy transmitted on the new transmission line will be used to serve Otter Tail Power and Minnkota customers in North Dakota, South Dakota and Minnesota.

1.3 PROJECT SCHEDULE

The Utilities construction schedule will be set by satisfactorily reaching a number of milestone agreements and approvals. The in-service date is dependent upon board approvals, permitting and development activities. The Utilities are targeting construction to begin in June 2008 provided that the Utilities can secure satisfactory PPA(s) or ownership terms and it has received all pre-construction permits and approvals. Since the economics of wind energy are largely tied to the federal PTC, the Utilities are working to completing the project prior to the expiration of the PTC at the end of 2008. To receive the PTC, the proposed wind generating facilities in Barnes, Steele, and Griggs Counties must be generating electricity by the end of the year. Therefore, a generation outlet needs to be completed in November.

1. **Certificate of Corridor Compatibility:** The Utilities anticipate the Corridor Certificate will be approved in May 2008.
2. **Route Permit Application:** The route permit application is included herein.
3. **Route Permit:** The Utilities anticipate the Route Permit will be approved concurrent with the Corridor Certificate in May 2008. It is critical for the Utilities to receive the Route Permit and Corridor Certificate as soon as possible, as completing this step will allow the Utilities to move forward with other commitments associated with the project, including ordering long-lead time equipment.
4. **Right-of-Way Acquisition:** The Utilities are responsible for all right-of-way acquisition and are in the process of obtaining the necessary easements from landowners. The Utilities have secured

survey permission for the proposed route and has begun securing options for easements of the route. The land acquisition is expected to be complete by the end of May 2008.

5. **Equipment Procurement, Manufacture and Delivery:** The Utilities will order the transmission and substation components as soon as practicable. Once the components have been ordered, delivery is anticipated to occur to allow completed construction in November 2008.
6. **Construction:** If the project proceeds in 2008, project construction is expected to begin in June 2008, subject to road restrictions and weather. The construction will take approximately four months to complete.
7. **Test and Operations:** The Utilities expect system testing will occur in October 2008.
8. **In-Service Date:** The expected in-service date will be November 2008.

No expansions or additions are anticipated at this time for the project.

2.0 NEED FOR FACILITY

2.1 NEEDS ANALYSIS

Several wind developers are planning to build wind generation facilities in the Barnes, Griggs, and Steele county area of east central North Dakota. Currently, FPL Energy and M-Power LLC have already notified the North Dakota Public Service Commission of their intent to build. Their projects will require PSC approval. Other developers also are considering this area of the state because of its rich wind resource. The generation outlet is needed to accommodate the electricity these projects would produce.

There is value of these wind energy projects to the Utilities because of their desire to get more energy from renewable resources. The Utilities are committed to economically meeting the North Dakota Renewable Energy Objective of 10% and the Minnesota Renewable Energy Standard of 25% by 2025. As well Otter Tail Power filed a supplement to the 2005 Integrated Resource Plan that economically selected an additional 260 MW of renewable energy by 2013. Otter Tail Power has been looking at PPAs for and partial ownership in the proposed wind generation projects to meet the 260 MW plan. Minnkota's current Integrated Resource Plan does not include any wind generation, but Minnkota's commitment to meet the renewable standards allows Minnkota to economically seek out 300 MW of renewable generation. This generation outlet helps the Utilities meet these goals by providing a method to efficiently deliver 400 MW of wind generated energy.

The Utilities elected to propose a 230-kV line with a larger conductor than any other 230-kV line that the Utilities own as it optimizes the efficiency with which the project can deliver the proposed power to the point of interconnection. The 230-kV line also allows the Utilities to tie directly into Minnkota's 230-kV facilities at the Maple River Substation which will enable the delivery of energy to the Utilities customers.

2.2 ALTERNATIVES

There was a rigorous selection process performed resulting in a business and technical decision for this line to be 230-kV with 1272(Bittern) kcmil Aluminum Core Steel Reinforced (ACSR). This conductor size is larger than any other 230-kV line on the Utilities transmission systems. The wind energy generation proposals received by the Utilities indicate a total of 400 MW of wind generation will be delivered into the Maple River substation. The Utilities focused on providing efficient delivery of electricity from these proposed wind generation facilities. The analysis determined that 230-kV was the minimum voltage that would deliver the 400 MW of wind resources. The Utilities then considered 345-kV and 230-kV conductor options. Table 5 provides an overview of the conductor options considered at each voltage level

Table 5
Alternative Conductor and Voltage Options Considered

Voltage	Conductor Type			
	954 ACSR	1272ACSR	1590 ACSR	Bundled -1272ACSR
230kV	X	X	X	X
345kV	N/A	N/A	N/A	X

For each of the conductor and voltage options evaluated, the following selection criteria were applied:

1.) The line capacity must be able to transfer 400 MW of wind generation.
2.) The voltage and conductor selected for the line should maximize the investment and minimize the line losses to be the most economical line given capacity and loss considerations.
3.) The design of the line must not degrade electric system performance (not become the regions largest single contingency or approach that level).
4.) The line should be sized to accommodate the maximum capability of injecting wind resources to the Maple River substation.

Based on the above criteria, the proposed voltage and conductor were selected based on the following determinations for each option:

2.2.1 230-kV Analysis

The analysis of the 230-kV option for each conductor type, and the Utilities findings, are summarized in the bullets below:

- 954ACSR – The capacity of the conductor was marginal in terms of carrying the required amount of capacity. Furthermore, the losses on the line were so great that this conductor did not prove to be a good selection.

- 1272ACSR – This conductor became the base case conductor to compare versus all other alternatives. This was a common conductor size that could readily handle the 400 MW of electric generation; provide for improved loss savings over smaller conductor alternatives, ensure reliable operation of the electrical system, and was the conductor size that allowed for optimization of capital cost (expense) vs. loss savings.

- 1590ACSR – This conductor provided more capacity for the line than needed for the anticipated 400 MW of generation. This conductor size also did not result in enough loss savings (over 1272 ACSR) to justify selection of this conductor. The added cost of this larger conductor could not be supported by the increased loss savings. Furthermore, the capacity of this larger

conductor could not be fully utilized due to other electrical performance issues associated with voltage stability limits (i.e. power transferability).

- Bundled 1272ACSR – This conductor provides greater power flow capability and reduces line losses. However, the bundled conductor construction increases the cost of the project by about 30% (over 1272ACSR) due to the second conductor's direct expense and the additional structure strength required to support the second conductor and the associated weather related loading conditions. Loss savings with this conductor size were not enough to support the additional capital cost for constructing a line with this configuration.

2.2.2 345-kV Analysis

In considering 345-kV construction it is important to realize that operating a line at this voltage level requires that the line be constructed with two (bundled) conductors to minimize the effect of corona breakdown on the line hardware. The utilities considered building the line capable of eventual operation at 345-kV, but initially operated at 230-kV. Operating at the lower voltage initially would allow the installation of a single conductor until the line voltage was converted to 345-kV, when a second conductor would have to be installed. However, the line would have to be removed from service in order to reasonably add the second conductor. Given that this line will be a generation outlet line this option did not seem reasonable from a cost or energy perspective. The need to build the 345kV line with a bundled conductor meant that the cost to construct a line at 345-kV over 230-kV is approximately 140 percent greater. Additionally, the wider phase to phase spacing of a 345-kV line design/operated at 230-kV will raise the transfer impedance (an electrical characteristic) that will degrade performance. Another cost adder with 345-kV operation of this line is that additional 345/230-kV transformer capacity would be needed at Maple River if this line were to be terminated at 345-kV at the Maple River substation. The addition of another 345/230-kV transformer at Maple River will add significant costs to the project and yet another reason for discounting the 345-kV option.

After considering these voltage and conductor options carefully the analysis found that the 230-kV 1272ACSR option had enough capacity, helped ensure stability of the electric system, provided the best loss savings, and was the most economical to serve the currently proposed wind energy projects, while also providing capacity for additional capacity if needed at a future date. Therefore, the 230-kV 1272 (Bittern) ACSR configuration was as the correct configuration for this generation outlet.

2.3 TEN-YEAR PLAN

The Utilities will file an update to its Ten-Year Plan with the North Dakota PSC by July 2008. This line was not included in the Ten-Year-Plan since this opportunity became known after they filed their last Ten-Year-Plan.

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3.0 TRANSMISSION FACILITY CORRIDOR AND ROUTE CRITERIA

The Utilities evaluated a study area to determine the best locations for the 230-kV transmission line corridor and route. The proposed corridor was identified as the optimal location from an environmental, wind resources and economic perspective (figure 2). Since the purpose of the line is to transmit energy from the proposed wind generation facilities in Barnes, Griggs, and Steele counties to the Maple River substation, the transmission line must interconnect into the Maple River substation and must terminate in the vicinity of the proposed wind generation facilities. The corridor encompasses an area that has a width of 10 percent or more of the length of the transmission line, which begins near the midpoint of proposed wind generation facilities west of Pillsbury, North Dakota, and ends at the Maple River substation approximately 56.6 miles to the southeast. The proposed corridor and route selection has included an inventory and suitability analysis of criteria listed in NDAC 69-06-08-02, including exclusion and avoidance area criteria; selection criteria that relate to minimizing potential land use and environmental impacts; policy criteria that relate to maximizing public benefits; and design and construction limitations. The Utilities also included economic considerations. Based on this inventory and analysis, none of the exclusion and avoidance criteria identified in the corridor encompass greater than 50 percent of the corridor width. The specific criteria and considerations made by the Utilities for this project are outlined in the following subsections.

3.1.1 Exclusion Areas

Per Section 69-06-08-02-1, the following geographical areas (Table 6) shall be excluded in the consideration of a route for a transmission facility, and shall include a buffer zone of reasonable width to protect the integrity of the area. Exclusion areas are mapped for the corridor and route in figures 2 and 3.

Table 6
Exclusion Areas

Geographic Area	Present within Project Vicinity?	Proposed Buffer		Section Addressed
		Corridor	Route	
Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas	None	None	None	5.7; 5.8; 5.14
Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves	None	None	None	5.7; 5.8
County parks and recreational areas; municipal parks; and parks owned or administered by other governmental subdivisions	Present (Bremer Lake Park within Erie Dam WMA)	No impacts are anticipated and no buffer is proposed.	None	5.8
Areas critical to the life stages of threatened or endangered species	None	No areas critical to threatened and endangered species have been identified in the corridor.	No areas critical to threatened and endangered species have been identified in the route.	5.16
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged	Potentially Present	There are plant species of concern, animal species of concern, and one significant ecological community identified in the study area. Habitat surveys for this community and wetland delineation will be completed prior to construction.	No plant species or animal species of concern have been identified along the route. The route may pass through potentially sensitive ecological wetland communities. Habitat surveys for this community and wetland delineation will be completed prior to construction.	5.16

3.1.2 Avoidance Areas

Per Section 69-06-08-02-2, the following geographical areas (Table 7) 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, proposed management of adverse impacts; orderly siting

of facilities; system reliability and integrity; efficient use of resources; and alternative routes. Avoidance areas are mapped for the corridor and route in figures 2 and 3.

Table 7
Avoidance Areas

Avoidance Areas	Present within Project Vicinity?	Proposed Buffer		Section Addressed
		Corridor	Route	
Designated or registered national: historic districts; wildlife areas; wild, scenic or recreational rivers; wildlife refuges; and grasslands	Present (One WPA approximately 1.0 miles west of the route).	No buffer is proposed as no impacts are anticipated.	None	5.7; 5.12; 5.15
Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests, forest management lands; and grasslands	Present (Erie Dam WMA approximately 0.5 miles north of the route)	No buffer is proposed as no impacts are anticipated	None	5.12; 5.14
Historical resources which are not specifically designated as exclusion or avoidance areas	None identified to date	No historical resources that were within the proposed corridor were on record with the North Dakota State Historic Preservation Office (SHPO). In consultation with the SHPO, a professional archaeologist would establish buffer appropriate to resources discovered during the Class III Survey.	No historical resources that were along the proposed route were on record with the SHPO. In consultation with the SHPO, a professional archaeologist would establish a buffer appropriate to resources discovered during the Class III Survey.	5.7
Areas that are geologically unstable	None	None	None	5.11
Within 500 feet of a residence, school, or place of business	Present (Two residences)	The Utilities have made arrangements to purchase or obtain waivers from each residence.	The Utilities have made arrangements to purchase or obtain waivers from each residence.	5.9
Reservoirs and municipal water supplies	None	None	None	5.11
Water sources for organized rural water districts	None	None	None	5.11

Avoidance Areas	Present within Project Vicinity?	Proposed Buffer		Section Addressed
		Corridor	Route	
Irrigated land. This criterion shall not apply to an underground transmission facility.	Present (There are several active irrigation permits in the corridor).	None. Otter Tail Power will generally avoid parcels of land with active irrigation. No buffers have been established and no conflicts are anticipated.	None. The route pass adjacent to two parcels with active irrigation permits and one parcel with a pending application for an irrigation permit. Otter Tail Power will avoid impacting these by working with the operator to route north of the existing and proposed irrigated areas. No buffer has been established and no conflicts are anticipated.	5.9
Areas of recreational significance which are not designated as exclusion areas	Present (Multi-use trails and snowmobile trails)	None. Access to and use of these trails will not be impacted by the transmission line. No buffers have been established.	None. Structures will not be located within any trails and access to and use of these trails will not be impacted by the transmission line. No buffers have been established	5.8

3.1.3 Selection Criteria

Per Section 69-06-08-02-3, a corridor or route shall be designated only when it is demonstrated to the Commission by the applicant that any significant adverse effects resulting 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 (Table 8). Figures 9 to 17 identify the selection criteria for the project as well as other related resources.

Table 8
Selection Criteria

Selection Criteria	Potential Adverse Effects		Section Addressed
The impact upon agriculture:			
	Corridor	Route	
Agricultural production	Facility structures proposed will permanently impact approximately 100 ft^2 of land each due to pole placement for mono-poles and 300 ft^2 for H-frame structures. Less than 0.1 percent of the yearly production of the top five commodities will be impacted for the corridor.	Approximately 1.4 acres of land will be permanently impacted due to facility structure placement along the route and approximately 3.0 acres of land will be permanently impacted by the new substation. Less than 0.1 percent of the yearly production of the top five commodities will be impacted.	5.9
Family farms and ranches	Land area lost to the construction of the transmission line structures will have a minimal adverse effect to family farms. No family farms will be displaced due to construction in the corridor.	Land area lost to the construction of the transmission line structures will have a minimal adverse effect to family farms. No family farms will be displaced due to construction of the route.	5.9
Land which the owner demonstrates has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation	Where impacts are expected, no owner has expressed concerns related to economically suitable irrigation on their land.	Where impacts are expected, no owner has expressed concerns related to economically suitable irrigation on their land.	5.9
Surface drainage patterns and ground water flow patterns	No impacts to surface drainage patterns or groundwater flow patterns are anticipated.	No impacts to surface drainage patterns or groundwater flow patterns are anticipated.	5.11, 5.12
The impact upon:			
Noise sensitive land uses	The noise sensitive land uses within the corridor are the residences near the transmission line. There are 274 occupied residences within the corridor. No impacts to noise sensitive land uses are anticipated.	Noise impacts are nominal. The nearest sensitive receptor to the proposed route is approximately 550 feet. No impacts to noise sensitive land uses are anticipated.	5.5

Selection Criteria	Potential Adverse Effects		Section Addressed
The visual effect on the adjacent area	The transmission line will be visible to landowners and residents who live near the line. Otter Tail Power will minimize visual impacts to the extent practicable.	Visual impacts will be most evident to landowners and residents in close proximity to the route and drivers traveling along adjacent roadways. Otter Tail Power will minimize impacts by utilizing the existing transmission line corridor and will line up the new route structures with the existing structures to the extent practicable. Structures will also avoid sensitive areas to the extent practicable.	5.6
Extractive and storage resources	No impacts are anticipated to extractive or storage resources.	No impacts are anticipated to extractive or storage resources.	5.11
Wetlands, woodlands, and wooded areas	Wetland resources will be avoided to the extent practicable. Otter Tail Power will utilize line designs to avoid and minimize impacts to wetlands in the corridor. Woodlands are primarily associated with homes in the form of windbreaks and at the river crossings. If impacts to wetlands and woodlands cannot be avoided, options to minimize impacts will be considered and mitigation will be proposed consistent with regulatory requirements.	An initial review of proposed route relative to National Wetland Inventory data and recent aerial photography indicates that wetlands can be spanned using the proposed transmission line design. The Utilities will delineate wetland boundaries as soon as possible in the spring, and plans to finalize pole placement and structure types needed to avoid wetlands at that time. In the event a wetland is delineated that is too large to span and is within USACE jurisdiction, The Utilities may seek a minor route variation to avoid the wetland, or will obtain coverage and mitigate impacts for pole placement within the wetland as authorized by the USACE and North Dakota Department of Health under Nationwide Permit 12. Approximately 4 acres of woodlands and windbreaks will be crossed by the right-of-way. Trees and shrubs will be replaced at a ratio of 2:1 as necessary and will be monitored for survival for five years.	5.9, 5.13
Radio and television reception and other communication or electronic control facilities	No impact to radio and television reception or other communication or electronic control facilities is anticipated.	No impact to radio and television reception or other communication or electronic control facilities is anticipated due to the construction of the line in the proposed location.	5.3

Selection Criteria	Potential Adverse Effects		Section Addressed
Human health and safety	Mitigation measures will be implemented as discussed in section 5.4.3, and if maintenance schedules are met, no impacts to human health and safety are anticipated.	Mitigation measures will be implemented as discussed in section 5.4.3, and if maintenance schedules are met, no impacts to human health and safety are anticipated.	5.4
Animal health and safety	No impacts to livestock are anticipated from the operation of the transmission line. Raptors, waterfowl and other bird species may be affected by the construction and placement of the transmission lines. Avian collisions are a possibility after the completion of the transmission line. Waterfowl are typically more susceptible to transmission line collision, especially if the line is placed between agricultural fields that serve as feeding areas, or between wetlands and open water, which serve as resting areas. Generally, the most difficult part of the structure for the bird to see is the shield wire. Mitigation measures will minimize these impacts.	No impacts to livestock are anticipated from the operation of the transmission line Raptors, waterfowl and other bird species may be affected by the construction and placement of the transmission lines. Avian collisions are a possibility after the completion of the transmission line. Waterfowl are typically more susceptible to transmission line collision, especially if the line is placed between agricultural fields that serve as feeding areas, or between wetlands and open water, which serve as resting areas. Generally, the most difficult part of the structure for the bird to see is the shield wire. Mitigation measures, as outlined in section 5.15.3, will minimize these impacts.	5.9, 5.15
Plant life	The land is primarily agricultural in nature. Only the areas where the structures will be placed will permanently impact plant life. Other areas where temporary impacts may occur will be restored.	Approximately 1.4 acres of land will be permanently impacted from the transmission line structure placement for the route. Approximately 3.0 acres of land will be permanently impacted from placement of the new substation. The land is primarily agricultural in nature. Temporary impacts will be restored.	5.9, 5.14

3.1.4 Policy Criteria

Per Section 69-06-08-02-4, the Commission may give preference to an applicant that will maximize benefits that result from the adoption of the following policies and practices, and in a proper case may require the adoption of such policies and practices. (Table 9)

Table 9
Policy Criteria

Policy Criteria	Suitable Policy or Practice of Applicant	Section Addressed
Location and design	The Utilities policy is to locate and design the proposed generation outlet to minimize environmental impacts and utilize existing corridors.	1.1
Training and utilization of available labor in this state for the general and specialized skills required	The Utilities will use local labor to the extent practicable.	5.1
Economies of construction and operation	The Utilities will utilize local contractors to the extent practicable.	5.1
Use of citizen coordinating committees	The Utilities will work with landowners of properties for the project in siting the transmission line.	7.0
A commitment of a portion of the transmitted product for use in this state	Energy transmitted by the project will be used by the Utilities for its North Dakota customers.	1.2, 4.2
Labor relations	No labor relations will be affected.	5.1
The coordination of facilities	The Utilities are coordinating with landowners and wind developers to coordinate the location of the facilities to maximize benefits and minimize duplication of efforts.	1.2.1, 1.2.2
Monitoring of impacts	The Utilities will monitor that Best Management Practices (BMPs) are utilized during construction to minimize environmental impacts and will monitor construction compliance with the commitments made in this application and applicable permit conditions, including the PSC order. The Utilities will monitor tree and shrub replacement for five years, if needed.	5.10, 5.14, 5.15
Utilization of existing and proposed rights of way and corridors	One of the primary goals in locating the proposed route was to maximize use of existing transmission, pipeline, railroad, and roadway corridors. The proposed 230-kV transmission line location is consistent with this policy and is the best location when considering the factors identified by the Commission and the Utilities policies and project purpose and need.	1.2.1, 1.2.2, 3.1.5
Other existing or proposed transmission facilities	The corridor included existing transmission, pipeline and railroads and the proposed route parallels these facilities to the extent practical.	1.2.1, 1.2.2, 3.1.5

Otter Tail Power Company's practices and policies are guided by its mission, which is:

> To produce and deliver electricity as reliably, economically, and environmentally responsibly as possible to the balanced benefit of customers, shareholders, and employees and to improve the quality of life in the areas in which we do business.

The company's long-standing commitment to environmental stewardship includes energy conservation, demand-side management programs, renewable energy development, power plant efficiency improvements, and participation in industry research.

Otter Tail Power Company's plans for a balanced mix of energy generation include accelerating the development of wind power and other renewable resources. This project will further the development of wind power in central North Dakota. See the *2006 Stewardship Report* in appendix B for a complete review of Otter Tail Power Company's environmental, social, and economic stewardship.

Minnkota's policy #5-LA-1 clarifies its position as relates to environmental laws and regulations, and states that:

> *It is a policy of Minnkota Power Cooperative to obey all laws and comply with all regulations promulgated pursuant to those laws affecting and governing the operation of Minnkota.*
>
> *This is especially emphasized in the area of environmental laws and regulations. Each employee must be aware that there may be environmental responsibilities and requirements relating to their job at Minnkota. Each employee must follow rules they are instructed to observe relating to compliance with these legal responsibilities and requirements.*

The Utilities' environmental policies are consistent with the PSC policy criteria outlined in NDAC section 69-06-08-02-4.

3.1.5 Design and Construction Limitations

Design and construction limitations associated with the project are primarily associated with the location of the transmission line. The points of termination largely dictate the location of the transmission line. Overall, the line must be constructed within a reasonable distance from the proposed wind generating facilities and must connect to the Maple River substation. The Utilities are paralleling existing corridors and rights-of-way where practicable. Since the purpose of the generation outlet is to transmit energy from the proposed wind generating facilities to the transmission system, the transmission line will cross several townships as noted in Table 4. The proposed route is the most direct route while minimizing impacts to the criteria identified in Section 69-06-08-02.

For this particular project, the Utilities will attempt to span all wetlands along the route. An initial review of the corridor, including review of recent aerial photographs and U.S. Fish and Wildlife (USFWS) National Wetlands Inventory (NWI) data, indicate that wetlands can be avoided by pole placement and spanning. Wetlands over 1,000 feet in length, which is about the maximum span of the proposed transmission line design, will be avoided in order to avoid placing transmission structures in wetlands.

The USFWS administers wetland easements on private property as part of their National Wildlife Refuge System. There are limitations to construction on these lands and direct impacts to wetlands within

USFWS easements will result in the need for a compatibility assessment by local USFWS staff. The process considers the magnitude of the impact, the type or quality of the habitat that is impacted, and the feasibility of avoiding the impact. If compatibility is found, a right-of-way permit will be issued for the impact. For this project, the Utilities sought to avoid USFWS easement lands. Figures 2 and 3 identify the USFWS wetland easements and WPAs within the corridor and vicinity.

Finally, the Utilities have sought to use mono-pole single circuit 230-kV steel davit arm steel structures to minimize impacts to landowners. The mono-pole and H-frame structures have design limitations. Following geotechnical exploration, it may become necessary to utilize special structures to avoid sensitive environmental features or different materials such as concrete footings to accommodate for soil features or other design limitations.

3.1.6 Economic Considerations

There are several economic considerations in deciding where the generation outlet should be routed. Overall, minimizing the distance to the wind generating facilities decreases the cost to construct the generation outlet and transmission line due to less material and right-of-way needed. Additionally, as explained in the alternatives considered above, this line design is the most economical and efficient to deliver 400 MW of electricity.

The steel structures proposed for the majority of the route also help to decrease the cost of construction. The mono-pole design will create the least amount of environmental impacts. Also, landowners along the route expressed a preference to this design as opposed to the typical “H” frame design.

Another consideration in decreasing cost is in minimizing the number of corner structures required for the transmission line. Corner structures increase the cost of projects since special structures and engineering are typically required. The Utilities attempted to minimize these economic factors while considering exclusion areas, avoidance areas, selection criteria, policy criteria, and other factors.

4.0 ENGINEERING AND OPERATIONAL DESIGN

4.1 PREFERRED ROUTE DESCRIPTION

The proposed route centerline for the transmission line will generally follow existing transmission line, pipeline, railroad and roadway facilities between Pillsbury and Fargo, North Dakota. The proposed transmission line will begin at the existing Maple River substation on the north side of Fargo, North Dakota, and will initially parallel the west side of an existing high voltage transmission line corridor due north for about 1.5 miles. Then, the proposed route diverts away from the transmission line to follow a new (Greenfield) route that initially heads due west for about one mile from the existing high voltage corridor and then heads due north for about 0.75 mile to join and parallel an existing Minnkota 345-kV transmission line that crosses the Sheyenne River. This Greenfield route was selected in part to avoid a number of residences to the north and east of the Greenfield route area, and also to connect with the existing transmission line that crosses the Sheyenne River. Once joining the Minnkota corridor, the new facilities will be collocated with the existing Minnkota corridor for about one mile to the west by replacing the existing Minnkota H-frame structures in this area with two new steel mono-pole structures (one pole for the existing facilities and one pole for the new facilities). Upon crossing the Sheyenne River, the proposed transmission line will continue to follow the existing 345-kV transmission line westward on the south side of the existing transmission facilities for about 7.5 miles. The proposed route will then turn due north, passing over the existing Minnkota transmission facilities, to follow the eastern edge of an abandoned township road for about two miles, at which time the route will reach an existing Cenex pipeline that is generally located adjacent to and about 100 feet south of a BNSF railroad.

Upon reaching the pipeline and railroad corridor, the transmission line will travel in a northwest direction about 75 feet offset on the south side of the pipeline for about 14.5 miles. At that point, the Cenex pipeline diverts due west from the railroad corridor to follow the south side of an existing road for about eight miles. The proposed route will follow the pipeline away from the railroad at that point, and will continue following the south side of the existing pipeline route, for about two miles. Then, as the pipeline continues in a due westerly alignment on the south side of the road, the propose route will divert due south and then due west to parallel the pipeline but offset about one-quarter mile to the south for about one mile to the west to avoid occupied residences within 500 feet of the south side of the pipeline in that area. Then, to avoid irrigated lands and facilities on the south side of the pipeline, the proposed route will turn to head due north to follow the west side of an existing road, and will pass over the Cenex pipeline and road until reaching a point about one-half mile north of the pipeline and roadway corridor. Then, the proposed route will turn to head due west and parallel the pipeline and roadway corridor (offset by about one-half mile) for about the next 5.5 miles. At that point, the proposed route will cross another northwest-southeast oriented BNSF railroad and the Cenex pipeline which had also begun to follow the railroad after crossing it one-half mile to the south and leaving the roadway corridor.

After reaching the west side of the Cenex pipeline and BNSF corridor, the proposed route then turns northwesterly to parallel the west side of the pipeline/railroad corridor for about 3.5 miles to near an

interchange of several railroads about 1.5 miles south of Page, North Dakota. At that point, the proposed route diverts away from the BNSF railroad, as does the existing pipeline, to avoid the railroad interchange area and occupied residences, to begin following another BNSF railroad that heads west-northwesterly toward and through Pillsbury, North Dakota. The proposed route then follows on the south side of the pipeline, which is south of the railroad, for about 10.2 miles to a point that is about one mile from Pillsbury, North Dakota. At that point, the proposed route turns due north to avoid crossing FWS easement lands, and will go over the pipeline and the railroad to parallel the east side of a township road for about one mile. Then, the proposed route crosses to the north side of an east-west oriented road and immediately turns due west to parallel the north side of the road for about 2.2 miles, which passes immediately north of Pillsbury, North Dakota, until reaching the BNSF railroad again. Upon reaching the railroad, the proposed route turns west-northwesterly again to parallel the north side of the railroad for about one-half mile before turning southward to cross over the railroad and terminate at the proposed new substation location. The route is depicted in figures 4 and 5.

4.2 DESCRIPTION OF PROPOSED FACILITY

The proposed facility will be used to transmit energy from wind projects located near Lake Astabula in Griggs, Steele, and Barnes counties, North Dakota to markets served through the Maple River substation near Fargo, North Dakota. The project will consist of approximately 56.6 miles of 230-kV transmission line and a 230-kV switching substation. This infrastructure is necessary so the energy can be transmitted from the wind generating facilities.

4.2.1 Transmission Structures and Right-of-Way Design

A design data report is attached as appendix C. The Utilities considered several different voltage and conductor choices before selection of this option. Alternate designs were eliminated due to reduced performance or higher costs. The selected line design provides the most economic short and long term solution to the generation output that is anticipated connected to the line.

4.2.1.1 Transmission Structures

The Utilities are proposing to construct the line as a single circuit 230-kV line. The majority of the structures will be directly embedded mono-pole steel structures, except that H-frame structures will be used on much of the east end of the project where the route is located adjacent to existing 345-kV transmission line facilities. H-frame structures will be used to place the new structures in line with the existing 345-kV structures, and may also be used where increased span lengths may be needed (e.g., to span wetlands). The mono-pole steel structures will be approximately 90-130 feet in height with an average span between each structure of about 600 feet, and a maximum span of up to 900 feet under some circumstances. Angle structures will be self supporting and more fully determined once design is complete. The H-frame structures will be approximately 70 feet in height with an average span of about 900 feet and a maximum span of approximately 1,000 feet under some circumstances. Final design and geotechnical investigations may warrant the use of special structures to avoid sensitive areas, reasonable landowner desires, or accommodate special engineering circumstances. Structure specifications will be

submitted to the PSC once the plan and profile drawings have been completed, and at least 10 days prior to construction. Figures 6 through 8 depict the typical structures that will be used for the transmission line.

The conductor will be 1272 kcmil ACSR. The shield wires, also known as lightning protection wires, will be Optical Guy Wire (OPGW) steel with 24 strands of fiber optics. On H-frame structures the Utilities will also use 3/8-inch extra hard steel (EHS). The proposed transmission line is intended to carry 230-kV, alternating current. The maximum capacity of the line is 680 MW, but it will most efficiently operate at 400 MW.

The proposed transmission line will be designed to meet or surpass all relevant state codes, National Electric Safety Code (NESC), Rural Utilities Service (RUS), Avian Power Line Interaction Committee (APLIC) raptor-safe design standards, and other standards the Utilities have adopted. Appropriate safety standards will be met for construction and will be followed during and after construction.

4.2.1.2 Right-of-Way Design

The approximately 56.6-mile-long 230-kV transmission line will parallel an existing 345-kV transmission line, Cenex pipeline, BNSF railroad, and/or roadways for the bulk of the route (87 percent). The right-of-way required for the new line is planned to be 125 feet regardless of the type of structure used. The line will be located within the 125-foot-wide right-of-way, but the location within that strip will be dependent on terrain, the presence of other existing facilities and rights of way, and landowner concerns. Where adjacent to existing facilities, the new transmission line structures generally will be offset about 75 to 125 feet.

The Utilities have been in contact with the majority of the landowners along this route. The Utilities have enclosed shaded maps that display the survey permission that has been received for the proposed route (appendix D).

4.2.2 Right-of-Way Preparation, Construction, Restoration and Maintenance

4.2.2.1 Right-of-Way Preparation

The proposed route crosses areas that are primarily agricultural land. There are some areas where there is tree and shrub growth that may require right-of-way clearing. Where safety requirements permit, trees and low growing shrubs will remain (generally less than 15 feet). Significant amounts of grading are not anticipated for preparation of the transmission right-of-way.

4.2.2.2 Transmission Construction Procedures

Construction of the transmission line will begin once all approvals are obtained and easement acquisition is complete. A detailed construction schedule will be developed based upon crew availability, weather conditions, and any other restrictions placed on certain areas for minimizing impacts from construction.

The construction will be designed for installation at existing grade for the route. No extensive grading or leveling is anticipated at this time. Once construction is completed, graded areas will be restored to original contours to the extent practicable.

Structures will be delivered to either the staked location or a project storage yard. If the structures are delivered to the location where they will be installed, they will be placed on the right-of-way out of the clear zone of any adjacent roadways or designated pathways. Insulators and other hardware will be attached while the structure is on the ground. After the right-of-way is prepared, structures will be assembled and erected at the structure site using a crane or similar heavy-duty equipment. Each pole will be directly imbedded and will require a hole dug 11 to 15 feet deep and 5 to 6 feet in diameter. The poles will be imbedded into the ground and backfilled with soil or crushed rock. For angle structures, dead end structures, or potentially some structures in poor or wet soil conditions there will be a requirement to install a specifically engineered concrete foundation. This foundation will require be approximately nine feet in diameter and approximately 35 feet deep.

Most of the construction activity would be limited to the area immediately around each structure. Little additional ground disturbance is necessary at the structure sites. The total area temporarily disturbed in the vicinity of each structure is expected to be confined to an area of about 100 feet wide by 100 feet long (10,000 ft^2). No permanent access roads will be constructed for the project; however, temporary construction access roads will be needed to access pole locations. Temporary construction access roads will utilize existing public and private roads where possible, and will be up to 20 feet wide and located through disturbed uplands (e.g., farmed land) where no existing roads provide access.

Once the structures have been erected, conductors will be installed by establishing stringing setup areas within the right-of-way. These areas are usually established every two miles along the route. Conductor stringing operations will require brief access to each structure to secure the conductor wire to the insulators or to install shield wire clamps once final sag is established. Stringing equipment generally consists of wire pullers, tensioners, conductor reels, shield wire reels and sheave blocks. Stringing operations involve 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 as needed over existing distribution or communication lines, streets, roads, highways or other obstructions, after any necessary notifications are made and permits obtained. This ensures that conductors will not obstruct traffic or contact existing energized conductors or other cables.

4.2.2.3 Restoration Procedures

During construction, crews will attempt to limit ground disturbance wherever possible and will employ appropriate erosion control measures. Upon completion of construction activities, landowners will be contacted to determine if any additional restoration due to construction is necessary. Disturbed areas will be restored to their original condition to the maximum extent practicable and as negotiated with the landowner or required by regulatory agencies. Post-construction reclamation activities include removing

and disposing of debris, dismantling all temporary facilities (including staging and lay down areas), leveling or filling tire ruts, and reseeding non-cultivated areas disturbed by construction activities with vegetation similar to that which was removed.

Erosion control measures will be implemented as necessary to minimize runoff during construction. Specific measures will be determined once final design of the route is complete, and a field review is made to determine any areas of concern. Erosion control measures such as silt fencing, straw bale fencing, mulching, seeding, or mesh fabric overlay would be installed when and where appropriate. Access routes to structure locations will be reviewed prior to the mobilization of equipment so erosion concerns can be avoided or minimized. Construction crews exercise caution when equipment is within 50 feet of streams and rivers and will not drive equipment through streams or rivers that the transmission line crosses.

4.2.2.4 Maintenance Procedures

The Utilities will periodically use the right-of-way to perform inspections, to maintain equipment and to make repairs over the life of the line. The Utilities will also conduct routine maintenance to remove undesired vegetation that may interfere with the safe and reliable operation of the proposed line.

4.2.3 Easement/Right-of-Way Acquisition

The Utilities are currently in the process of securing easements. The Utilities have consulted with landowners to discuss the project and has secured approval to conduct necessary engineering surveys and soil investigations. The Utilities have also initiated right-of-way acquisition and are obtaining options to purchase right-of-way for the proposed route. Once all right-of-way has been obtained, and during the construction phase, individual property owners will be advised of construction schedules, needed access to the site, and any vegetation clearing required for the project. The right-of-way will be cleared of the amount of vegetation necessary to construct, operate and maintain the proposed transmission line, and landowners will be compensated for damages.

Where possible, staging and lay down areas will be located within the right-of-way and limited to previously disturbed or developed areas. When additional property is temporarily required for construction, temporary easements may be obtained from landowners for the duration of construction. These temporary easements will be limited to special construction access needs or additional staging or lay down areas required outside of the proposed right-of-way.

4.2.4 Associated Facilities

The other facility associated with the transmission line construction is a new 230-kV substation that will be located in the SW ¼ of Section 7, Township 143N, Range 56W, about two miles west of Pillsbury, North Dakota. The new substation will be a 230-kV switching substation and will facilitate the relaying of the wind-generated energy from more than one wind energy facility to Maple River substation along the new 230-kV transmission line. The new substation footprint, including the operations and maintenance buildings and fencing, will occupy approximately 3 acres within an approximately 60-acre

parcel of land that is held under a purchase agreement by Otter Tail Power. The design data report provides the general layout and design view the new project substation (appendix C).

The new substation will be an open air design that will constructed out of steel structures with aluminum bus conductor. The substation will consist of three 230-kV circuit breakers, the accommodation for three 230-kV line switches, associated arresters and protective relaying devices. The site will also have a control house that will contain the system protection devices, a System Control and Data Acquisition (SCADA) system and a battery bank. Currently additional system studies are being performed to determine if other equipment such as reactors or capacitors will be needed to compensate for the different loading conditions of the line

As the new substation is currently proposed the site would accommodate three lines coming into the substation. However there would be an ability to expand the substation later if needed to accommodate future system requirements or other energy producers.

5.0 ENVIRONMENTAL ANALYSIS

This section provides a description of the environmental conditions that exist within the study area corridor and route. Conservative impact estimates associated with the proposed route assumed that the line will be approximately 56.6 miles in length, with both mono-pole and H-frame pole structures with an average of about 600- and 900-foot-long spans between structures, respectively. The approximate number of structures for a line of this length will be 408 mono-pole and 60 H-frame structures, respectively, based on the average spans. Each mono-pole structure is estimated to permanently impact approximately 100 ft^2 and the temporary impacts are estimated to be approximately 10,000 ft^2. Each H-frame structure is estimated to permanently impact approximately 300 ft^2 around each structure and the temporary impacts are estimated to be approximately 10,000 ft^2. The total permanent impact is estimated to be 1.4 acres and the total temporary impact is estimated to be 107.4 acres.

General information on land use and vegetation within the corridor were estimated using the Land Use and Land Cover (LULC) Digital Dataset from the U.S. Geologic Survey. Quantification of land use within the corridor were estimated using the corridor limits, whereas the land use impacts for the route were estimated using the proposed right-of-way. The right-of-way for the 230-kV transmission line is 125 feet wide, or about 62.5 feet on either side of the structure centerline. The transmission line is proposed to be placed about 75 to 125 feet from the centerline of the nearest existing transmission line structure, pipeline, railroad and roadway.

Consistent with the Utilities' stewardship policy (appendix B), the project has been designed to minimize the environmental impact of the proposed facility.

5.1 DEMOGRAPHICS

5.1.1 Description of Resources

The project is generally located within a sparsely populated rural area in northeastern North Dakota. There are no known plans for new residential developments or other new construction within the corridor or route; however, it is not unreasonable to expect that some new developments may occur, particularly in the vicinity of Fargo and the open land near the Maple River substation. Information on demographics and housing for this section was taken from North Dakota State Data Center and the 2000 U.S. Census and 2007 Census estimates.

The study area corridor encompasses portions of Cass, Barnes, and Steele Counties, including 25 townships in North Dakota (Table 3). Cass County had an estimated population of 132,525 in 2006 up from 130,455 in 2005. The population of Barnes County has decreased slightly to an estimated population of 10,995 in 2006, down from 11,006 in 2005. Steele County's population has also been decreasing to an estimated population of 1,943 in 2006 down from 2,016 in 2005 (U.S. Census Bureau, 2007). The median household income for Barnes County ($36,799) is less than the statewide average ($39,233), while Cass and Steele Counties ($44,531 and $39,697, respectively) have greater per capita

incomes than the statewide average. However, the percentage of persons below the poverty level in these counties is lower than the statewide average. Table 10 summarizes the population and economic characteristics within the corridor.

According to the 2000 U.S. Census, Agriculture is the largest industry employing residents of Barnes, Cass and Steele Counties (U.S. Census Bureau, 2000).

Table 10
Population and Economic Characteristics

Location	Population	Median Household Income	Percentage of Population Below Poverty Level
North Dakota	635,867	$39,233	10.8
Barnes County	10,995	$36,799	10.7
Cass County	132,525	$44,531	9.2
Steele County	1,943	$39,697	8.0

5.1.2 Impacts

5.1.2.1 Corridor

Short-term impacts to socioeconomic resources from the generation outlet will be relatively minor. Permanent agricultural land conversion associated with the transmission line structure placement and the new substation will constitute a small socioeconomic impact to those landowners with structures on their land. There is no indication that any minority or low-income population is concentrated in any one area of the corridor, or that the transmission line will be placed in an area occupied primarily by any minority group.

The construction of the transmission line and new substation will provide temporary increases to the total personal income of the area if local contractors are used. Additional personal income will also be generated by circulation and recirculation of dollars paid out by the applicants as business expenditures and state and local taxes. Labor relations will not be affected.

As noted in the previous section, the development of the project, which includes the transmission line and substation improvements, has strong potential to contribute to economic growth in the corridor and vicinity by providing an outlet for the proposed wind generation projects in the area.

5.1.2.2 Proposed Route

Based on a review of structure types and locations relative to existing land use, approximately 107.4 acres of agricultural land will be temporarily removed from production during transmission line pole construction, not including potential impacts due to temporary access. Permanent agricultural land

conversion associated with the project will be approximately 1.4 acres for the transmission line structures and 3.0 acres for the substation. Landowner compensation for crop damages will be negotiated during individual lease agreements. As stated above, agricultural areas surrounding transmission line structures generally will still be able to be farmed following construction of the project. Project construction will not cause impacts to other industries in the project area. There is no indication that any minority or low-income population is concentrated in any one area of the route, or that the transmission line or new substation will be placed in an area occupied primarily by any minority group.

5.1.3 Mitigation

5.1.3.1 Corridor

Socioeconomic impacts associated with the project will be primarily positive due to an influx of wages and expenditures made at local businesses during the project construction and an increase in the county's tax base from the operation of the transmission line. The Utilities will use local labor and contractors to the extent practicable. Impacts to landowners will be minimized to the extent practicable by establishing good lines of communication, negotiating easements that are at or above market rates, and maintaining landowner communications throughout the project.

5.1.3.2 Proposed Route

See section 5.1.3.1 above for mitigation associated with the proposed route.

5.2 LAND USE

5.2.1 Description of Resources

The study area corridor is located in Cass County, northeast Barnes County, and a small portion of southwest Steele County. Incorporated communities including Reiles Acres, Fargo, West Fargo, Amenia, Page, Pillsbury, and Luverne, and the unincorporated town of Prosper, are located within the six-mile-wide study area corridor. The generation outlet parallels the existing transmission, buried pipeline, railroad and roadways for the majority of its length.

Based on a review of aerial photographs LULC database information; USFWS and USGS database information; and a windshield survey of the corridor and route, the majority of the land area within the corridor and route is agricultural land (figure 13) used for crops and cattle grazing. Smaller portions of the land area are grasslands, wetlands and other minor uses (e.g., utilities, railroads, roads). Table 11 identifies current land use in the corridor and route based on the LULC database and land classification data from USFWS.

Table 11
Current Land Uses

Habitat	Transmission Corridor		Transmission Route	
	Acreage	Percent of Corridor	Acreage	Percent of Route
Cropland	186,297	81	628	73
Undisturbed Grassland (including CRP)	19,017	8	130	15
Native Grassland	3,975	2	10	1
Shrublands (upland and lowland)	1,316	1	8	1
Woodlands	2,900	1	4	<1
Open Water, Lake, Riparian	386	<1	<1	<1
Wetlands	9,827	4	33	4
Developed (Farmsteads, Roads, etc.)	5,829	3	43	5

The corridor is primarily used for agricultural purposes. Agricultural land use in the corridor includes approximately 81 percent cropland, and 8 percent undisturbed grasslands. Undisturbed grassland is previously disturbed or previously cropped upland that has been seeded back into some type of grass mixture, but is currently undisturbed. The undisturbed grassland is frequently enrolled in a USDA program, such as the Conservation Reserve Program (CRP). See section 5.9, Land Based Economies for more information on the CRP lands. This undisturbed status is often temporary in nature and after the contracts expire, it is possible that the land may become cropland again. Native grasslands comprise 1.7 percent of the corridor and are primarily used for grazing livestock. The native grasslands include remnant native prairie of various quality, dependent on grazing pressure and herbicide applications to control weed species. Approximately 4.5 percent of corridor is wetland, lake, open water, or riparian area. Woodlands are relatively uncommon and primarily associated with wind breaks, streams and current or former homesteads.

Along the proposed route, agricultural land use comprises 88 percent of the land use, including approximately 73 percent cropland and 15.2 percent undisturbed grasslands. Native grasslands occur along 1.2 percent of the route. The native grasslands may include remnant native prairie of various quality, dependent on grazing pressure and herbicide applications to control weed species. Four percent of the route crosses land that is wetland, lake, open water or riparian areas.

Unique land uses within the project area include four public airports and several small air strips/registered airports in and near the corridor (Table 12).[1] The Erie Dam WMA is located within the corridor but

[1] Some of the airports are outside of the six-mile corridor but are close enough to the proposed generation outlet that airport coordination is necessary. Therefore, these airports are considered for impacts to the project.

approximately one mile north of the proposed transmission line. The western end of the corridor includes a designated WPA managed by the USFWS. School trust lands are also present in the corridor. Two locations within the corridor are currently, or were previously, mined for aggregate resources. These resources are described in section 5.11.1. There is also a former landfill for the city of Pillsbury located on city land near the proposed new substation. Existing land uses are depicted on figures 10 through 13.

Zoning in the corridor is regulated by townships in Cass County, and by Barnes County in Barnes County, and generally supports the agricultural and residences associated with the agricultural lands in the corridor.

Table 12
Area Airports

Airport	Type	Outside Corridor	Within Corridor	Within Route
Arthur Airport	Public	Yes	No	No
Page Regional Airport	Public	No	Yes	No
West Fargo Municipal Airport	Public	No	Yes	No
Hector International Airport	Public	Yes	No	No
Jacob Gust	Private	No	Yes	No
Nelson Airport	Private	No	Yes	No
Peterson Airport	Private	No	Yes	No*
Punton Airport	Private	Yes	No	No
Schroeder Airport	Private	Yes	No	No
Smith Airport	Private	No	Yes	No*
Turner Field	Private	No	Yes	No
Vining Airport	Private	Yes	No	No
Wilcox Farm Airport	Private	Yes	No	No

*These airports are located just north of the proposed route.

5.2.2 Impacts

5.2.2.1 Corridor

Land use in the corridor is not expected to change as a result of construction of the proposed transmission line facilities. Land uses have already adapted to the various existing linear facilities, including transmission lines, Cenex pipeline, railroads and roadways, and are not expected to be noticeably impacted by construction of new transmission line facilities. The majority of the area under or adjacent to the generation outlet could still be used for agricultural practices and routing can generally avoid farm facilities and residences. Use of existing roads and railroads, nearby airports, and the operation of other facilities such as pipelines will not be disrupted. The development of the proposed transmission line will not displace any existing or planned industrial facilities. The project could result in the displacement of two residences. One residence is located directly adjacent to the existing high voltage transmission line crossing of the Sheyenne River, and the other is located southwest of Page, North Dakota.

5.2.2.2 Proposed Route

The route will parallel existing transmission line, Cenex pipeline, BNSF railroad and roadways for the majority of its length (87 percent). The majority of the land use impacted by the construction of the transmission line is used for agriculture. About 1.4 acres of agricultural land will be removed from production. An additional 3.0 acres of agricultural land will be converted to use by the proposed new substation. The substation will not impact the nearby closed landfill. Agricultural land use is abundant along the route and is not expected to be impacted by the generation outlet. The majority of this area will remain in agricultural use since the land under or adjacent to the line can still be used by the landowner. During construction of the route, additional areas may be temporarily disturbed for laydown areas. There are three public and three private airports that are close enough to the route that consultation with FAA is required.

5.2.3 Mitigation

5.2.3.1 Corridor

The Utilities will work closely with the landowners in finalizing transmission structure locations within the right-of-way and temporary access to structure locations in order to minimize land use disruptions to the extent possible. Disturbed areas will be returned as near as possible to original contours and non-agricultural areas reseeded with beneficial native vegetation. The Utilities have contacted FAA to study impacts and potential disruptions to the three airports that are near the corridor and will work to ensure that they are no disruptions to these airports. The report will be finalized between 45 and 60 days. The Utilities will work with the two potentially affected residences to either avoid the residence by 500 feet, purchase the residence, or get a signed waiver from the people owning the residence. To that end Otter Tail Power has entered into a purchase agreement for one of the residences. The Utilities will also work with owners of the private airstrips to ensure there are no conflicts with the transmission line.

5.2.3.2 Proposed Route

See section 5.2.3.1 above.

5.3 PUBLIC SERVICES

5.3.1 Description of Resources

Local Services

The project is located in rural eastern North Dakota. Within this area there are established transportation and utility networks that provide access and necessary services to the light industry, small cities, homesteads and farms existing in and near the corridor. The communities of Reiles Acres, Fargo, West Fargo, Amenia, Page, and Pillsbury, and the unincorporated town of Prosper, are located within the six-mile-wide study area corridor. Sanitary sewer, water, cable television, DSL, and telephone, are located in the corridor. Schools are located in several small communities just outside of the corridor and in Fargo and West Fargo. Emergency services, including volunteer fire departments, ambulance service, hospitals, and police are provided in the vicinity of the corridor. There are also local retail service facilities in communities within and surrounding the corridor. A summary of local services is provided in Table 13

Table 13
Services and Institutions in the Corridor

Institution	Name	Location	Within the Corridor*	Within the Route
Hospital	Innovis Health	Fargo, Cass County	No	No
Hospital	MeritCare Hospital	Fargo, Cass County	No	No
Hospital	Triumph Hospital	Fargo, Cass County	No	No
Hospital	Prairie St. John's	Fargo, Cass County	No	No
Hospital	Mercy Hospital of Valley City	Valley City, Barnes County	No	No
Rural Health Care Clinic	Cooperstown Medical Center	Cooperstown, Griggs County	No	No
Basic Care Facility	Prairie Villa	Arthur, Cass County	Yes	No
Basic Care Facility	Evergreens of Fargo	Multiple locations Fargo, Cass County	No	No

Institution	Name	Location	Within the Corridor*	Within the Route
Basic Care Facility	Waterford at Harwood Groves	Fargo, Cass County	No	No
Basic Care Facility	Edgewood Vist	Fargo, Cass County	No	No
Basic Care Facility	The Evangelical Lutheran Good Samaritan Society	Fargo, Cass County	No	No
Basic Care Facility	HI Soaring Eagle Ranch	Valley City, Barnes County	No	No
Basic Care Facility	Sheyenne Crossings - Prairie Square	West Fargo, Cass County	No	No
Ambulance Service	F-M Ambulance*	Cass County	Yes	Yes
Police	Fargo Police	Cass County	No	No
Police	West Fargo Police	Cass County	No	No
Police	Cass County* Sheriff'	Cass County	No	No
Police	Barnes* County Sheriff	Barnes County	No	No
Police	Steele* County Sheriff	Steele County	No	No
School	Page Elementary School	Cass County	Yes	No
School	Northern Cass Elementary	Hunter, Cass County	No	No
School	Northern Cass Middle School	Hunter, Cass County	No	No
School	Northern Cass High School	Hunter, Cass County	No	No
School	Maple Valley High School	Tower City, Cass County	No	No

Institution	Name	Location	Within the Corridor*	Within the Route
School	West Elementary School	Buffalo, Cass County	No	No
School	Oriska Elementary School	Oriska, Barnes County	No	No
School	Central Cass Elementary	Casselton, Cass County	No	No
School	Central Cass Middle School	Casselton, Cass County	No	No
School	Central Cass High School	Casselton, Cass County	No	No
School	Mapleton Elementary	Mapleton, Cass County	No	No

*While not located in the corridor, services are provided to individuals within the corridor or route.

Source: North Dakota Department of Health. 2007. Health Facilities.
Cass County Emergency Information Links. Cass County Emergency Department.
Cass County GIS Department. 2007. Schools and School Districts

Electrical Service

There are some transmission line facilities and distribution facilities within the corridor. The Utilities along with other Xcel Energy own and maintain the Maple River substation and existing transmission lines that come out of the north side. About two miles north of the Maple River substation, Minnkota also owns and operates the existing 345-kV transmission facilities that extend due west over the Sheyenne River and ultimately to Valley City, North Dakota, and which would be paralleled for a portion of this project. In addition, Minnkota owns and operates a north-south oriented 69-kV transmission line that traverses the corridor near Page, North Dakota. The proposed route would parallel the Minnkota 345-kV transmission line for about 10.2 miles and would cross the Minnkota 69kV transmission line. Western Area Power Association (WAPA) owns a 115-kV line that connects substations at Fargo and Grand Forks, North Dakota. The proposed route would cross this WAPA line just east of Prosper, North Dakota. No other high voltage transmission line facilities are located within the corridor.

Roads

County and township (section line) roads characterize the existing roadway infrastructure in and around the corridor. State Highways (SH) 32, 38, and 18, which are generally oriented north to south, pass through the corridor and route. SH 26 intersects SH 32 in the western portion of the corridor and route.

Traffic

The average daily traffic volumes on the area's county highways are documented in Table 14 and figure 9. Average daily traffic (ADT) on SH 18 was 1,310 vehicles just south of Amenia and 1,210 vehicles just north of the town in the year 2007. (ND DOT website, 2008) Determining the specific capacity of any highway is a complex process; however, general estimates are used for planning purposes. For purposes of comparison, the functional capacity of a two-lane paved rural highway is approximately 5,000 vehicles per day, or ADT. In general, the state highways in and near the corridor and route carry higher levels of traffic than what is average for rural North Dakota, but represent only a fraction of the capacity of the roadway.

Table 14
Existing Daily Traffic Levels

Roadway Segment	Average Daily Traffic (year)	Average Daily Truck Volumes (year)
North of Fargo on US 29	11,980 (1994)	240 (2004)
North of Amenia on Route 18	1210 (2007)	405 (2007)
CR 4/25th Street West of Route 18	430 (1994)	405 (2007)
South of Page on Route 38	555 (2007)	NA
East of Page on CR 26/18th Street	NA	550 (2004)
West of Page on CMC CR 26/18th Street	290 (2007)	NA
North of Pillsbury on Route 92	445 (2007)	NA
South of Pillsbury on Route 92	485 (2007)	NA

Source: NDDOT, Bismarck website http://www.dot.nd.gov/road-map/traffic/index.htm# - Current Traffic Volumes

Most roads in North Dakota traverse east to west and north to south. The route is on a southeast to northwest diagonal from Fargo in the southeast to Pillsbury in the northwest. The route will cross the above listed roads but will not interfere with traffic operations.

Water Supply

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

Telephone, Fiber Optic, Microwave, Television and Radio Communications

The potential for impacts on radio and television reception, and other communication or electronic control facilities were evaluated. No radio or television signal interference directly from the transmission of electricity is anticipated because of the differences in frequency of the signals. It is possible that localized interference could occur as a result of electric discharges across small gaps in the transmission system hardware or from the development of partial electric discharges from the line itself (generally referred to as "corona"). While it is unlikely that either of these situations would occur, in the event that radio and television signals are impacted, the use of corona-free hardware and routine transmission line maintenance would be expected to eliminate the problem.

Table 14 lists the existing communication facilities in the corridor. There are no communication facilities located within the route right-of-way.

Table 15
Communication Facilities within the 6-mile Corridor

Communication Facility Type	Number within 6-mile Corridor
Microwave	46
Cellular Phone	1
AM Radio	1
FM Radio	7
Mobile Radio Broadcasts	4
Mobile Radio Commercial Broadcasts	5
Digital Television	2
NTSC Television	2
Antenna Structures	18

5.3.2 Impacts

5.3.2.1 Corridor

Local Services

No negative impacts to local services are anticipated.

Electrical Service

No impact is anticipated to the existing transmission systems in the corridor. The new transmission line and substation improvements may increase overall service reliability, especially at the Maple River substation where there will be interconnections with existing electrical transmission systems.

Roads

Constructing the transmission line will require temporary access along the route. Public and private roads will be used the extent possible and no new permanent roads will be constructed. Where necessary, temporary access roads may also be used to access individual pole locations. Where temporary access roads are required, access will be approved by each landowner in advance and access will be routed through uplands and to avoid passing through sensitive features such as wetlands.

Traffic

The maximum construction workforce is expected to generate an average of approximately 50 additional vehicle trips per day on local roadways. Using any combination of state and county highways and other township roads throughout the project site, the traffic impacts are considered negligible. Since many of the area roadways have minimal traffic currently, the addition of 50 vehicle trips represents a large percentage increase (and likely would be perceptible), but would still be less than seasonal variations such as autumn harvest.

Water Supply

Construction and operation of the transmission line will not significantly impact rural water supplies. The installation or abandonment of any wells is not anticipated to be necessary for transmission line construction. No surface water or groundwater appropriation is anticipated.

Telephone, Fiber Optic, Microwave, Television and Radio Communications

No impacts to these communication resources are anticipated as none are located within the 125-foot right-of-way route.

5.3.2.2 Proposed Route

See above, section 5.3.2.1.

5.3.3 Mitigation

5.3.3.1 Corridor

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

Local Services

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

Electrical Service

Construction of the project will improve transmission system service, and no mitigation is necessary.

Roads

Use of public and private roads for delivery of equipment and materials, and by construction personnel, is not expected to affect the road conditions. Construction equipment and material weights will generally be no greater than the existing large farm equipment common in the project vicinity. Use of temporary access roads across agricultural lands may result in compaction of agricultural soils and loss of crops. Where necessary, compacted soils will be disked following construction, and landowners will be compensated for crop losses.

Traffic

No impacts are anticipated, and no mitigation is necessary.

Water Supply

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

Telephone, Fiber Optic, Microwave, Television and Radio Communications

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

Since no impacts to microwave or land-based telecom systems are anticipated, no mitigation is proposed.

5.3.3.2 Proposed Route

See above, section 5.3.3.1.

5.4 HUMAN HEALTH AND SAFETY

5.4.1 Description of Resources

5.4.1.1 Human Health

The term electromagnetic field (EMF) refers to electric and magnetic fields that are present around any electrical device. Electric fields arise from the voltage or electrical charges and magnetic fields arise from the flow of electricity or current that travels along transmission lines, distribution (feeder) lines, substation transformers, house wiring, and electrical appliances. The intensity of the electric field is related to the voltage of the line and the intensity of the magnetic field is related to the current flow through the conductors (wire). EMF can occur indoors and outdoors.

Considerable research has been conducted throughout the past three decades to determine whether exposure to power-frequency (60 Hz) EMF cause biological responses and health effects. Epidemiological and toxicological studies have shown no statistically significant association or weak associations between EMF exposure and health risks. There are no discernible health impacts from power lines.

In 1999, the National Institute of Environmental Health Sciences (NIEHS) issued its final report on "Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields" in response to the Energy Policy Act of 1992. NIEHS concluded that the scientific evidence linking EMF exposures with health risks is weak and that this finding does not warrant aggressive regulatory concern. However, because of the weak scientific evidence that supports some association between EMF and health effects, and the common exposure to electricity in the United States, passive regulatory action such as providing public education on reducing exposures is warranted

Recent reviews of potential human health effects from transmission line EMF were completed in California (California EMF Program 383) as part of the State of California EMF Program and in Wisconsin for the Arrowhead-Weston Environmental Impact Statement (EIS) (Arrowhead-Weston 5-21). Both studies have similar conclusions of no discernible health impacts from power lines. Both of these studies recommend the general precaution of minimizing unnecessary contact and advise prudent avoidance to EMF exposure.

As noted above, current passing through any conductor, including a transmission wire, produces a magnetic field in the area around the wire. The magnetic field associated with high voltage transmission lines surrounds the conductor and decreases rapidly with increasing distance from the conductor. The magnetic field is typically expressed in milliGauss (mG). The magnetic fields of some home appliances are greater than that from transmission lines. Table 16 shows the magnetic fields of some common household appliances.

Table 16
Magnetic Fields of Common Electric Appliances

Appliance	Distance from Source		
	6 inches	1 foot	2 feet
	Magnetic Field Level (mG)		
Hair Drier	300	1	--
Electric Shaver	100	20	--
Can Opener	600	150	20
Electric Stove	30	8	2

Appliance	Distance from Source		
	6 inches	1 foot	2 feet
	Magnetic Field Level (mG)		
Television	NA	7	2
Portable Heater	100	20	4
Vacuum Cleaner	300	60	10
Copy Machine	90	20	7
Computer	14	5	2

Source: *EMF In Your Environment* (EPA 1992).

Florida and New York, which have 150 and 200 mG exposure limits at the edge of the right-of-way, respectively, are the only two states with magnetic field exposure standards in the country. The general standard among the other states is prudent avoidance.

5.4.1.2 Human Safety

Proper safeguards will be implemented during construction and operation of the facility. The project will be designed to meet local, state, NESC, Otter Tail Power, Minnkota, and RUS safety standards. Construction crews will comply with local, state, NESC, Otter Tail Power, Minnkota, and RUS standards regarding the installation of facilities.

The proposed transmission line will be equipped with protective devices such as breakers and relays at the substation to safeguard the public from the transmission line if an accident occurs or if a structure or conductor falls to the ground. The protective equipment at the substation will de-energize the line should an accident occur. In addition, the new substation will be fenced and access limited to authorized personnel.

5.4.2 Impacts

5.4.2.1 Corridor

Human Health

While the general consensus is that electric fields pose no risk to humans, the question of whether exposure to magnetic fields potentially can cause biological responses or even health effects continues to be the subject of research and debate. Based on the most current research on electromagnetic fields, the project will have little impact to public health and safety due to EMF. The addition of transmission facilities is not expected to add significantly to the presence of EMF exposure in the corridor.

5.4.2.2 Proposed Route

Human Health

Electric forces and magnetic fields have been modeled from single circuit 230-kV transmission lines. Electric fields have been predicted to decrease to background levels of approximately 0.1 kilovolt per meter (kV/meter) within 200 feet of the transmission line. Based on the single pole 230-kV design, magnetic fields are predicted not to exceed levels of 200 mG when the line is conducting 400 MW of electric power. At distances of 50 feet away from the pole it is expected that the level of the magnetic field will be approximately 40mG. This distance is less than one-half the proposed right-of-way width the Utilities are seeking to obtain. At these levels the exposure level at the edge of the right of way is significantly less than that of common household appliances and less than the standards set in Florida and New York The nearest potential receptors to the proposed route are at least 550 feet away from the transmission line, where EMF is predicted to be significantly below background levels.

5.4.2.3 Human Safety

No impacts are anticipated.

5.4.3 Mitigation

5.4.3.1 Corridor

Human Health

In selecting a route that avoids impacts to residences and other occupied structures, Otter Tail Power has limited human exposure to EMF to the extent practicable. No additional mitigation should be needed.

Human Safety

Assuming the proper safeguards and protective measures are implemented as described above, no additional mitigation is proposed.

5.4.3.2 Proposed Route

See above section 5.4.3.1.

5.5 NOISE

5.5.1 Description of Resources

Noise is comprised of a variety of sounds of different intensities, across the entire frequency spectrum. Humans perceive sound when sound pressure waves encounter the auditory components in the ear. These components convert these pressure waves into perceivable sound. Noise is measured in units of decibels (dB) on a logarithmic scale. Because human hearing is not equally sensitive to all frequencies of sound, certain frequencies are given more "weight." The A-weighted (dBA) scale corresponds to the sensitivity range for human hearing. Noise levels capable of being heard by humans are measured in dBA, the A-

weighted sound level recorded in units of decibels. A noise level change of 3-dBA is imperceptible to human hearing. A 5-dBA change in noise level, however, is clearly noticeable. A 10-dBA change in noise levels is perceived as a doubling of noise loudness, while a 20-dBA change is considered a dramatic change in loudness. Table 17 shows noise levels associated with common everyday sources and places in context the magnitude of noise levels discussed herein.

Generally, background noise levels in rural areas vary between 40 and 50 dBA, while in suburban areas these levels increase to 50 to 60 dBA. In urban areas noise levels vary between 60 and 70 dBA (FRA 2005). Most of the corridor has background levels consistent with rural areas. The windy conditions in this region tend to increase ambient noise levels compared to other rural areas. Additionally, higher levels exist near roads and other areas of human activity. The eastern portion of the corridor near Fargo and West Fargo has higher noise levels. Along the route, the BNSF railroad is a significant source of noise. Rail cars traveling at 50 mph at a distance of 100 feet have noise levels of approximately 75 dBA. Train horns sounded at crossing vary between 95 and 115 dBA (FRA 2005).

Table 17
Common Noise Sources and Levels

Sound Pressure Level (dB)	Typical Sources
120	Jet aircraft takeoff at 100 feet
110	Same aircraft at 400 feet
90	Motorcycle at 25 feet
80	Garbage disposal
70	City street corner
60	Conversational Speech
50	Typical office
40	Living room (without TV)
30	Quiet bedroom at night

Source: Environmental Impact Analysis Handbook, ed. by Rau and Wooten, 1980

5.5.2 Impacts

5.5.2.1 Corridor

There will be few people are out near the transmission line or substation on a routine basis in the corridor because it crosses through primarily rural and agricultural areas. Those individuals that are in the within the corridor may experience a small amount of noise near the transmission line or substation during some conditions. The noise levels will be greater for those closer the route as described in 5.5.2.2. Typically, the attenuation rate for linear noise sources (i.e. the transmission line) is approximately -4 dB per distance doubled. In other words, the farther from the generation outlet a person is, the less noise they will hear.

5.5.2.2 Proposed Route

Transmission conductors and transformers at substations produce noise under certain conditions. The level of noise or its loudness depends on conductor conditions, voltage level, and weather conditions. Noise emissions are greatest from transmission lines and substations during heavy rain and wet conductor conditions. In foggy, damp, or rainy weather conditions, power lines can create a subtle crackling sound due to the small amount of the electricity ionizing the moist air near the wires. During heavy rain the general background noise level is usually greater than the noise from a transmission line. Additionally, few people are out near the transmission line during these conditions. For these reasons audible noise is not noticeable during heavy rain. During light rain, dense fog, snow and other times when there is moisture in the air, the proposed transmission lines will produce audible noise higher than rural background levels but similar to household background levels. During dry weather, audible noise from transmission lines is an imperceptible, sporadic crackling sound.

The route was sited to be at least 550 feet from occupied houses and structures. This will minimize the noise that any individual will hear along the route. At the 550 feet distance and farther from the transmission line, the noise levels will be below the background noise levels and are not expected to be perceptible. However, there is one location near the Sheyenne River crossing and one location near Page where the route will be closer than 550 feet to an occupied structure.

The route will pass approximately 0.5 mile south of the Erie Dam WMA and Bremer Lake Park and campground. At this distance from the route, the noise levels at this location will be below the background noise levels.

During construction activities, there will be noise associated with the construction equipment. The noise will be temporary at any given location, lasting only for a few days to week along given segments of the route, and is not expected to be significant.

5.5.3 Mitigation

5.5.3.1 Corridor

The Utilities will work with the two potentially affected residences to either avoid the residence by 500 feet, purchase the residence, or get a signed waiver from the people owning the residence. To that end Otter Tail Power has entered into a purchase agreement for one of the residences. All other occupied houses and structures will be farther than 550 feet from the transmission line and substation. At this distance, noise from the generation outlet is predicted to be below background levels, due to the placement of the transmission line near BNSF railroad.

During construction, noise levels will be minimized by ensuring that construction equipment is equipped with mufflers that are in good working order. Construction activities will generally be limited to the hours of 7 a.m. to 7 p.m. and not likely to occur during earlier morning or later evening hours. No additional mitigation measures are necessary since there will be nominal noise impacts from the project.

5.5.3.2 Proposed Route

See above, section 5.5.3.1.

5.6 VISUAL IMPACTS

5.6.1 Description of Resources

The topography of the study area corridor within Cass, Barnes, and Steele Counties is mostly flat with some rolling hills near the Sheyenne and Maple River confluence and along the other rivers in the corridor including Goose River and Rush River. Elevations in the corridor range between 867 feet and 1,500 feet above sea level. A topographic map of the project area is shown in figure 5.

The corridor and route parallel much of the existing BNSF railroad as well as portions of the Cenex pipeline (which is generally next to the BNSF railroad) and segments of Minnkota's existing 345-kV transmission lines as described in section 4.1. These existing facilities are present in the immediate vicinity of the proposed route. There are also numerous existing distribution lines and other manmade features within the project vicinity. On either side of the BNSF railroad and transmission line, the dominant land use is row crop agriculture with some grazing. The most widely grown crops in the project area are soybeans, spring wheat, corn (grain), sugar beets and sunflowers.

There are woodland and wetland areas scattered throughout the corridor. A mix of deciduous and coniferous trees planted for windbreaks typically surround existing and abandoned farmsteads. Generally, these forested areas are isolated groves or windrows established by the landowner/farmers to prevent wind erosion and shelter dwellings. Typical tree species include box elder, bur oak and cottonwood. There are scattered lands that have been put into conservation or wetland reserve easements between Page and Pillsbury, North Dakota as well as the Erie Dam WMA east of Page, North Dakota. These lands consist of native tall grass prairie and wetland species and contrast from the surrounding agricultural land use. In this same area there are several isolated wetland areas. Wetland areas are dominated by cattails, sedges, rushes and willows. Along the Sheyenne and Maple River confluence, on the eastern side of the study area, the vegetation consists of mostly floodplain vegetation, including maples, cottonwoods, and box elders.

Figures 10 through 12 shows typical landscape characteristics in the project area.

5.6.2 Impacts

5.6.2.1 Corridor

The proposed transmission line will be visible to landowners and community residents who live near the proposed line within the corridor. The mono-pole structures generally will be new visible features; however, because they will be mostly adjacent to existing infrastructure (e.g., Cenex pipeline, BNSF rail line, roadways), visual impacts are expected to be minimized. The H-frame structures generally will be adjacent to existing transmission line facilities which are already visible; therefore, visual impacts from these structures are expected to be minimized by consolidating infrastructure views with existing infrastructure.

5.6.2.2 Proposed Route

While the proposed transmission line will be located outside of local communities, including Reiles Acres, Harwood, Amenia, Page, and Pillsbury, it may be visible to some residents in or traveling to these communities. The substation will be located approximately two miles from Pillsbury. Visual impacts will be most evident to drivers traveling north and south on SH 32, 18, and 38 as well as those traveling east and west on SH 26. The line will impact landowners and residents that live in close proximity to the proposed route.

The new transmission line would be approximately 75 to 125 feet from existing transmission lines for about 10.2 miles and closely follows BNSF railroad for about 32.0 miles, the two most visible features adjacent to the route. The majority of the proposed route will also be crossing agricultural land. The impact to aesthetics will be minimized due the presence of the existing infrastructure and the proposed route through rural areas. The Utilities are generally proposing to use mono-pole structures (except where adjacent to existing transmission line), which are generally less visible than H-frame structures or steel towers. The mono-pole structures will be up to 130 feet in height with an average span between each structure of approximately 600 feet, and the H-frame structures will be approximately 70 feet high with an average span of approximately 900 feet. Figures 6 to 8 depict the typical structures that will be used for the transmission line and figure 11 depicts an existing Minnkota 345-kV structure along the route.

The proposed new substation will be located in a small triangle of land located adjacent to the BNSF railroad. It is bounded by county roads on its other two sides. The substation will be visible but there are no residences within one mile of the substation location. The substation will look generally similar to the existing Maple River substation, which is depicted in figure 12.

5.6.3 Mitigation

5.6.3.1 Corridor

The proposed corridor contains an existing railroad, pipeline and transmission line infrastructure. The new transmission line will be sited within close proximity to pipeline and railroad in order to keep the infrastructure within the same corridor.

5.6.3.2 Proposed Route

Although the transmission line will contrast with the surrounding land uses, these areas have already been impacted visually by the existing railroad, pipeline, and transmission lines. The proposed route will minimize the number of residences impacted by the line. Care is being taken to avoid structure placement, as much as possible, in biologically sensitive areas such as wetlands and high quality native prairies. Placing structures in front of picture windows will also be avoided.

5.7 CULTURAL RESOURCES

5.7.1 Description of Resources

In February 2008 the Utilities contacted the North Dakota SHPO (SHPO) to request a review of potential project-related impacts on known or suspected cultural resources along the proposed 230-kV transmission line route (appendix E). The SHPO responded with a letter (SHPO: 08-0343 RUS/RDUP) (appendix E) in February 2008 recommending that Otter Tail Power sponsor an archival records search generally not more then one-mile-wide centered on the proposed route (1/2 mile on each side of the centerline) to determine the nature of previous cultural resource investigations and the location of known cultural resources in the proposed project vicinity. The SHPO also stated that there is a potential for unrecorded cultural properties to exist in the project area. Therefore, the SHPO suggested that a field survey, primarily pedestrian, take place in the proposed project area. The SHPO confirmed that tribal consultations would not be needed since the project lacks need for compliance with federal cultural resource requirements, but recommended that the Utilities submit a notification in good faith to the Indian Affairs Office in Bismarck, North Dakota, as part of other federal, state and local project notifications.

The Utilities reviewed cultural resources information on file at the SHPO for the proposed project area and prepared an archival records search report which is provided in appendix A. Table 18 lists the 15 previous Class I cultural resource inventories on file at the SHPO for the proposed project area, and Table 19 summarizes the 15 cultural resource sites and nine cultural resource site leads identified in these previous investigations. Some of the sites identified during previous projects have had National Register of Historic Places (NRHP) eligibility determinations by lead federal agencies and others have had management recommendations by the SHPO.

Table 18
Previously Identified Investigations in the Project Area

Manuscript Number	Manuscript Title	Author(s)/Associations	Report Date
000222	*Lower Sheyenne River Archaeological Survey*	Rain Vehik University of Wisconsin-La Crosse	December 1977
001738	*Cultural Resource Inventory Report, HAS INC. Project #81-10*	Historical & Archaeological Surveys, Inc.	May 1981
004280	*Field Reconnaissance Survey of Churches in Barnes, Ransom, Richland, Sargent and Steele Counties of North Dakota*	Prairie Research	May 1997
005443	*Cenex Pipeline Company Fargo Extension Class III Cultural Resource Survey*	Cultural Research Management	December 1990
005945	*Architectural and Photographic Survey of Churches in Eight Eastern North Dakota Counties*	Frank E. Vvzralek	October 1985
006449	*North Dakota Department of Transportation Safety Project Cultural Resource Review 1992-1994*	North Dakota Department of Transportation	January 1995
006565	*Log Piles of Cass, McHenry, Ransom, and Walsh Counties North Dakota, Cultural Resources Inventory*	University of North Dakota	January 1996
007216	*Preliminary Cultural Resource Survey For Project 4814 City of Fargo, Engineering Department, Cass County, North Dakota*	The 106 Group Ltd.	June 1998
007223	*Report 1 for the 1998 Field Season: Cultural Resource Inventories for the Cass Rural Water System, Cass County, North Dakota*	LTA, Inc	July 1998
008028	*Cultural Resource Survey Western Area Power Administration Fiber Optic Cable Installation, Cass County, Fargo, North Dakota*	Western Cultural, Inc.	October 2001
008048	*Rush River Bridge Replacement: A Class III Cultural Resource Inventory, Cass County, North Dakota*	Metcalf Archaeological Consultants, Inc.	October 2001
008851	*Cass Rural Water Users 2004 Class III Cultural Resources Survey, Cass County, North Dakota*	Anthropology Research University of North Dakota	July2004
009393	*State Highway 38 From Buffalo to Page: A Class III Cultural Resource Inventory In Cass County, North Dakota*	Metcalf Archaeological Consultants, Inc.	September 2005

Manuscript Number	Manuscript Title	Author(s)/Associations	Report Date
010128	*Historic Bridges in North Dakota*	Renewable Technologies, Inc.	April 2005
010185	*Cass Rural Water Contract 2007-1 (effluent line): Class I and Class III Cultural Resource Inventory. In Cass County, North Dakota*	Jeff Kinney & Associates	August 2007

The Utilities have routed part of the proposed transmission line to coincide with an existing pipeline corridor owned and operated by Cenex. The Cenex pipeline runs from Minot to West Fargo, North Dakota, principally along the BNSF railroad. Cultural Research Management (1990) indicated that the entire pipeline route was surveyed in 1990. All sites located in the Cenex pipeline's right-of-way (ROW) had recommendations on them for eligibility for listing on the NRHP. SHPO guidance has recommended that the Utilities perform additional survey only where their transmission line deviates from the Cenex pipeline.

The Utilities will continue to coordinate with SHPO in anticipation of conducting archaeological field investigations in areas of the project where the transmission line deviates from the Cenex pipeline. These investigations will be conducted by a professional archaeologist permitted by the State of North Dakota per NDCC 55-03-01. The Utilities will provide the SHPO a report for review following its investigations, and will consult upon report recommendations with SHPO staff.

5.7.2 Impacts

5.7.2.1 Corridor

The construction of transmission line features will determine the potential impacts to cultural resources. Fourteen cultural resource sites and nine cultural resource site leads have been identified within the project corridor[2] (Table 19). Two of the sites have been identified as potential NRHP eligible cultural resources as historic bridges. These bridges are currently open to public use, and will not be affected by the proposed transmission line facilities. The bridges are likely to be used by construction personnel and for equipment and material deliveries to the project site, but do not appear to need further consideration provided weight restrictions are not exceeded.

The probability of encountering intact cultural resources is largely dependent on landforms and previous land use activities. Areas utilized for agricultural or mining activates will generally contain a lower probability for containing intact cultural resources, although it is understood by the Utilities and the SHPO that agricultural activity does not always compromise archaeological site integrity.

[2] For the purpose of the Phase I Cultural Resource Inventory, the study area corridor is limited to a one-mile-wide corridor, centered on the proposed route centerline, per the SHPO recommendation.

5.7.2.2 Proposed Route

The proposed route follows existing transmission lines, Cenex pipeline, BNSF railroad and various roadways from about two miles west of Pillsbury, North Dakota to northwest Fargo, North Dakota. The transmission line will deviate from the existing Cenex pipeline as described in section 4.1, and in those locations additional field survey would be needed in order to identify culturally sensitive areas. The Utilities do not anticipate adverse impacts to previously identified cultural resources as a result of the proposed project due to its proximity within actively cultivated lands and its proximity to existing corridor facilities. In the event that field investigations identify new cultural resources, the Utilities will consider the location of potentially eligible cultural resources and attempt to avoid them.

Table 19
Previously Identified Archaeological Sites and Archaeological Site Leads
Within a Half Mile of the Project Area

Site Number	Site Type	Cultural Affiliation	Comments	Manuscript Number	Location			Eligibility to NRHP	Management Recommendations
					Township	Range	Section		
32BA202	Church	Historic	Baldwin Presbyterian Church	4280, 5443	143N	56W	17	Unevaluated	No further work
32BAX181	Post Office	Historic	Ellsbury Post Office	None	143N	56W	21	Unevaluated	No further work
32BAX182	Halfway House	Historic	Halfway House	None	143N	56W	21	Unevaluated	No further work
32CS116	Church	Historic	Maple Sheyenne Lutheran Church	5443	140N	50W	13	Not Eligible	No further work
32CS4444	Farm	Historic	Abandoned Farmstead	5443	141N	50W	31	Unevaluated	No further work
32CS4445	Farm	Historic	Grain storage bins and sparse historic scatter	1738, 5443	142N	53W	30	Unevaluated	No further work
32CS4446	Farm Dump	Historic	Farm dump/scatter	5443	143N	55W	30	Unevaluated	No further work
32CS4447	Railroad Siding	Historic	Apparent remains of the Walden town site and Walden Siding	5443	143N	55W	30	Unevaluated	No further work

Site Number	Site Type	Cultural Affiliation	Comments	Manuscript Number	Location			Eligibility to NRHP	Management Recommendations
					Township	Range	Section		
32CS4448	Homestead	Historic	Historic scatter	5443	142N	54W	21	Unevaluated	No further work
32CS4449	Farm	Historic	Abandoned Farmstead	5443	141N	51W	35	Unevaluated	No further work
32CS4451	Farm	Historic	Abandoned Farmstead	5443	141N	51W	21	Unevaluated	No further work
32CS4453	Farm	Historic	Sparse historic scatter	5443, 10128	142N	53W	36	Unevaluated	No further work
32CS4675	Commerce-Grain Elevator	Historic	Historic scatter	7223	140N	50W	17	Unevaluated	No further work
32CS4956	Bridge	Historic	Rural bridge over a branch of the Rush River	5443, 10128	142N	53W	36	Eligible	No further work
32CS4964	Bridge	Historic	Rural bridge over the Sheyenne River	222, 10128, 10185	140N	49W	18	Eligible	No further work
32CS4965	Bridge	Historic	Rural bridge over the Sheyenne River	222, 10128, 10185	140N	49W	18	Unevaluated	No further work
32CS4967	Bridge	Historic	Rural bridge over an intermittent stream	222, 7223, 10128, 10185	140N	49W	17	Unevaluated	No further work
32CSX96	Town Site	Historic	Prosper Great Northern	5443, 5945	140N	50W	8	Unevaluated	No further work

Site Number	Site Type	Cultural Affiliation	Comments	Manuscript Number	Location			Eligibility to NRHP	Management Recommendations
					Township	Range	Section		
32CSX140	Junction	Historic	Vance Great Northern Junction	5443	141N	52W	11	Unevaluated	No further work
32CSX147	Post Office	Historic	Oatland and Mason Post Office	5443	142N	53W	36	Unevaluated	No further work
32CSX164	Loading Station	Historic	Dartmoor Great Northern Loading Station	None	142N	54W	34	Unevaluated	No further work
32CSX176	Loading Station	Historic	Walden Great Northern Loading Station	5443	143N	55W	30	Unevaluated	No further work
32CSX197	Station/Post Office	Historic	Oatland Great Northern Station and Post Office	5443, 10128	142N	53W	36	Unevaluated	No further work
32CSX203	Remains	Undetermined	Skeletal Remains	6449	141N	52W	12	Unevaluated	No further work

5.7.3 Mitigation

5.7.3.1 Corridor

The Utilities do not anticipate adverse impacts to potentially eligible cultural resources within the study area corridor. The 14 cultural resource sites and nine cultural resource site leads identified during the background and literature review generally warrant no further consideration because project activity is unlikely to impact them. However, if any additional potential NRHP-eligible sites are identified throughout the course of the project, that may likely be impacted, they will be considered on a case by case basis to determine proper mitigation procedures. The archival records identified two previously identified potential NRHP-eligible cultural resources (historic bridges). These bridges may be used by construction personnel and for equipment and material deliveries. In order to avoid impacting these resources, the Utilities will ensure project personnel are aware of bridge weight limitations and instructed to not exceed posted limits

5.7.4 Proposed Route

The Utilities do not anticipate impacts to identified NRHP eligible sites or any other cultural resources within the proposed project area. If potential NRHP eligible sites are identified during field investigations that will be impacted, a professional archaeologist in coordination with the SHPO would establish appropriate buffers around the potentially eligible cultural resources, or develop other necessary treatment, to protect site integrity.

The Utilities will consider impacts to identified potential NRHP-eligible cultural resources to the extent practical. Constructing the line to avoid or span sensitive areas should avoid many of the identified cultural resources in the area. In the event that an impact would occur, the Utilities would determine the nature of the impact and consult with SHPO on whether or not the resource was eligible for listing on the NRHP. If the resource was determined eligible, mitigation could include an effort to minimize project impacts on the resource and/or collection of additional documentation through data recovery.

The Utilities will develop a discovery plan should previously unknown cultural resources or human remains be inadvertently encountered during the project. The plan would outline the framework for handling such discoveries in an efficient and legally compliant manner. If human remains were identified procedures would be followed to ensure that the appropriate authorities would be involved and in accordance with local and state guidelines such as NDCC 23-06-27.

5.8 RECREATIONAL RESOURCES

5.8.1 Description of Resources

Recreational opportunities in Cass, Barnes, and Steele Counties include camping, hiking, biking, swimming, golfing, hunting, fishing and nature observation. Review of state and federal databases

indicates that no registered national wildlife refuges, state game refuges, or nature preserves are present within the corridor. Review of state and federal databases indicates that no registered national wildlife refuges, state game refuges, game management areas, or nature preserves are present within the corridor. The Erie Dam WMA, operated by the North Dakota Department of Fish and Game (NDFG) is located T142N, R53W near Page, North Dakota. It is 1,031 acres of lands managed for wildlife and open for hunting (NDFG 2002).

There are several areas of private land open to sportsmen (PLOTS) for hunting and fishing between Page and Pillsbury. These areas depicted in figure 17. As well there are USFWS easements and some of the state trust lands are open to hunting. The USFWS properties are private properties in which the USFWS has an easement for protection of wetland and grassland resources. These areas are depicted in figure 16. The wetland easements stipulate that the landowner can not drain, fill, or burn the wetlands within the easement. The grassland easements stipulate that a landowner can not disturb the sod or burn the native grasslands within the easement. The purpose of wetland easements and grassland easements are to protect wetland areas and adjacent grassland buffers for the reproduction and growth of waterfowl species. USFWS wetland and grassland easements in the corridor are managed through the Valley City Wetland Management District.

The Bremer Lake Park and campground is located adjacent to the Erie Dam WMA. Bremer Lake is the only Cass County Park in the corridor. It has received Land and Water Conservation Funding (LWCF) for construction of the campground (Solberg 2008; Vetter 2008; US DOI 2008). There are no Barnes or Steele county parks within the corridor. There are parks within the communities in the corridor, including Reiles Acres, Fargo, West Fargo and Page, North Dakota. Located on the very western edge of the corridor, Madison Park is located in Fargo and Jameson Park is located in West Fargo. The parks in Reiles Acres, Page and West Fargo have received LWCF grants for park improvements (Solberg 2008; Vetter 2008; US DOI 2008). There are multi-use trails and snowmobile trails within the corridor, as shown on figure 17.

5.8.2 Impacts

5.8.2.1 Corridor

In general, recreational impacts will be visual in nature and limited to individuals using public or private property in the corridor for hiking, hunting, fishing, or nature observation. See section 5.6 for detailed discussion of anticipated visual impacts and proposed mitigation measures. No other significant impacts to recreational resources are anticipated

5.8.2.2 Proposed Route

Recreational impacts will be primarily visual in nature and limited to individuals using public or private property for hiking, hunting or nature observation. USFWS easements are avoided by the proposed route. The Erie Dam WMA north of the route will not be crossed by the route. All of the community parks or

county parks will be avoided. Four PLOTS areas, two in Cass County and two in Barnes County would be crossed by the route. The route would cross through the southern portion of one parcel and just pass through the very northern edge of another. In Barnes County the route would pass through the northern portion of both parcels. Individuals using these properties would have access under the transmission line to access either side of the property. No additional impacts are anticipated

Three trails will be spanned by the transmission line. No structures will be placed directly in the trails and the trails will not need to be relocated or closed. Individuals using these trails will continue to have access to the trails. However, during construction there may be short periods of disruption with construction workers in the area.

5.8.3 Mitigation

5.8.3.1 Corridor

Since it is not anticipated that any recreational resources will be removed from service by implementation of the proposed project, no adjacent land will be converted or dedicated to recreational use or wildlife management. Secondary recreational uses of proposed project property may be allowable depending on security requirements. No other mitigation is anticipated to be necessary.

5.8.3.2 Proposed Route

The route will follow existing transmission, pipeline, railroad and roadway corridors for the majority of its length, and has been routed to avoid impacts to recreational areas.

5.9 EFFECTS ON LAND BASED ECONOMIES

5.9.1 Description of Resources

Agriculture/Farming

The majority of the corridor is cultivated farmland and grasslands as summarized in table 10 and shown on figure 13. Approximately 186,296 acres of the corridor and 628 acres of the route are composed of cultivated land. Native grassland makes up approximately 3,975 acres of the corridor and 10 acres of the route. Woodlands make up approximately 2,900 acres of the corridor and 4 acres of the route. There are also numerous small areas of cultivated land that are currently enrolled in CRP contracts as shown on figure 17.

According to the North Dakota Annual Statistics Bulletin, Cass County is ranked 32nd among North Dakota counties in agricultural products sold. Barnes County is ranked 24th and Steele County is ranked 34th among North Dakota counties. Within the corridor, soybeans are the most widely grown crop. Spring wheat, corn (grain), sugar beets, and sunflowers are additional crops in the corridor.

Cass County has approximately 961 farms (in the 2002 census), of which the primary commodity is soybeans; Cass County ranks first in the state in production of soybeans. Cattle are the primary livestock in Cass County. The market value of agricultural products from Cass County in 2002 was approximately $208,957,000. Crop sales account for approximately 94 percent of the total value (USDA NASS 2002).

Barnes County has approximately 838 farms (in the 2002 census), of which the primary commodity is soybeans; Cass County ranks fourth in the state in production of soybeans. Cattle are the primary livestock in Barnes County. The market value of agricultural products from Barnes County in 2002 was approximately $94,215,000. Crop sales account for approximately 92 percent of the total value (USDA NASS 2002).

Steele County has approximately 318 farms (in the 2002 census), of which the primary commodity is crop soybeans; Steele County ranks ninth in the state in production of soybeans. Cattle are the primary livestock in Cass County. The market value of agricultural products from Barnes County in 2002 was approximately $52,199,000. Crop sales account for approximately 97 percent of the total value (USDA NASS 2002).

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

Table 20 summarizes the amounts of prime farmland and soils of statewide/local significance in the corridor and crossed by the route. In Cass County, 75,807 acres or 42% of the soil is classified as prime farmland in the corridor and 259 acres or 35% within the 125-foot right of way route is classified as prime farmland. The corridor through Barnes County is composed of 15,790 acres (41%) prime farmland soils and the 125-foot route contains 44 acres (41%) prime farmland soils. Steele County has 4,230 acres of prime farmland in the corridor (42%). While the corridor extends into Steele County, the route itself does not.

Table 20
Acres of Prime Farmland, Soils of Statewide/Local Importance, and Prime Farmland when Drained in the Corridor and along the Route.

County	All Areas Are Prime Farmland (acres)	Soil of Statewide/ Local Importance (acres)	Prime Farmland Only When Drained (acres)	Not Prime Farmland (acres)	Percent Prime Farmland
Study Area Corridor					
Cass	75,807	12,352	64,257	28,589	42
Barnes	15,790	0	11,100	11,524	41
Steele	4,231	3,451	1,462	985	42
Proposed Route					
Cass	259	50	342	99	35
Barnes	44	0	49	14	41

Table 21 lists the soils considered prime farmland and soils of statewide or local importance in the corridor that are within the proposed route.

Table 21
Farmland Soil Characteristics along the Proposed Route – Cass and Barnes Counties

Corridor Soil Units	All Areas Are Prime Farmland	Soil of Statewide & Local Importance	Prime Farmland Only When Drained	Soil Unit in Route?
Aberdeen silt loam, 0 to 1 percent slopes		x		x
Antler-Wyard loams, 0 to 2 percent slopes	x			x
Arveson loam, 0 to 1 percent slopes			x	
Balaton loam, 3 to 6 percent slopes	x			x
Balaton-Wyard loams, 0 to 6 percent slopes	x			
Barnes-Buse loams, 3 to 6 percent slopes		x		x

Corridor Soil Units	All Areas Are Prime Farmland	Soil of Statewide & Local Importance	Prime Farmland Only When Drained	Soil Unit in Route?
Barnes-Buse-Langhei loams, 6 to 9 percent slopes		x		x
Barnes-Svea loams, 0 to 3 percent slopes	x			x
Barnes-Svea loams, 3 to 6 percent slopes	x			x
Bearden silt loam, 0 to 1 percent slopes	x			
Bearden silty clay loam, 0 to 1 percent slopes	x			x
Bearden silty clay loam, 0 to 2 percent slopes	x			x
Bearden-Kindred silty clay loams, 0 to 1 percent slopes	x			x
Bearden-Lindaas silty clay loam, 0 to 2 percent slopes			x	x
Borup silt loam, 0 to 1 percent slopes			x	
Buse-Barnes-Darnen loams, 3 to 9 percent slopes		x		
Cashel silty clay, 0 to 3 percent slopes, occasionally flooded	x			
Colvin silty clay loam, 0 to 1 percent slopes			x	x
Darnen loam, 6 to 9 percent slopes		x		
Delamere loam, stratified substratum, 0 to 1 percent slopes	x			
Divide loam, 0 to 2 percent slopes	x			
Divide loam, loamy substratum, 0 to 2 percent slopes	x			
Dovray silty clay, 0 to 1 percent slopes			x	x
Eckman loam, loamy substratum, 2 to 6 percent slopes	x			
Eckman-Gardena loams, 2 to 6 percent slopes	x			x
Eckman-Zell loams, 2 to 6 percent slopes	x			x
Eckman-Zell loams, 6 to 9 percent slopes		x		
Egeland fine sandy loam, 2 to 6 percent slopes	x			

Corridor Soil Units	All Areas Are Prime Farmland	Soil of Statewide & Local Importance	Prime Farmland Only When Drained	Soil Unit in Route?
Egeland-Embden fine sandy loam, 0 to 2 percent slopes	x			
Embden fine sandy loam, 0 to 2 percent slopes	x			
Embden fine sandy loam, gravelly substratum, 1 to 6 percent slopes	x			x
Embden-Wyndmere fine sandy loams, 0 to 2 percent slopes	x			
Fairdale silt loam, 0 to 6 percent slopes, occasionally flooded	x			
Fargo silt loam, 0 to 1 percent slopes			x	
Fargo silty clay loam, 0 to 1 percent slopes			x	x
Fargo silty clay, 0 to 1 percent slopes			x	x
Fargo silty clay, depressional, 0 to 1 percent slopes			x	x
Fargo-Hegne silty clays, 0 to 1 percent slopes			x	x
Flom loam, 0 to 1 percent slopes			x	
Foldahl fine sandy loam, 0 to 2 percent slopes		x		
Fordville loam, 2 to 6 percent slopes	x			
Fordville loam, 0 to 2 percent slopes	x			
Galchutt-Fargo silty clay loam, 0 to 2 percent slopes			x	
Gardena loam, 0 to 2 percent slopes	x			x
Gardena loam, stratified substratum, 0 to 2 percent slopes	x			
Gardena silt loam, 0 to 2 percent slopes	x			
Gardena-Glyndon loam, 0 to 2 percent slopes	x			x
Gardena-Zell silt loams, 2 to 6 percent slopes	x			
Gilby loam, 0 to 1 percent slopes	x			
Glyndon loam, 0 to 2 percent slopes	x			x
Glyndon loam, 2 to 6 percent slopes	x			

Corridor Soil Units	All Areas Are Prime Farmland	Soil of Statewide & Local Importance	Prime Farmland Only When Drained	Soil Unit in Route?
Glyndon silt loam, 0 to 2 percent slopes	x			x
Glyndon-Tiffany silt loams, 0 to 2 percent slopes			x	x
Hamerly-Tonka complex, 0 to 3 percent slopes			x	x
Hamerly-Wyard loams, 0 to 3 percent slopes	x			x
Hecla-Garborg fine sandy loams, 0 to 2 percent slopes		x		
Hegne-Fargo silty clay loams, 0 to 1 percent slopes			x	x
Heimdal-Emrick loams, 0 to 3 percent slopes	x			x
Heimdal-Emrick loams, 1 to 3 percent slopes	x			
Heimdal-Emrick loams, 3 to 6 percent slopes	x			x
Heimdal-Esmond-Sisseton loams, 6 to 9 percent slopes		x		x
Kindred-Bearden silty clay loams, 0 to 2 percent slopes	x			x
La Prairie loam, 0 to 2 percent slopes, occasionally flooded				
La Prairie silt loam, 0 to 2 percent slopes, rarely flooded	x			x
LaDelle silty clay loam, 0 to 2 percent slopes, rarely flooded	x			
Lamoure silty clay loam, 0 to 1 percent slopes, occasionally flooded			x	x
Lankin loam, 0 to 2 percent slopes	x			
Lankin-Antler loams, 0 to 2 percent slopes	x			x
Lindaas silt loam, 0 to 1 percent slopes			x	
Marysland loam, 0 to 1 percent slopes			x	x
Overly silt loam, 0 to 2 percent slopes	x			x
Overly silty clay loam, 0 to 2 percent slopes	x			

Corridor Soil Units	All Areas Are Prime Farmland	Soil of Statewide & Local Importance	Prime Farmland Only When Drained	Soil Unit in Route?
Overly-Bearden silt loam, 0 to 2 percent slopes	x			x
Perella silty clay loam, 0 to 1 percent slopes			x	x
Svea-Barnes loams, 0 to 3 percent slopes	x			
Swenoda fine sandy loam, 0 to 3 percent slopes	x			x
Tiffany fine sandy loam, 0 to 1 percent slopes			x	
Tonka silt loam, 0 to 1 percent slopes			x	
Ulen fine sandy loam, 0 to 1 percent slopes		x		
Vallers loam, 0 to 1 percent slopes			x	x
Wapheton silty clay, 0 to 3 percent slopes, occasionally flooded	x			x
Wheatville-Mantador-Delamere loams, clayey substratum, 0 to 2 percent slopes	x			
Wyndmere silt loam, 0 to 2 percent slopes	x			
Wyndmere silt loam, 2 to 6 percent slopes	x			
Wyndmere-Tiffany loams, 0 to 2 percent slopes			x	

Twenty farms in Cass County are irrigated. Within in the corridor in Cass County, there are 45 irrigation permits. Most of these permits occur in the Rick Township. Nine farms in Barnes County are irrigated. There are no irrigation permits in the corridor in Barnes County. There are four farms in Steele County that are irrigated, but no irrigation permits in the corridor in Steele County (USDA NASS, 2002 and State Water Commission 2008). The Utilities proposed route will avoid the irrigated parcels.

There are several farms with residences within the corridor. Occupied residences are identified on figure 2. The route centerline was sited to be at least 550 feet from occupied houses and structures. However, there is one location near the Maple River substation (Sections 7 and 8, T140N, R49W) and one location near Page, North Dakota (Section 2, T142N, R55W) where the route will be closer than 550 feet to an occupied structure.

Woodlands

Economically important forestry resources are not found in the corridor. Woodlands are primarily associated with streams and rivers or woodlots and windbreaks at existing or abandoned homesteads in the corridor. Woodlands along the route are depicted on figure 13.

5.9.2 Impacts

5.9.2.1 Corridor

Agriculture/Farming

Permanent impacts will be associated with the areas surrounding the transmission line structures, where farming equipment will not be able to operate and crops will not be able to be grown. All areas underneath and surrounding the proposed transmission line will be available for agricultural use following construction. Considering the large amount of agricultural land in the corridor, potential impacts will be negligible. Temporary impacts typically include soil disturbance, possible compaction of farm soils and crop damage if construction occurs during the growing season.

Woodlands

Since a majority of the woodlands are associated with homesteads and windbreaks, few impacts to woodlands are anticipated.

5.9.2.2 Proposed Route

Agriculture/Farming

No impacts are anticipated to animal health and safety due to the construction or operation of the transmission line. Except for the physical locations of the transmission line structures, all the land surrounding the transmission line will be available for grazing.

Based on a review of structure types, locations and workspace requirements (section 5.0) relative to existing land use, the permanent agricultural land that will be converted due to the project will be approximately 1.4 acres for the transmission line structures and 3.0 acres for the substation. Approximately 107.4 acres of agricultural land will be temporarily removed from production during construction of the transmission line poles, not including potential impacts due to temporary access. Landowner compensation for crop damages will be negotiated during individual lease agreements. As stated previously, agricultural areas surrounding transmission line structures generally will still be able to be farmed following construction of the project. It is possible that some of the land classified as agricultural may not be used for agricultural purposes during construction; thus the actual impacts to agriculture production cannot be determined until the transmission line location is finalized.

The effect of heavy equipment on agricultural soils may cause compaction. Compaction of soil is a concern where construction equipment is used intensively, even during a relatively short duration such as the construction season needed for transmission line installation.

When considering the impact on production for the top five crops in Cass, Barnes and Steele Counties, the temporary construction impact of 107.4 acres would affect less than 0.1 percent of the yearly production for those commodities based on yields reported in 2006 (USDA NASS 2007).

Family farms will be impacted due to the temporary loss of land during construction of the transmission line; permanent impacts are anticipated to be minor as noted above. Where CRP lands are crossed (figure 17) and acreage is removed from production (subject to final pole placement), the landowners may have to work with the FSA to address the CRP status associated with these lands.

Woodlands

Approximately 4.1 acres of woodlands will be crossed along the route. The woodlands are primarily associated with river crossings, homesteads and windbreaks. Relatively few trees within the right-of-way are expected to need removal, except where needed for safe operation of the facilities.

5.9.3 Mitigation

5.9.3.1 Corridor

Agriculture/Farming

The Utilities will work with landowners to minimize impacts to their land, and the transmission line structures will be located to minimize impacts to farming operations and prime farmland as much as possible. Land used for the structures will be unavailable for future crop production. However, once the transmission line is constructed, all land surrounding the structures will still be able to be farmed or grazed. Construction staging areas and temporary transmission line access roads will be disked as necessary to relieve excessive compaction caused by construction. Landowners will also be compensated for any damage that occurs to crops due to the construction of the transmission line. For impacts to CRP status, the Utilities will negotiate to compensate landowners for impacts.

Woodlands

Impacts to woodlands will be restricted to those areas necessary for the safe and reliable operation of the line. The Utilities will replace impacted trees and shrubs at a ratio of 2:1 to a location where the trees will not impact the function of the transmission line, and the Utilities will monitor the success of replacement vegetation for five years.

5.9.3.2 Proposed Route

See above, section 5.9.3.1.

5.10 SOILS

Cass, Barnes, and Steele counties soil types, their characteristics and their acreage in the route are listed in Table 22.

Table 22
Soil Types and Characteristics

Soil Type and Description	Acreage in Corridor	Acreage in Route
Buse-Barnes - Soils with a thick black surface layer and associated soils with a thin surface layer or very limey soil; they are usually rolling, undulating, and nearly level loams or clay loams.	477.5	NA
Fargo - Deep, level and nearly level, poorly drained, fine textured soils.	19,472.5	87.9
Glyndon - Deep, level to gently sloping, somewhat poorly drained and poorly drained, medium textured soils.	12,273.9	44.7
Glyndon-Gardena-Barnes - Deep, level to gently sloping, somewhat poorly drained and poorly drained, medium textured soils.	22,811.9	118.8
Hegne-Fargo—Bearden - Deep, level, somewhat poorly drained, moderately fine textured soils that have a silt loam, silty clay loam or silty clay substratum.	12,969.4	80.9
La Prairie-Fairdale - Deep, level and nearly level, moderately well drained, medium textured and moderately fine textured soils.	13,489.8	40.9
Perella-Colvin-Bearden - Deep, level and nearly level, moderately drained, poorly drained, and moderately well drained, moderately fine textured soils.	27,080.0	123.8
Ryan-Fargo - Deep, level, poorly drained, fine textured soils.	16,504.1	61.7
Svea-Barnes - Deep, level to moderately step, well drained and moderately well drained.	29,937.3	96
Svea-Hamerly-Barnes - Soils with a thick black surface layer and associated soils with a thin surface layer or very limey soil; they are usually rolling, undulating, and nearly level loams or clay loams.	14,230.1	NA
Tiffany-Hedcla-Glyndon-Embden - Deep, level to gently sloping, somewhat poorly drained and poorly drained, medium textured soils.	6,278.2	16.4
Tonka-Svea-Hamerly-Barnes - Deep, level to gently sloping, somewhat poorly drained and poorly drained, medium textured soils.	47,286.4	187

5.10.1 Impacts

5.10.1.1 Corridor

The permanent impact to soils in the area will be limited to areas removed from agricultural production at transmission line structure locations. Temporary impacts to soils are anticipated during construction in the areas immediately surrounding the transmission line structures.

5.10.1.2 Proposed Route

The permanent impact to soils in the area will be limited to areas removed from agricultural production at transmission line structure locations. These impacts will be relatively minor, totaling approximately 1.4 for the transmission line. During transmission line construction, approximately 107.4 acres may be impacted temporarily for access roads and staging areas. In isolated cases, grading may be required for access roadway construction. Generally, soil removed in these cases will be on steep slopes and not agriculturally productive. A discussion of impacts to prime farmland soils is provided in section 5.9.

The potential for wind and water erosion exists in the soil types found within the corridor. Construction practices will minimize soil erosion during and after transmission line construction and impacts are not expected to be significant.

5.10.2 Mitigation

5.10.2.1 Corridor

Wind and water erosion are potential hazards for the soils found within the corridor. To minimize erosion during and after construction, BMPs for erosion and sediment control will be utilized. Only non-structural practices are expected to be required. These practices include: temporary seeding, permanent seeding, mulching, filter strips, erosion blankets, grassed waterways and sod stabilization. Topsoil will be segregated if cuts are made during construction and reapplied after final contours have been graded.

5.10.2.2 Proposed Route

See above, section 5.10.3.1.

5.11 GEOLOGIC AND GROUNDWATER RESOURCES

5.11.1 Description of Resources

Geology

Cass County lies in the Drift Prairie and Red River Valley physiographic provinces. The land surface varies from strongly rolling to nearly flat. Local relief generally ranges from 10 to 20 feet per mile, but in some areas it may be as much as 40 feet. Cass County is covered with glacial drift, which ranges in thickness from 80 feet to 470 feet. Four major surface units are recognized, including ground moraine, lake plain, shore, and deltaic deposits (Klausing 1968). The eastern end of the corridor, including the

location of the Maple River substation is located in the lake plain deposits. Moving to the west, the corridor passes through shore deposits around and south of Arthur, North Dakota and then passes through ground moraine near Page, North Dakota. Alluvium deposits are present along the Sheyenne, Maple and Rush Rivers. Isolated deposits of sand and gravel occur at numerous places on the ground moraine surface (Klausing 1968). A total of 11 gravel pits were identified in the study corridor (figure 13).

The three Cretaceous bedrock units known to underlie Cass County include the Greenhorn Formation, Graneros Shale, and Dakota Sandstone. The Greenhorn Formation underlies the glacial deposits in the western portion of the County. This formation lies 200 feet to 420 feet below the surface. Where the Graneros Shale is not overlain by the Greenhorn Formation, it has a deeply eroded surface and ranges in thickness from 10 feet to about 100 feet. In the western and central portions of Cass County, it is generally underlain by the Dakota Sandstone, but in the eastern portions of Cass County, it rests on Precambrian crystalline rocks. The Dakota Sandstone consists chiefly of interbedded black shale and fine to coarse sand. Dakota Sandstone, while absent in the eastern and southeastern portions of Cass County, underlies the rest of the county at depths ranging from about 300 feet to more than 650 feet (Klausing 1968).

Barnes County is characterized by gently undulating plains of ground moraine separated by relatively narrow, elongate end moraines creating a system of poorly defined and unconnected drainage resulting from glaciation. The surface deposits in Barnes County are composed primarily of material of glacial origin, ranging in texture from clay to large boulders (Kelly 1966). Within the corridor, the glacial deposits are primarily ground moraine.

Precambrian bedrock underlies Barnes County at a depth of more than 2,000 feet. The Precambrian is overlain by Cambrian sandstone, shale of the Deadwood Formation, and by three Ordovician formations. An angular unconformity separates the Ordovician strata from the overlying Dakota Sandstone. The Dakota Sandstone is the oldest formation that yields potable water in Barnes County. The formation is composed primarily of gray siltstone and shale with interbedded sandstone. A thick sequence of Upper Cretaceous shale overlies the Dakota Sandstone (Kelly 1966). Within the corridor, Carlile, Niobrara and Pierre shale formations are present.

The corridor in Steele County lies on the glacial Lake Agassiz plain, a nearly level area covered by glacial lake deposits. The drainage is directed generally southeastward drained by the east-flowing Goose and Elm Rivers and the south-flowing Maple River. The surficial geology is made up of till facies of nearly flat surface covered by abundant boulders and patches of sand and gravel. The bedrock layer is made up Precambrian basement rocks about 1,000 feet deep. The Precambrian is overlain by rocks of Ordovician age including the Winnipeg, Red River, and Stony Mountain Formations. These formations are overlain by the Lakota and Fall River Formations, which are overlain by the Pierre Formation. The Pierre Formation underlies the glacial drifts in Steele County. The fractured shale ranges in this formation are between 25 feet to 140 feet below land surface (Downey and Armstrong 1977).

Groundwater

Ground water in Cass County is obtainable from sand and gravel deposits associated with the glacial drift and from sand and (or) sandstone beds in the Dakota Sandstone. There are six major drift aquifers in Cass County (Klausing 1968). The corridor passes over the surficial Fargo, West Fargo, and Page aquifers and the Dakota Sandstone bedrock aquifer. The Fargo aquifer ranges in thickness from 0 feet to about 106 feet, but averages about 45 feet. The West Fargo aquifer ranges in thickness from 0 feet to as much as 140 feet but averages about 60 feet in thickness. The Page aquifer consists of two intervals of sand and gravel superimposed in the drift. The upper zone ranges in thickness from 0 feet to 78 feet and the lower zone ranges in thickness from 0 feet to 50 feet in thickness. The Dakota Sandstone aquifer underlies all of Cass County except the easternmost quarter of Cass County. The depth to the top of the Dakota Sandstone ranges from about 300 feet in the eastern portion of the County to more than 700 feet in the western portion of the county (Klausing 1968).

In Barnes County, there are two major types of aquifers – consolidated rocks and unconsolidated glacial deposits. The Dakota Sandstone aquifer has produced more water than any other aquifer in Barnes County; however, the water quality from this aquifer is not suitable for modern appliances and plumbing and is primarily used for stock. The depth of the wells in this aquifer range from 600 feet to 1,500 feet and are located primarily in the eastern half of the county where water-bearing sands are present at shallower depths. The Corridor crosses over the Bantel unconsolidated glacial aquifer. Its thickness ranges from 0 feet to 88 feet (Kelly 1966).

The Dakota aquifer is potentially the most productive bedrock aquifer in Steele County; however, most wells are unused but are maintained on a standby basis. The Dakota aquifer is about 580 feet below the land surface. Steele County includes the Spiritwood and Galesburg surficial aquifers. Many of the farms in the western portion of Steele County tap deposits of glacial till. These wells yield sufficient water to meet the needs of small farm operations (Downey and Armstrong 1977).

5.11.2 Impacts

5.11.2.1 Corridor

Geology

Eleven extractive or storage resources were identified within the proposed corridor. Depending on route location, isolated gravel resource areas could be made unavailable for future development.

Groundwater

Impacts to groundwater resources are not anticipated as water supply needs will be limited to minor construction related activities. The mono pole and H-frame structures will be installed at depths of 12 to 25 feet. These structures might encounter surficial groundwater but would not affect the quantity or quality of groundwater available.

5.11.2.2 Proposed Route

Geology

As noted in section 5.11.2.1, gravel resource areas are present in the proposed corridor. The proposed route avoids known gravel resource sites. It is possible that other, undeveloped gravel resource areas are present in the area given the nature of the surficial geology. No active gravel or sand pits will be impacted by the route.

Groundwater

As noted in section 5.11.2.1 groundwater resources will not be substantially affected.

5.11.3 Mitigation

5.11.3.1 Corridor

At the corridor level, there is potential for sand and gravel resources to be made unavailable for future development. If this does occur, mitigation in the form of compensation could be required. No other mitigation is anticipated to be necessary.

5.11.3.2 Proposed Route

Transmission line structure locations will not impact the use of existing water wells because the structures will not be sited on or adjacent to occupied structures. Transmission line structures will be sited so as to avoid sand and gravel resources identified along the route. Where sand and gravel resources cannot be avoided, the Utilities will coordinate with landowners regarding impacts and any necessary mitigation. No other mitigation is anticipated to be necessary.

5.12 SURFACE WATER AND FLOODPLAIN RESOURCES

5.12.1 Description of Resources

Surface water and floodplain resources for the corridor and route were identified by reviewing U.S. Geological Survey topographic maps, Flood Insurance Rate Maps (FIRM) produced by the Federal Emergency Management Agency (FEMA), current aerial photography, and USFWS NWI data. The major surface waters located within the corridor include the Sheyenne, Rush and Maple Rivers. Surface water drains primarily to the east and south. The topography of the area contains numerous tributaries, both perennial and intermittent, and periodic wetlands including isolated lacustrine, palustrine and riverine wetlands. Seasonal variations in precipitation and groundwater recharge are the primary factors affecting wetland and lake elevations. These water resources are depicted in figure 16.

The project lies within the Red River Watershed Basin which spans an area of nearly 40,000 square miles within the states of North Dakota, Minnesota, and South Dakota. Most of the flow in the Red River comes from its eastern tributaries as a result of regional patterns in precipitation, evapotranspiration, soils, and topography. Although these flows can be variable, the highest streamflows generally occur in spring and

early summer as a result of snowmelt, rain falling on melting snow, or heavy rain falling on saturated soils. Streamflow of the Red River during the remaining periods of the year are generally less than one-fourth of the average annual streamflow.

The project area within the Red River Valley can be divided into two units. These include the Sheyenne and Maple River deltas, which together occupy an area of about 70 square miles, and the flat nearly featureless plain once occupied by glacial Lake Agassiz. The Maple River delta ranges in relief from 5 feet per mile to 20 feet per mile and crosses the delta in a northeasterly direction. This delta includes a valley that ranges from a quarter of a mile to three-quarters of a mile wide and is as much as 59 feet deep. The Sheyenne delta is relatively flat with local relief which generally does not exceed five feet. It merges with the Maple River delta and the shore deposits of glacial Lake Agassiz. The flat Lake Agassiz area only slopes a few feet per mile eastward near the Red River, which forms the eastern border of the county. The major surface waters located within Cass County include the Sheyenne, Rush and Maple Rivers.

The remainder of project area occurs in the northeast corner of Barnes County within the Luverne end moraine which traverses the county from north to south, in an area east of the Sheyenne River. This area is covered with glacial drift with uplands covered with till and associated glaciofluvial deposits. The floodplains of streams found within this area are blanketed by alluvium. Total relief within this area does not exceed 500 feet, with the highest elevation point of 1,570 feet located north of Valley City. No major surface waters are within the portion of the project located in Barnes County.

The corridor area crosses the Sheyenne River, Lower Branch of the Rush, and two crossings each of the Maple and Rush Rivers. In addition, 15 unnamed minor streams, one unnamed perennial stream, Goose Lake and one unnamed pond also occur within the corridor.

Reviews of the FEMA FIRM maps available for the corridor include only a limited portion of the project area. Accessible maps cover approximately the first ten miles of the project, beginning at the substation location in Fargo and traveling northwest. Portions of the available maps include Zone A, Zone X Regulatory Floodplain and Regulatory Floodway areas. Zone A and Regulatory Floodplain areas designate the area of the 1 percent annual chance flood, or “100-year” flood, Zone X designates areas that are within the “500-year” floodplain, and Regulatory Floodway designates areas needed to convey the 100-year flood flows.

5.12.2 Impacts

5.12.2.1 Corridor

No impact to surface waters or floodplain resources within the corridor is anticipated. Construction of the transmission line will cause some limited land disturbance along the corridor. These disturbances will occur outside of the bed of surface waters and the structures utilized for both the substation and transmission lines will not be prone to flood damages, and will not contribute to any possible flooding within the corridor. The transmission line structures will be placed to avoid surface waters.

5.12.2.2 Proposed Route

Although portions of the Sheyenne River, Rush River (two crossings), and Maple River, 14 unnamed minor streams, one unnamed perennial stream and one unnamed pond will be crossed by the route, impacts to these surface waters are not anticipated because they will be spanned. Impacts to wetlands are addressed below in section 5.13.

5.12.3 Mitigation

5.12.3.1 Corridor

There are no anticipated impacts within the corridor which would require mitigation. The corridor will allow impacts to waters of the United States to be avoiding by routing and pole placement in uplands.

Construction access roads, if adjacent to intermittent streams and drainageways, can be designed in a manner to facilitate unrestricted runoff from the upper portion of the watershed to the lower portion of the watershed, and to control runoff from disturbed areas to drainageways. A NPDES permit application and Storm Water Pollution Prevention Plan (SWPPP) will be prepared by the Utilities and submitted to the North Dakota Department of Health, as required, prior to the initiation of transmission line construction.

5.12.3.2 Proposed Route

No impacts to surface waters, streams or drainageways are anticipated due to the proposed route and structure locations; therefore, no mitigation is necessary. Mitigation to prevent surface water impacts will include those measures described in section 5.12.3.1.

5.13 WETLANDS

5.13.1 Description of Resources

Wetlands within the corridor and along the route have been provisionally identified by reviewing NWI data and recent aerial photography (figure 16). The USFWS used historical aerial photographs as a basis for developing NWI maps. The NWI maps provide guidance in determining areas to be evaluated for wetland characteristics, but should not be used as the sole basis for wetland determinations. A formal

wetland delineation has not been completed at this time, but will be completed to determine whether the areas identified on the NWI maps are actually wetlands (figure 16).

Based on review of the corridor, land use within the corridor includes almost exclusively agricultural areas dotted with scattered residences. Some wetlands within the corridor appear to be isolated by topography and many within farmed areas appear to have been drained for agriculture use. The first third of the corridor is contained within an area which was once glacial Lake Agassiz. The flat land surface and limited capacity of natural channels in this area result in slow runoff and flooding. This area contains an abundance of hydric soils, and includes straight drainages which flow to the north. Wetlands within this area are not numerous, and are generally limited to those associated with larger surface waters. Further northwest, the corridor enters slightly higher ground which is heavily drained for agricultural use. This area is largely composed of gently rolling hills with small streams which generally have better defined channels and steeper gradients than those in the lake plain. This area includes both scattered larger glacial lakes and small isolated wetlands. As the corridor enters the Maple River delta it encounters a slight rise in elevation. A number of braided tributaries are observed within this area, along with more frequent occurrences of larger isolated wetland areas. The westernmost portion of the corridor moves out of the floodplain area into relatively flat agricultural land which includes a mosaic of smaller isolated wetland depressions and surface drainages.

Wetlands in the corridor represent typical glacial prairie pothole wetlands and range in size from isolated basins less than a few hundred square feet to large lakes. Nearly 80 percent of the wetlands within the corridor are palustrine emergent, but there are also palustrine, lacustrine, and riverine wetlands. The NWI wetland types and their acreages within the corridor are summarized in Table 23 and crossing locations are depicted in figure 16.

Table 23
NWI Wetland Types and Acreages in Corridor

Wetland Acreages (by type)		
Cowardin Classification	Count	Acres[1]
Lagustrine, Limnetic and Littoral	13	62.020
Palustrine Aquatic Bed, Flooded	51	601.60
Palustrine Emergent, Flooded	4326	5317.91
Palustrine Forested and Scrub-Shrub, Flooded	121	129.42
Palustrine Unconsolidated Shore, Flooded	24	8.10
Riverine Lower Perennial, Unconsolidated Bottom	6	142.67
Riverine Intermittent, Unconsolidated Shore, Flooded	3	14.75
Total	4544	6834.65

The route avoids many of the wetlands identified in the corridor, but the right-of-way overlaps 57 NWI wetlands totaling 25.83 acres. However, because the transmission poles can be spaced up to 1,000 feet apart, all wetland impacts should be avoided by pole placement. Approximate pole locations relative to NWI wetlands are depicted on figure 18.

The NWI wetlands along the route are more than 90 percent palustrine emergent wetlands as summarized in Table 24. Additional wetland areas identified along the route include palustrine forested to scrub-shrub, and riverine wetlands.

Table 24
NWI Wetland Types and Acreages Along the Route

Wetland Acreages (by type)		
Cowardin Classification	Count	Acres[1]
Palustrine Emergent Temporarily Flooded (PEMA)	37	13.7
Palustrine Emergent Seasonally Flooded (PEMC)	14	9.3
Palustrine Emergent Semi permanently Flooded (PEMF)	2	0.8
Palustrine Forested to Scrub-shrub Seasonally Flooded (PFO/PSSC)	2	0.8
Riverine Lower Perennial Unconsolidated Bottom Permanently Flooded	1	0.7
Riverine Intermittent Unconsolidated Shore Semi Permanently Flooded	1	0.5
Total	57	25.8

[1] Wetland acreage calculated using USFWS NWI data.

5.13.2 Impacts

5.13.2.1 Corridor

There are no anticipated impacts to wetland areas within the corridor. In general, the transmission line can be routed to avoid, or structures can be designed to span, and thus avoid, wetland areas.

During construction there is the possibility of sediment reaching surface waters as the ground is disturbed by excavation, grading and construction traffic. Reasonable efforts will be employed to limit any sediment movement within the project area. Following completion of the project it is anticipated that there will be no additional impacts on surface water quality.

5.13.2.2 Proposed Route

A review of the proposed route indicates that there are no wetlands along the proposed route which cannot be avoided by the route or spanned using the proposed transmission line structures. Wetlands over 1,000 feet in length, which is the maximum span of the proposed transmission line design, may require that transmission structures be placed in wetlands. If this occurs each structure would result in 100 ft^2 of permanent impact.

5.13.3 Mitigation

5.13.3.1 Corridor

There are no anticipated impacts to wetland areas within the project corridor. Most of the wetlands within the corridor are isolated basins and can be avoided by routing or spanning. The Utilities will use BMPs during construction and operation of the transmission line to protect topsoil and minimize soil erosion into adjacent wetland resources. Practices may include containing excavated material, protecting exposed soil, stabilizing restored material and revegetating disturbed areas with native species.

5.13.3.2 Proposed Route

No wetland impacts are anticipated within the proposed route. In the event wetlands are delineated that within U.S. Army Corps of Engineers (USACE) jurisdiction that can not be avoided by routing or spanning, then Otter Tail Power will install the structure and mitigate impacts as authorized by Nationwide Permit 12. The Utilities will also use BMPs during construction and operation of the transmission line to protect topsoil and minimize soil erosion into adjacent wetland resources. Practices may include containing excavated material, protecting exposed soil, stabilizing restored material and revegetating disturbed areas with native species.

5.14 VEGETATION

5.14.1 Description of Resources

While both the corridor and route are dominated by cropland (81 percent and 73 percent respectively), there is a difference in the composition of the remaining land. The second largest vegetation type in the corridor is planted herbaceous perennials (eight percent) while in the route, developed lands are the second largest land cover at 15 percent. Wetlands and open water are the third largest cover type on both the corridor and the route at 4.4 and five percent, respectively, while prairie, woodlands, and shrubs make up the rest the acreage. The total acreage of each land cover is listed in the Table 25.

Table 25
Vegetation Types

Vegetation Type	Approximate Acreage	
	Study Corridor	Proposed Route Right-of-Way
Cropland. Lands tilled and planted to annual herbaceous small grain and row crops. Common small grain crops include wheat, barley, and oats. Examples of row crops include corn, sunflowers, soybeans, sugar beets, and potatoes. The land cover category includes both non-irrigated and irrigated crops. These lands have a bare soil phase during the growing season that generally occurs in early spring when most crops are planted.	186,297	628
Planted herbaceous perennials. Lands planted to perennial herbaceous grasses, forbs, or grass-legume mixtures. Often the species planted are introduced species such as smooth brome, crested wheatgrass, alfalfa and sweet clover although some plantings are native grass species. Most lands are used to produce forage crops for harvest or for grazing by domestic livestock. This class includes lands enrolled in retired cropland conservation programs that are planted to grass and legume species. In addition to planted fields, smooth brome has invaded and established stands in many native grasslands and some of these are likely mapped as planted grasslands. Leafy spurge invasions in native grassland may also be mapped as this class.	19,017	130
Wet-Mesic Tall Grass Prairie. Low lying lands of depressions and drainage ways with a high water table and high water availability. Characteristic native grasses include Golden-Edged Prairie Cord Grass, bluejoint, Calamagrostis stricta, wooly sedge, big bluestem and switchgrass. Reed canarygrass is a common non-native species in some stands.	<1	NA
Bluestem - Needlegrass-Wheatgrass transition prairie. A transition prairie between tall grass prairie to the east and mixed grass prairie to the west generally occurring on soils derived from glacial materials. Common species are little bluestem, porcupinegrass, green needle grass, big bluestem, switchgrass, western wheatgrass, slender wheatgrass, needle and thread grass, blue grama, Kentucky bluegrass, and smooth brome. Dominance by a single species typically occurs only over small areas with most stands less than 0.1 ha in size. The complex distribution of species over short distances is believed to be largely determined by variability in plant available moisture and nutrients. An outstanding feature of glacial till parent materials is their variability due to the diverse ways by which the debris was laid down, of differences in the chemical composition of the original materials and of fluctuation in the grinding action of the ice. Soils heterogeneity occurs over short distances with textures varying from sands, silts, sand, and clays.	3,952	10
Wheatgrass Prairie. This vegetation occurs on nearly level to rolling landscapes with deep, well drained, medium to fine textured soils. Dominant grass species include western wheatgrass, green needle grass, needle and thread grass, and blue grama. Saltgrass and brittle pricklypear are often common and diagnostic species of sites with saline-alkali soils. Wyoming big sagebrush and silver sagebrush can occur as scattered shrubs contributing little cover in some stands in the Missouri plateau physiographic region.	<1	NA

Vegetation Type	Approximate Acreage	
	Study Corridor	Proposed Route Right-of-Way
Needlegrass prairie. Dominant grasses are needle and thread grass, blue grama, and upland western wheatgrass and prairie sandreed are abundant locally. This vegetation occurs on nearly level to rolling landscapes with shallow to deep, moderately coarse textured soils, with moderate permeability and low to moderate available water capacity.	22	NA
Upland Deciduous Shrubland. Upland areas dominated by shrubs typically occur on sites where available soil moisture is greater than sites with prairie land cover types and less than sites with woodland land cover types. Sites include well-drained depressions and riparian areas, north and east facing slopes, and woodland edges. Stands are typically small and vary greatly in shrub density and species composition. The following species are dominants in different stands: western snowberry occupies upland depressions, mesic swales, and flood plains; silver buffaloberry, chokecherry, Juneberry, fireberry hawthorn, silverberry, and American plum often occur as small, dense thickets in mesic swales and aspects, and the outer edges of floodplains and woodlands; smooth sumac occurs on the edges of Bur Oak woodlands in eastern North Dakota; skunkbush sumac occupies ridges, hills, and slopes associated with scoria outcrops in south western North Dakota; Eastern poison ivy often obtains greatest abundance on sandy soils.	1,232	6
Lowland Deciduous Shrubland. Depression and riparian areas dominated by shrubs with a high water table and high water availability. This map unit includes lands mapped by the Palustrine scrub-shrub. Sandbar willow and peachleaf willow are common shrub species in this map unit. Beaked hazelnut, a common understory species of Aspen and Bur Oak woodlands, occurs as dense riparian shrublands in Pembina Hills.	84	2
Floodplain Woodland. Woodlands occurring on the floodplains of the Red River and its tributaries, the Sheyene River, James River, Souris River, Mouse River, Missouri River and its tributaries, and Little Missouri River. Dominant tree species include green ash, American elm, and eastern cottonwood. Other associated tree species include American basswood, bur oak, quaking aspen, box elder, common hackberry, and Rocky Mountain juniper. The variability and diversity of floodplain forests decreases from east to west. Structure and composition of the forest overstory are strongly related to stand age and horizontal and vertical position on the floodplain.	985	1
Deciduous woodland. Woodlands dominated by mixtures of deciduous species including the native tree species green ash, bur oak, Populus tremuloides, American elm, and eastern cottonwood and a wide variety of introduced deciduous and conifer tree species planted in shelterbelts, windbreaks and tree rows.	1,856	3
Green Ash Woodland. Green ash - American elm woodlands are the most common type of woodland in North Dakota. Stands occur on the upland edge of floodplain woodlands, in the bottom and sides of draws and ravines, and mesic, typically north and north east facing, slopes. Box elder is a common tree species in these woodlands	16	NA

Vegetation Type	Approximate Acreage	
	Study Corridor	Proposed Route Right-of-Way
Bur Oak Woodland. Woodlands dominated by bur oak generally occur in the bottom and sides of draws and ravines, and well drained upland areas on a wide range of slope angles and aspects. Quaking aspen and green ash are associated tree species in some stands. Associated shrub species include beaked hazelnut, chokecherry, Juneberry, and western snowberry. Pennsylvania sedge is a common herbaceous understory species in the more mesic stands.	44	NA
Lacustrine wetlands. Wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a dammed river channel, (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage.	872	NA
Riverine wetlands. Wetlands and deepwater habitats contained within a channel, with the following exception (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.	559	<1
Palustrine temporary wetland. Wetlands dominated by persistent emergents or aquatic beds where surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface. Plants that grow both in uplands and wetlands may be characteristic of this water regime.	3,193	12
Palustrine seasonal wetland. Wetlands dominated by persistent emergents or aquatic beds where surface water is present for extended periods especially early in the growing season, but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface.	3,795	20
Palustrine semipermanent wetland. Wetlands dominated by persistent emergents or aquatic beds where surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land's surface.	1,408	2
Water. Surface water identified from analysis of Landsat Thematic Mapper imagery that was not identified as wetlands in the U.S. Fish and Wildlife Service National Wetland Inventory Data.	386	<1
Developed - High intensity residential. Highly developed areas where people reside in high numbers. Examples include apartment complexes and row houses. Vegetation accounts for less than 20% of the land cover.	280	<1

Vegetation Type	Approximate Acreage	
	Study Corridor	Proposed Route Right-of-Way
Developed - Low intensity residential. Lands consisting of a mixture of constructed materials and vegetation. Constructed materials account for 30-80 percent of the land cover. Vegetation may account for 20-70 percent of the cover. These areas most commonly include single-family housing units. Population densities are lower than in high intensity residential areas.	465	1
Developed - Commercial/industrial/transportation. Infrastructure such as roads, railroads, airports and other highly developed areas not classified as high intensity residential.	2,858	41
Developed - Urban grasslands. Lands planted to primarily grasses in developed settings for recreation, erosion control or aesthetic purposes. Examples include parks, lawns, golf courses, airport grasslands, and industrial site grasslands.	1,399	NA
Developed - Recently Developed lands. Areas that have been recently developed or were omissions in the developed land cover categories in the 1992 North Dakota National Land Cover data.	827	NA

The North Dakota Department of Agriculture lists yellow toadflax as the only one of the twelve state noxious weeds present in the study area. The Department lists it as present in Barnes County; the other two counties that comprise the study area (Cass and Steele) do not have noxious weeds associated with them.

There are no state or federal grasslands within the corridor. The USFWS does have WPAs adjacent to the corridor that include wetlands and grasslands. In addition to the WPAs, the USFWS also has wetland easements throughout the corridor and along the route on private lands. These lands are identified in figures 16 and 17.

5.14.2 Impacts

5.14.2.1 Corridor

Permanent impacts to vegetation will occur at each structure location. Temporary impacts will occur around each structure and where access is needed to construct each structure.

5.14.2.2 Proposed Route

It is anticipated that temporary impacts will occur during construction and will include ground disturbance by construction equipment around each structure and along the right-of-way as the line is constructed. These impacts are anticipated to total approximately 107.4 acres. Approximately 4.0 acres of woodland will be crossed by the proposed right-of-way.

Temporarily disturbed areas that are not cultivated will be reseeded per USFWS and NRCS recommendations to blend in with existing vegetation.

5.14.3 Mitigation

5.14.3.1 Corridor

The Utilities will work closely with landowners to minimize impacts to vegetation associated with structure placement along the route. The Utilities will conduct a pre-construction survey for wetlands and native prairie to finalize structure locations to avoid impacts. The Utilities will also attempt to avoid and minimize impacts to existing trees and shrubs. If impacts to individual trees and shrubs cannot be avoided, these resources will be mitigated at a ratio of 2:1 and plantings will be monitored for success for five years.

If permanent filling within jurisdictional wetland impacts is identified, then the Utilities will comply with the requirements of the USACE Nationwide Permit 12. Permanent impacts to jurisdictional wetlands and waters will be mitigated according to USACE requirements.

The Utilities will use BMPs during construction and operation of the transmission line to protect topsoil and minimize soil erosion to wetland resources. Practices may include containing excavated material, protecting exposed soil, stabilizing restored material and revegetating disturbed areas with native species.

5.14.3.2 Proposed Route

See above, section 5.14.3.1.

5.15 WILDLIFE

5.15.1 Description of Resources

Wildlife in the corridor consists of birds, mammals, fish, reptiles, amphibians and insects, both resident and migratory, which utilize the corridor habitat for forage, migratory stopover, breeding and/or shelter. Species present in the project vicinity are associated with agricultural fields, pasture grasslands, and wetland areas. Common wildlife found in the project vicinity include ducks, geese, sandhill cranes, sharp tailed grouse, ring necked pheasant, raccoon, mink, striped skunk, weasel, white-tailed deer, coyote, red fox, badger, porcupine and rabbit.

5.15.2 Impacts

5.15.2.1 Corridor

Raptors, waterfowl and other bird species may be affected by the construction and placement of the generation outlet. Avian collisions are a possibility after the completion of the generation outlet including

the transmission line. Waterfowl are typically more susceptible to transmission line collision, especially if the line is placed between agricultural fields that serve as feeding areas, or between wetlands and open water, which serve as resting areas. Generally, the most difficult part of the structure for the bird to see is the shield wire.

Additionally, large birds, such as raptors, could potentially be impacted by generation outlet through electrocution. Electrocution occurs when birds with large wingspans come in contact with either two conductors or a conductor and a grounding device.

5.15.2.2 Proposed Route

See above, section 5.15.2.1.

5.15.3 Mitigation

5.15.3.1 Corridor

The following measures will be used, to the extent practicable, to help avoid potential impacts to wildlife along the route during generation outlet design and operation:

- H-frame structures will be used for approximately 18 percent of the length of the transmission line. H-frame structures put the conductor wires in parallel, making them easier for birds to see.
- The proposed design will exceed the recommended safe clearances of 60 inches between a phase conductor and ground required for raptors. The Utilities also propose structure designs using suspension insulators with a clearance of approximately 84 inches.
- As requested by the USFWS, the proposed transmission line will be designed in accordance with guidance found in "2006 Suggested Practices for Avian Protection on Power Lines."
- The Utilities will work with the NDGF, and the USFWS, to identify areas to be considered for marking transmission line shield wires and/or to use alternate structures to reduce avian collisions.
- The Utilities are conducting preconstruction surveys for wetlands, native prairies and woodlands in the vicinity of the proposed transmission line and associated facilities to minimize impacts.
- The Utilities will avoid or minimize disturbance of individual wetlands or drainage systems during construction and operation of the project.
- In case of permanent wetland impacts, replacement of any unavoidable loss of wetland habitat with functionally equivalent wetlands, as required by applicable permits.
- Installation and maintenance of appropriate erosion control measures to reduce sediment transport to adjacent wetlands and stream channels.
- The Utilities will protect or replace existing trees and shrubs if impacted at a 2:1 ratio at the site, subject to landowner approval.

- The Utilities will maintain sound water and soil conservation practices during construction and operation of the project to protect topsoil and adjacent resources and to minimize soil erosion. To minimize erosion during and after construction, North Dakota BMPs for erosion and sediment control will be followed. These practices include: temporary seeding, permanent seeding, mulching, filter strips, erosion blankets, grassed waterways, and sod stabilization.
- The Utilities will revegetate non-cropland and pasture areas with seeding mix as recommended by the USFWS and NRCS.
- The Utilities will inspect and control noxious weeds in the vicinity of the transmission line and associated facilities immediately after construction and periodically for the life of the project.

5.15.3.2 Proposed Route

See above, section 5.15.3.1.

5.16 RARE AND UNIQUE NATURAL RESOURCES

5.16.1 Description of Resources

The USFWS, NDGF, and NDPR were contacted to review the corridor for threatened and endangered species and unique habitats. In response to a request for a project review, the USFWS noted that there have been historical sightings in Cass and Barnes counties of the whooping crane but that the project is outside of the major migratory path for the species. The USFWS noted concern for the Dakota skipper as potential habitat is located near the project. The Dakota skipper, a butterfly, was listed as a candidate species under the Endangered Species Act in 1995 and has been recorded on native prairies located in Barnes and Griggs counties.

The response received from the NDGF noted the presence of wetlands in the corridor and that the Maple and Sheyenne Rivers were considered fisheries. The NDPR provided a response and information from the North Dakota Natural Heritage Inventory Database (NHID) which the NDPR maintains as the most complete source of data on North Dakota's rare, endangered or otherwise significant plant and animal species, plant communities and other natural features. Jesse Hanson of the Department provided written comment on February 28, 2008, noting the potential presence of the following species of special concern or other significant ecological communities are known to occur within a one-mile radius of the project area:

- Wabash pigtoe mussel (Fusconaia flava)
- Black sanshell mussel (Ligumia recta)
- Pink heelsplitter mussel (Potamilus alatus)
- Mapleleaf mussel (Quadrula quadrula)
- Yellow bullhead (Ameiurus natalis)

- Wolf's spikerush (Eleocharis wolfii)
- Prairie skink (Eumeces septentrionalis)
- Northern redbelly dace (Phoxinus eos)
- Wet prairie complexes (Spartina pectinata – Calamagrostis stricta – Carex spp herbaceous vegetation)

5.16.2 Impacts

5.16.2.1 Corridor

No impacts to rare and unique natural resources are anticipated as both open water and other sensitive habitats are expected to be avoided by routing and pole placement.

5.16.2.2 Route

No impacts to rare and unique natural resources are anticipated as both open water and other sensitive habitats are expected to be avoided. The route passes through some locations where potentially sensitive ecological wet prairie communities were identified by the NDPR. Habitat surveys for this sensitive community will be completed prior to construction. It is expected the prairie community, if located near the route, can be spanned by the transmission poles. In the event that those habitats cannot be avoided, the Utilities will coordinate directly with both the USFWS and the NDPR, as appropriate, to evaluate the potential impacts and develop acceptable mitigation measures.

5.16.3 Mitigation

5.16.3.1 Corridor

Site specific mitigation measures will not be necessary, since no impacts are anticipated to rare and unique natural resources. However, in response to the USFWS request the following design considerations will be implemented:

- The proposed transmission line will be designed in accordance with guidance found in "2006 Suggested Practices for Avian Protection on Power Lines.
- Power lines will be marked with state of the art line marking devises within one mile of wetlands along the project route.
- Increased power line visibility in accordance with the document entitled: "Mitigating Bird Collisions with Power Lines: The State of the Art in 1994".
- Avoidance of native prairie where ever possible and surveys by a qualified biologist of any native prairie that is unavoidable.

5.16.3.2 Route

A pre-construction inventory of existing wetlands, native prairie, and woodlands will be conducted along the route. The Utilities will avoid the resources identified to the extent practicable and implement the mitigation measures outlined in section 5.16.3.1. No additional mitigation measures are proposed.

5.17 SUMMARY OF ROUTE IMPACTS

Table 26 summarizes the resources that will be impacted as a result of the construction of the generation outlet and the appropriate mitigation.

Table 26
Summary of Route Impacts and Mitigation

Resource	Impact	Mitigation
Demographics	Socioeconomic impacts are primarily positive due to increased expenditures during construction and the long term benefits of an increased tax base of the county due to property taxes. A nominal amount of land will be permanently removed from production due to the construction of the project.	Impacts are primarily positive, so no mitigation is proposed for socioeconomic impacts. Impacts to landowners will be minimized to the extent practicable.
Land Use	Approximately 4.4 acres of land will be permanently impacted due to the construction of the generation outlet (1.1 acres of land for the transmission line and 3.0 acres for the new substation). The existing land use is primarily agriculture and will remain in agriculture use since the land under or adjacent to the line can still be used by the landowner.	The Utilities will work with landowners and regulatory agencies to minimize impacts of the project.
Public Services	No impacts are anticipated.	The transmission system will be constructed according to the configuration identified by the Utilities to mitigate any potential impacts. Impacts to existing public services will be avoided to the extent practicable.
Human Health and Safety	No impacts are anticipated.	The Utilities will follow "prudent avoidance" methods to minimize EMF exposure and any potential impacts to human health. If proper safeguards are implemented, no additional mitigation is required.
Noise	The closest occupied structure to the generation outlet is 550 feet. No impacts to noise sensitive land uses are anticipated.	No mitigation measures are proposed.

Resource	Impact	Mitigation
Visual	The generation outlet will be evident to individuals traveling on adjacent as well as residences and landowners that live in close proximity to the transmission line and substations.	The route minimizes the number of residences impacted by the line.
Cultural and Archaeological	No impacts to previously identified cultural resources are anticipated.	The Utilities has completed a Class I Cultural Resources Inventory for the corridor and route. The Utilities will conduct a Class III inventory along the proposed route.
Recreational Resources	Impacts to recreational resources are primarily visual, and limited to individuals using the resources. Four PLOTS parcels and multiple trails will be crossed by the generation outlet.	The generation outlet will follow an existing pipeline and BNSF railline route. Visual impacts will be minimized by placement of structures away from these features to the extent possible. Access to PLOTS and trials will be maintained.
Land Based Economies	A total of approximately 4.4 acres of land will be permanently impacted by the generation outlet construction (1.4 acres for the transmission line and 3.0 acres for the Pillsbury substation. Approximately 107.4 acres of temporary impacts are anticipated.	The Utilities will work with landowners to minimize impacts to their land. Prime farmland will be avoided to the extent practicable.
Soils	A total of approximately 1.4 acres of land will be permanently impacted by the transmission line construction. Approximately 107.4 acres of temporary impacts are anticipated. The project substation will occupy approximately 3.0 acres of land.	BMPs for erosion and sediment control will be utilized to minimize wind and water erosion along the route. Only land needed for the generation outlet will be permanently impacted. Temporarily disturbed areas that are not cultivated will be revegetated.
Geologic and Groundwater Resources	No impacts to geologic and groundwater resources are anticipated.	No mitigation measures are necessary.
Surface Water and Floodplain Resources	No impacts are anticipated to intermittent streams, drainageways or floodplain resources.	To minimize impacts during construction an NPDES permit and SWPPP will be prepared and submitted to the North Dakota of Health. No structures will be placed within a regulatory floodway.
Wetlands	No impacts are anticipated.	The Utilities will mitigate impacts according to USACE requirements. All additional wetlands will be avoided to the extent practicable.

Resource	Impact	Mitigation
Vegetation	A total of approximately 1.4 acres of land will be permanently impacted by the transmission line construction. Approximately 107.4 acres of temporary impacts are anticipated. The project substation will occupy approximately 3.0 acres of land.	The Utilities will work with the USFWS to minimize impacts. The Utilities will avoid existing trees and shrubs as practicable. Otter Tail Power will use BMPs during construction and operation to minimize impacts. Impacts to individual trees or shrubs will be replaced at a ratio of 2:1 and will be monitored for survival for five years. Temporarily disturbed areas will be reseeded per USFWS and NRCS recommendations.
Wildlife	Impacts to wildlife populations are expected to be minimal. Potential avian and bat collisions may occur, but are anticipated to be relatively small.	A variety of mitigation measures will be implemented, as discussed in section 5.15.3.
Rare and Unique Natural Resources	Impacts to rare and unique natural resources are not anticipated.	Surveys will be completed for wet prairie prior to construction to ensure that transmission structures can span the community. No mitigation additional mitigation measures are necessary.

6.0 PUBLIC COORDINATION

Keeping the public informed about the project's status is a key component to its success. Landowners who have entered into easement agreements with the Utilities are principal stakeholders in the project. The Utilities have provided written notice of the project in local newspapers, placed radio ads and personally contacted landowners whose property is crossed by the preferred route. In addition, he Utilities hosted two open house meetings to provide information about the project. On February 25, 2008, an open house was held at the city auditorium in Page, North Dakota, from 4 to 6 p.m.; and on February 26, 2008, an open house was held at the elementary school auditorium in Mapleton, North Dakota from 4 to 6 p.m. At each public open house, members of the public were able to review aerial photo-based route maps (at a scale of about 1-inch = 0.5-mile), typical structure drawings and discuss the project with Otter Tail Power representatives. A total of 73 members of the public attended the open house meetings. Public comments and suggestions were noted by the Utilities representatives and used to make minor route refinements, as appropriate.

On February 8, 2008, he Utilities provided a written notice about the project to county chairmen and auditors; township and city officers; and representatives and senators of districts within the study area. On February 19, 2008, the Utilities also invited each of them to the open house meetings. In addition, the Utilities have met with Cass and Barnes County Commissioners, and township and city officers representing the project area and their staff to inform them of the project, discuss local permit requirements and answer questions. The Utilities will continue to meet with county, city and township officials as the project moves forward to obtain local permits and approvals that have been identified. Currently, the Utilities has successfully coordinated with the county and township zoning commissions and supervisors in the study area to arrange a consolidated public hearing for several of the county and township permits, to be held at the same time as a statute-required annual meeting that is scheduled for March 18, 2008.

The Utilities have met with county area state legislators to inform them of the project. In addition, the Utilities has notified the key state agencies identified in NDAC 69.06.01.05 about the project, and notified key federal agencies including the U.S. Army Corps of Engineers, Fish and Wildlife Service and the Natural Resources Conservation Service. Issues raised by state and federal agencies are described in section 8.11 of the application and copies of correspondence are provided in appendix E.

The Utilities are committed to keeping key stakeholders engaged in the project as it moves forward. The Utilities will host another landowner meeting before the PSC public hearing if this is deemed appropriate, but this is not currently anticipated to be necessary.

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7.0 IDENTIFICATION OF REQUIRED PERMITS/APPROVALS

The federal and state permits or approvals that have been identified as potentially being required for the construction and operation of the project are shown in Table 27.

Table 27
Possible Permits and Approvals

Agency	Type of Approval	Status*	Need
Federal Approvals			
USACE	Section 404 Permit	3	Permit required for fill in jurisdictional waters of the US. If needed, authorization under Nationwide Permit 12 is anticipated.
Environmental Protection Agency	Spill Prevention Control and Countermeasure (SPCC) Plan	3	Required if the substation facility has greater than 1320 gallons of oil. A copy of the plan will be maintained on file with the substation's owner/operator and will be reviewed by the certifying engineer every five years.
Federal Aviation Administration	Acknowledgement of Receipt of Notice, FAA form 7460-1 and Receipt of Study Results	2	Notice of construction of line is required for three public airports. FAA will conduct study and report findings within 30-45 days of application.
BNSF Railroad	Temporary Occupancy Permit	2	Required for any geotechnical studies required for the project.
	Wire Line Crossing or Longitudinal Communication and Electric Permit	2	Required for a project that crosses or is within the railroad right-of-way.
State of North Dakota			
Public Services Commission	Waiver of Procedures and Time Schedules	1	Included herein.
	Certificate of corridor Compatibility	1	Included herein.
	Certificate of Public Convenience and Necessity	2	Certificate issued by the PSC indicating public need and convenience for the generation outlet from Pillsbury to Fargo. The Utilities will file at a later date in spring or early summer 2008
	Route Permit	1	Included herein.
North Dakota Department of Health	401 Water Quality Certification	3	Required for fill in jurisdictional waters of US. If needed, authorization under Nationwide Permit 12 is anticipated.

Agency	Type of Approval	Status*	Need
	NPDES Permit: General Construction Storm Water	2	Required for disturbance of over 1 acre of land. Must prepare a Storm Water Pollution Prevention Plan (SWPPP).
North Dakota Division of Emergency Management	Emergency Planning and Community Right-to-Know Act (EPCRA) Tier II report	2	Required for owner/operators of facilities containing hazardous materials. A copy of the report must be filed annually by March 1st.
SHPO	Permit to Investigate Effects on Cultural Resources	1	Compliance with NDCC 55-03 to assess the potential project effects to cultural resources.
	Section 106 Compliance Approval	3	Compliance with Section 106 of the NHPA is required if a project is considered a federal undertaking (i.e. federal funding, USACE.) Need for this compliance is not anticipated at this time due to the lack of a federal undertaking.
North Dakota Highway Patrol	Overheight/Overweight Permit	2	Permit required for hauling construction equipment and materials on state highways.
North Dakota Department of Transportation	Road Approach/Access Permit	2	Permit required for construction of access roads from state highways.
	Utility Permit/Risk Management Documents	2	Permit required for utility crossings on state highway right-of-way.
Local Permits			
Barnes County and Cass County Townships (Lake, Rich, Arthur, Amenia, Rush River, Harmony, Raymond, and Reed)	Conditional Use Permit	1	Permit required for project construction.
	Building Permit	1	Permit required for substation construction and generation outlet line.
	Haul Road Agreement	1	Permit required for hauling construction equipment and materials on County Roads.
	Utility Permit	1	Permit required for utility crossings on County road right-of-way.

* Status Explanation:

1 Applied – Decision Pending

2 Will Apply Once Certificate and Route Permit is Received

3 Final Layout will Determine Whether Permit/Approval is needed

8.0 FACTORS CONSIDERED

The North Dakota Energy Conversion and Transmission Facility Siting Act lists 11 factors to guide the commission in evaluation of the corridor and route.

8.1 PUBLIC HEALTH AND WELFARE, NATURAL RESOURCES, AND THE ENVIRONMENT

The preceding sections discuss the research and investigations relating the effects of the proposed facility on public health and welfare, natural resources, and the environment. The effects and mitigation in relation to the corridor and route are discussed in the impact and mitigation of section 5.0. Impacts evaluated in the corridor and route are minor.

8.2 TECHNOLOGIES TO MINIMIZE ADVERSE ENVIRONMENTAL EFFECTS

The Utilities will utilize the most recent technologies that minimize impacts to the environment. The corridor study and consequently the route structures proposed for the project are the most appropriate technologies to minimize adverse environmental effects. This is evident in the minimal environmental effects identified in this application associated with the project.

8.3 POTENTIAL FOR BENEFICIAL USES OF WASTE ENERGY

This factor is not applicable to this project.

8.4 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS OF THE ROUTE

Unavoidable adverse environmental effects include the visual impacts and physical impacts to the land (primarily agricultural land) associated with the project. The Utilities will implement measures as described in the environmental analysis herein and as identified by regulatory agencies to minimize these unavoidable adverse environmental effects.

8.5 ALTERNATIVES TO THE PROPOSED CORRIDOR OR ROUTE

The Utilities did not identify any other alternatives to the proposed corridor because the proposed corridor seemed to meet the requirements prescribed by the PSC. The corridor that was studied was selected to convey energy from the proposed wind generation facilities to the Maple River substation for integration into the power grid.

Alternatives to the route segments are being considered based on input the Utilities received during the open houses and input from agency responses. Significant changes to the route have been rejected due to

the exclusion and avoidance criteria within the route. The proposed route presented in this application minimizes and avoids impacts to the exclusion, avoidance, and selection criteria.

8.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF NATURAL RESOURCES FOR THE CORRIDOR OR ROUTE

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

Construction resources that will be used include aggregate resources, concrete, steel, and hydrocarbon fuel. These resources will be utilized to construct the project. During construction vehicles will be traveling to and from the site, utilizing hydrocarbon fuels.

8.7 DIRECT AND INDIRECT ECONOMIC IMPACTS OF THE PROPOSED FACILITY

Direct economic impacts include the impacts associated with up to 1.4 acres of agricultural land being removed from production due to the construction of the transmission line and associated facilities. In general, agricultural areas surrounding each structure can still be farmed, and landowners will be compensated for the land occupied by the transmission line and associated facilities.

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

Long-term beneficial impacts to the county's tax base as a result of the construction and operation of the wind farm will contribute to improving the local economy in this area of North Dakota. The development of wind energy in this region will be important in diversifying and strengthening the economic base of central North Dakota. Additional revenues are expected from property and income taxes.

8.8 EXISTING DEVELOPMENT PLANS OF THE STATE, LOCAL GOVERNMENT AND PRIVATE ENTITIES AT OR IN THE VICINITY OF THE CORRIDOR AND ROUTE

No conflicts are anticipated with existing state and local government and private entities' development plans. The Utilities are obtaining conditional use permits from local governmental units for the proposed project facilities.

8.9 EFFECT OF ROUTE ON CULTURAL RESOURCES

The Utilities have reviewed cultural resources information on file at the SHPO for the corridor and route and prepared the Class I Cultural Resources Inventory. A review of 14 documented studies and additional records at the SHPO identified one previously recorded archaeological resource and one archaeological site lead within one mile of the proposed transmission line corridor (Table 19). There are no previously identified cultural resources within the project corridor or route.

The Utilities are committed to minimize impacts to these resources and will avoid these resources and any additional resources identified throughout the life of the project. The Utilities continue to consult with the SHPO in anticipation of the Class III inventory. Many of the potential archaeological resources in the area may be avoided due to the nature of transmission line construction, where the line can be constructed to avoid sensitive areas by moving proposed structure locations and spanning those areas. In the event that an impact cannot be avoided, the Utilities would determine the nature of the impact and consult with the SHPO on whether or not the resource was eligible for listing in the National Register of Historic Places (NRHP). Mitigation for project-related impacts on NRHP-eligible archaeological resources may include an effort to minimize project impacts on the resource and/or additional documentation through data recovery.

If the Class III cultural resources inventories should determine that such a plan is appropriate, the Utilities will also develop a discovery plan to be in place should previously unknown archaeological resources or human remains be inadvertently encountered during the project. The plan will outline the framework for handling such discoveries in an efficient and legally compliant manner. The discovery plan may include the following topics: construction contractor training, identification of resources in the field, contact information for the Utilities -designated professionals to address a discovery, procedures for avoidance, and associated tasks in the event of work stoppage in a construction area. With regard to a discovery of human remains, procedures would be followed to ensure that the appropriate authorities would become involved quickly and in accordance with local and state guidelines.

There are no anticipated impacts to paleontological resources because the site is covered with over 100 feet of glacial sediments overlying the Cretaceous Fox Hills Formation.

8.10 EFFECT OF ROUTE ON BIOLOGICAL RESOURCES

Otter Tail Power has implemented measures to avoid and minimize effects to biological resources in the vicinity of the proposed site. The impact of the project on wildlife is expected to be minimal. The proposed facilities will include measures to minimize impacts to avian species.

8.11 PROBLEMS RAISED BY AGENCIES

Agencies were contacted to comment on the generation outlet in a letter sent on February 8, 2008, except as noted below. A copy of the letter sent to each agency is provided in appendix E and a summary of comments received in response are provided below. Where applicable, letters and other correspondence received from agencies are also provided in appendix E.

8.11.1 North Dakota Game and Fish Department

The NDGF reviewed the project site for wildlife concerns. On February 28, 2008, they commented on the presence of wetlands in the corridor. They asked that wetlands be protected and that existing drainage be maintained. NDGF noted that the Sheyenne and Maple Rivers are considered fishery resources. They requested that if construction is necessary in these waterways, that it be completed before April 15 or after June 1 to protect the fishery resources during the primary spawning season. NDGF asked that controls be implemented to minimize erosion and sedimentation into streams, destruction of woody vegetation minimized and disturbed non cultivated areas seeded with suitable native grass and forb species.

As noted in sections 5.9.2, 5.9.3, and 5.14.3, impacts to woodlands and vegetation will be minimized, BMPS for erosion control will be implemented, and disturbed non cultivated areas will be seeded with NRCS and USFWS seed mixes as necessary.

8.11.2 U.S. Fish and Wildlife Service

Concerns of the USFWS focused on migratory birds, USFWS property interests, and threatened and endangered species. In relation to migratory birds, the USFWS asked that transmission line be buried or that overhead power lines be constructed in accordance with the current guidelines for preventing raptor electrocutions. Otter Tail Power will coordinate with the USFWS to identify areas of concern and will implement mitigation measures to minimize impacts to migratory birds as required.

Otter Tail Power has obtained the information for the wetland and grassland easements leased by the USFWS. Otter Tail Power proposes to work closely with the USFWS to minimize impacts to these lands. Habitats within the project site such as native prairie and wetlands were highlighted as USFWS areas of concern. USFWS wetland easements are held throughout the project site. Any direct impacts to wetlands or grasslands within the respective USFWS easements will result in a compatibility assessment from local USFWS staff. The process will consider the magnitude of the impact, the type or quality of the habitat

which is impacted, and the feasibility of avoiding the impact. If compatibility is found, a right-of-way permit will be issued for the impact.

USFWS recommended that the project avoid native prairie habitat in order to minimize impacts to the Dakota skipper, a small to medium-sized hesperiine butterfly, which was listed as a candidate species to the Endangered Species List. If Dakota skipper habitat is present along the proposed route, USFWS recommended that qualified biologist complete surveys for the Dakota skipper in the potential habitat areas. Otter Tail Power will survey for native prairie as part of its planned wetland survey in early spring, 2008.

The USFWS also recommended a series of mitigation measures to minimize impacts to existing habitats in their letter to the Utilities (appendix E). The Utilities will implement these measures as they are applicable to the project. The proposed route currently avoids all wetlands on USFWS property interests.

8.11.3 U.S. Army Corps of Engineers

The Corps responded on February 20, 2008, that permits should be requested if work will be done in navigable waters (under Section 10 of the Rivers and Harbors Act) or Waters of the United States (under Section 404 of the Clean Water Act). The proposed route is currently anticipated to avoid all wetlands.

8.11.4 State Historical Society of North Dakota (SHPO)

On February 11, 2008, the SHPO recommended that a Class I cultural resources inventory be completed for areas that may be impacted by the project. They also stated that a Class III cultural resources inventory may also be necessary for locations of the project that have received no previous field survey. The Utilities have completed the Class I cultural resources inventory. Fifteen cultural resources reports were identified within the study area. A review of these studies and additional records at the SHPO identified 15 previously recorded cultural resources and nine cultural site leads (Table 19).

The Utilities are committed to minimize impacts to these resources and will make all efforts to avoid these resources and any additional resources identified throughout the life of the project. The Utilities continues to consult with the SHPO in anticipation of the Class III inventory. Many of the potential cultural resources in the area may be avoided due to the nature of transmission line construction, where the line can be constructed to avoid sensitive areas by moving proposed structure locations and spanning those areas. In the event that an impact cannot be avoided, the Utilities would determine the nature of the impact and consult with the SHPO on whether or not the resource was eligible for listing in the National Register of Historic Places (NRHP). Treatment for project-related impacts on NRHP-eligible cultural resources may include an effort to minimize project impacts on the resource and/or additional documentation through data recovery.

If the Class III cultural resources inventories should determine that such a plan is appropriate, the Utilities would also develop a discovery plan to be in place should previously unknown cultural resources or

human remains be inadvertently encountered during the project. The plan would outline the framework for handling such discoveries in an efficient and legally compliant manner. The discovery plan may include the following topics: construction contractor training, identification of resources in the field, contact information for the Utilities-designated professionals to address a discovery, procedures for avoidance, and associated tasks in the event of work stoppage in a construction area. With regard to a discovery of human remains, procedures would be followed to ensure that the appropriate authorities would become involved quickly and in accordance with local and state guidelines.

8.11.5 North Dakota Geological Survey

The North Dakota Geological Survey did not provide any comments.

8.11.6 North Dakota Parks and Recreation Department

The NDPR indicated on February 28, 2008, that the generation outlet would not affect state park lands. They did note that there were several parks in the corridor that have received LWCF grants for recreation improvements. Upon further coordination with NDPR, these park areas were found to be well outside of the generation outlet route.

The NDPR conducted a search for rare plants and ecological communities in the North Dakota Natural Heritage Conservation database. See section 5.14 for a description of these resources. The Utilities are committed to working with the NDPR in conjunction with the USFWS, NRCS, and NDGF to seed disturbed areas with appropriate seed mixes.

8.11.7 North Dakota Office of Attorney General

On February 11, 2008, the Attorney General's Office responded that the Attorney General and members of his staff are prohibited from giving legal advice, opinions, or assistance to private businesses (appendix E).

8.11.8 North Dakota Department of Commerce

On February 12, 2008, the North Dakota Department of Commerce expressed support for the project and noted no permits are required from the Department of Commerce. In addition, they deferred to the NDGF, NDPR, SHPO and the North Dakota Health Department (NDHD) for permitting requirements. They noted that the local land use authorities and the North Dakota Public Service Commission are responsible for permits and land use approvals (appendix E).

8.11.9 North Dakota Department of Health

The NDHD responded on February 14, 2008. They believe that the environmental impacts will be minor and can be controlled by proper construction methods. The NDHD provided comments and guidance on fugitive dust emissions, degradation of waterways, storm water management, and noise in their letter (appendix E). Otter Tail Power will implement these measures, as appropriate.

8.11.10 North Dakota Department of Transportation

The North Dakota Department of Transportation asked on February 26, 2008 that the Utilities obtain the appropriate permits and risk management documents from the Valley City and Fargo District offices (appendix E).

8.11.11 North Dakota State Water Commission

The Office of the State Engineer/State Water Commission indicated on February 27, 2008, that permits, including a Sovereign Lands Permit will not be needed if the generation outlet spans state water bodies and riverbeds including the Rush and Sheyenne rivers. The State Water Commission also provided information regarding irrigation permit locations. Per section 69-06-08-02-2, the Utilities avoided irrigated lands when siting the generation outlet (appendix E)

On March 12, 2008, the State Water Commission provided information about floodplains in the project area and noted that permits may be required if structures are placed in a regulatory floodway. Based on review of this information, it does not appear the Utilities will affect any regulatory floodways (appendix E).

8.11.12 Natural Resources Conservation Service

The NRCS did not respond.

8.11.13 North Dakota State Land Department

The State Land Department did not respond.

8.11.14 Aeronautics Commission

The Aeronautics Commission responded via Email on February 22, 2008, that there are three public airports in the corridor, in Arthur, Page, and West Fargo. They suggested that the Utilities contact FAA and initiate consultation under Form 7460. The consultation would identify impacts/obstructions to the public airports. The study takes 45-60 days. The Aeronautics Commission also suggested that the Utilities complete a search of private airports that may be used as business bases for aerial spray companies. The Utilities have initiated these efforts.

8.11.15 North Dakota Department of Agriculture

The North Dakota Department of Agriculture did not respond.

8.11.16 North Dakota Department of Human Services

The North Dakota Department of Human Services did not respond.

8.11.17 North Dakota Department of Labor

The North Dakota Department of Labor did not respond.

8.11.18 Job Service North Dakota

On February 11, 2008, the Job Service North Dakota responded that they have no comments regarding the proposed project and have no applicable permits that are required.

8.11.19 North Dakota Department of Career and Technical Education

The North Dakota Department of Career and Technical Education did not respond.

8.11.20 North Dakota Governor

The North Dakota Governor did not respond.

8.11.21 North Dakota Indian Affairs Council

The North Dakota Indian Affairs Council did not respond.

8.11.22 North Dakota Office of Management and Budget

The North Dakota Office of Management and Budget did not respond.

8.11.23 North Dakota Soil Conservation Committee

The North Dakota Soil Conservation Committee did not respond.

8.11.24 Eastern Dakota Irrigation District

Eastern Dakota Irrigation District (EDID) responded on February 20, 2008, that there are irrigation facilities in the area. They suggested that the Utilities contact Rex Honeyman at the State Water Commission for a comprehensive list of the irrigation facilities in the area. The EDID stated they will cooperate with the Utilities in locating the transmission line so that it does not interrupt irrigation facilities in the region. Subsequent to this information, the Utilities worked with the EDID to move its route to avoid impacting irrigated lands in the vicinity of the EDID, and this change was understood to be acceptable to the EDID.

8.11.25 Cass County Highway Department

The Cass County engineer responded on February 14, 2008, that County zoning regulations are administered at the local level including townships and incorporated cities. He suggested that the Utilities contact these entities.

Additional coordination with the planning division of the highway department confirmed that the only county park in the corridor was Bremer Lake Park and campground adjacent to Eire Dam WMA. This park will be avoided.

8.11.26 City of Fargo Planning Department

The Fargo city planner indicated on March 6, 2008 that per discussions with the Utilities and review of the corridor, that the City did not have concerns with generation project related to City resources or jurisdiction.

8.11.27 North Dakota Farm Service Agency

The North Dakota Farm Service Agency (FSA) provided data on CRP lands on March 13, 2008. Based on review of this data, CRP lands will be crossed by the proposed route, as shown on figure 17. Where CRP lands are crossed and acreage is removed from production (subject to final pole placement), the landowners may have to work with the FSA to address the CRP status associated with these lands. For impacts to CRP status, the Utilities will negotiate to compensate landowners for impacts.

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9.0 QUALIFICATIONS OF CONTRIBUTORS TO SITING STUDY

NAME PROJECT ROLE	EDUCATION AND PROFESSIONAL EXPERIENCE
MICHELLE BISSONNETTE Vice President, Senior Environmental Consultant	Ms. Bissonnette supervises the Environmental and Resource Management Department and manages environmental assessment and permitting efforts as well as designs, manages, and conducts land reclamation and wetland restoration activities. She develops site-specific aesthetic assessments, designs visual improvement plans, and oversees revegetation plans. She is also responsible for developing computer-aided design graphics for presentations. As an environmental consultant, Ms. Bissonnette is responsible for researching compliance requirements for federal state and local permits. She works closely with regulatory agencies on utility and transportation related projects. She has worked on a variety of utility projects from power generation to transmission and distribution as well as wind, pipeline, and combustion turbine projects. She has also worked on a number of roadway, railroad and river corridor projects. B.S., Landscape Architecture, University of Minnesota, 1982 Foreign Studies/French Minor, University of Grenoble, France, 1977
MITCHELL SHIELDS Senior Project Manager	Mr. Shields serves as a senior environmental project manager for HDR. He has 19 years of experience including 12 years in the energy industry, primarily in permitting and construction for new linear facilities (e.g., pipeline, transmission line, and rail lines). He is an expert in preparing NEPA documentation, feasibility studies, and other federal, state, and local reports and regulatory applications. He has reviewed and developed project plans, proposals, and schedules; completed due diligence reviews for asset acquisitions; conducted meetings with agencies, stakeholders, and the general public; led field investigations, right-of-way reviews, and alternatives analyses; managed environmental compliance services during construction; provided environmental training presentations; and managed contractors/subcontractors/staff, delegated work assignments, and prepared and managed large budgets. Master of Science, Civil/Environmental Engineering, University of Minnesota, 1989 Bachelor of Science, Biology, Winona State University, 1985, Magna Cum Laude
AMY KENNEDY Senior Project Manager	Ms. Kennedy currently is a Senior Project manager with over 10 years experience focused on National Environmental Policy Act documents. In managing and contributing to NEPA studies she has developed evaluation processes in response to key environmental and community issues; led and managed agency and public involvement programs; helped spearhead Context Sensitive Solutions programs; 4(f)/6(f) studies, and the completion of NEPA Decision Documents. Master of Science, Environmental Sciences/Studies, University of North Texas, 1996 Bachelor of Science, Environmental Sciences/Studies, University of Rochester, 1994

NAME PROJECT ROLE	EDUCATION AND PROFESSIONAL EXPERIENCE
LAURA LUTZ-ZIMMERMAN Environmental Scientist	Ms. Laura Lutz-Zimmerman has seven years experience in National Environmental Policy Act (NEPA) documentation and environmental/construction permitting. She has worked on highway, railroad, ethanol plant, earthquake monitoring station, and water delivery projects. She has prepared and managed consultants in the preparation of environmental documents and studies for compliance with NEPA, Section 4(f), and applicable environmental laws and executive orders. She has worked with several federal and state agencies on environmental documents and permitting issues including the BLM, USFS, and USFWS. Laura has served as a reference person to cities and counties for NEPA related matters and was involved with numerous project management teams for highway projects as a specialist for non-environmental DOT staff. M.C.R.P., Community and Regional Planning, Iowa State University, 2001 M.L.A, Landscape Architecture, Iowa State University, 2001 B.A., Chemistry, University of Wyoming, 1997 B.S., Biology, University of Wyoming, 1997
SARAH EMERY, PG Senior Environmental Scientist HDR Engineering	Ms. Emery is a Senior Environmental Scientist with over eleven years of experience as an environmental consultant. She is experienced in wetland delineation, permitting, and mitigation; biological resource inventories; NEPA/environmental permitting; Phase I environmental assessments; and hydrogeology and remedial investigation of contaminant impacts to soil and ground water. She is experienced with resource evaluation and micrositing at utility-scale wind facilities. Registered Professional Geologist, Minnesota, No. 30677, 1999 M.S., Geological & Related Sciences (Geology), University of MN Twin Cities, 1996 M.S., Natural Resources (Forestry), University of MN Twin Cities, 1994 B.S., Environmental Sciences/Studies (Fisheries and Wildlife), Michigan State University, 1985
DAN SCHMIDT GIS Manager HDR Engineering	Mr. Schmidt is responsible for Geographic Information Systems (GIS) development in civil, environmental, and architectural areas. He works with ArcGIS, ArcView, and a variety of system support software. He provides development of GIS databases, spatial analysis, GPS data collection and analysis, and mapping services. Mr. Schmidt has extensive experience in GIS evaluation and micrositing of utility-scale wind projects. M.A., Geography – Geographic Information Systems, Western Illinois University, 1994 B.A., Geography, University of Illinois at Chicago, 1991

NAME PROJECT ROLE	EDUCATION AND PROFESSIONAL EXPERIENCE
TIFFANY HAUGH GIS Specialist HDR Engineering	Ms. Haugh is a GIS Specialist with more than 10 years of experience in the industry. She has provided GIS work on several HDR projects, including the Arapahoe County, Colorado, ACWWA 2007 Master Plan, the City of Aspen, Colorado, Slip-Shot Feasibility Analysis, and the Colorado Department of Transportation's Interstate 25 Corridor Project. Associate of Science, Occupational Studies, Technical Trades Institute, 1997
BRUCE MOREIRA Environmental Scientist HDR Engineering	Mr. Moreira has three years of experience in wetland delineation, GIS systems, regulatory documentation, and project management. He specializes in wetland delineation, GIS mapping and data collection, plant ecology, database construction/support, and natural resource management. He has a basic knowledge of AutoCAD systems and file transfer between GIS and CAD programs. He has field experience with Trimble, Leica, CMT and Garmin GPS units and their maintenance. M.S., Forestry, Department of Forest Resources, University of Minnesota, 2001 B.A., Biology, Reed College, Portland, Oregon, 1997
TIM CASEY, QEP Environmental Specialist HDR Engineering	Mr. Casey is HDR's Environmental Acoustics Program Manager and has over ten years of experience leading HDR's Environmental Acoustics efforts. He specializes in noise and vibration monitoring and modeling for stationary and mobile sources including railroads, highways, combustion turbines, diesel generators, pumps, industrial and municipal installations, etc. Extensive use of the FHWA Stamina 2.0/Optima model, FTA transit noise and vibration analysis methodologies, and PC-based GIS technology. Additional training and experience on FHWA Traffic Noise Model (TNM) 1.0. Mr. Casey's experience includes presentations at public meetings, before city councils, and expert witness testimony for projects in locations throughout the United States and Puerto Rico. Mr. Casey holds the professional certification of Qualified Environmental Professional (QEP). B.S., Biological/Life Sciences, Saint Xavier University, 1988 A.S., Science, Valley Community College, 1986
TONY RANDAZZO Environmental Scientist HDR Engineering	Mr. Randazzo is a Landscape Architect with eight years of professional experience in natural areas management, inventory, and environmental design. His diverse professional experience has focused on restoration ecology, performing natural community inventories, specification, design, and education as adjunct professor teaching environmental and community design at the University of Minnesota. Mr. Randazzo has performed landcover mapping, planting event organization and leadership, wetland delineation, and hydrologic studies in both urban and undeveloped natural area settings. Design specialties include steam restoration, wetland restoration, and site design using native plant species. He has performed threatened and endangered species (TES) surveys and TES impact analysis throughout the Midwest. Master of Landscape Arch, Landscape Architecture, University of Minnesota Twin Cities, 2000 Master of Arts, History, Macalester College, 1986

NAME PROJECT ROLE	EDUCATION AND PROFESSIONAL EXPERIENCE
TIM AHRENS Document Production Specialist HDR Engineering	Mr. Ahrens has four years of editing and writing experience. After time spent working as a writer and copy editor for newspapers in the Midwest, he has been a part of HDR's document production team for just less than a year. Projects he has edited include the BIA Flathead Lake, Montana, Environmental Impact Statement and the PPM Dry Lake, Arizona, Environmental Assessment B.A., Communication and Journalism, University of Wisconsin-Eau Claire, 2004.

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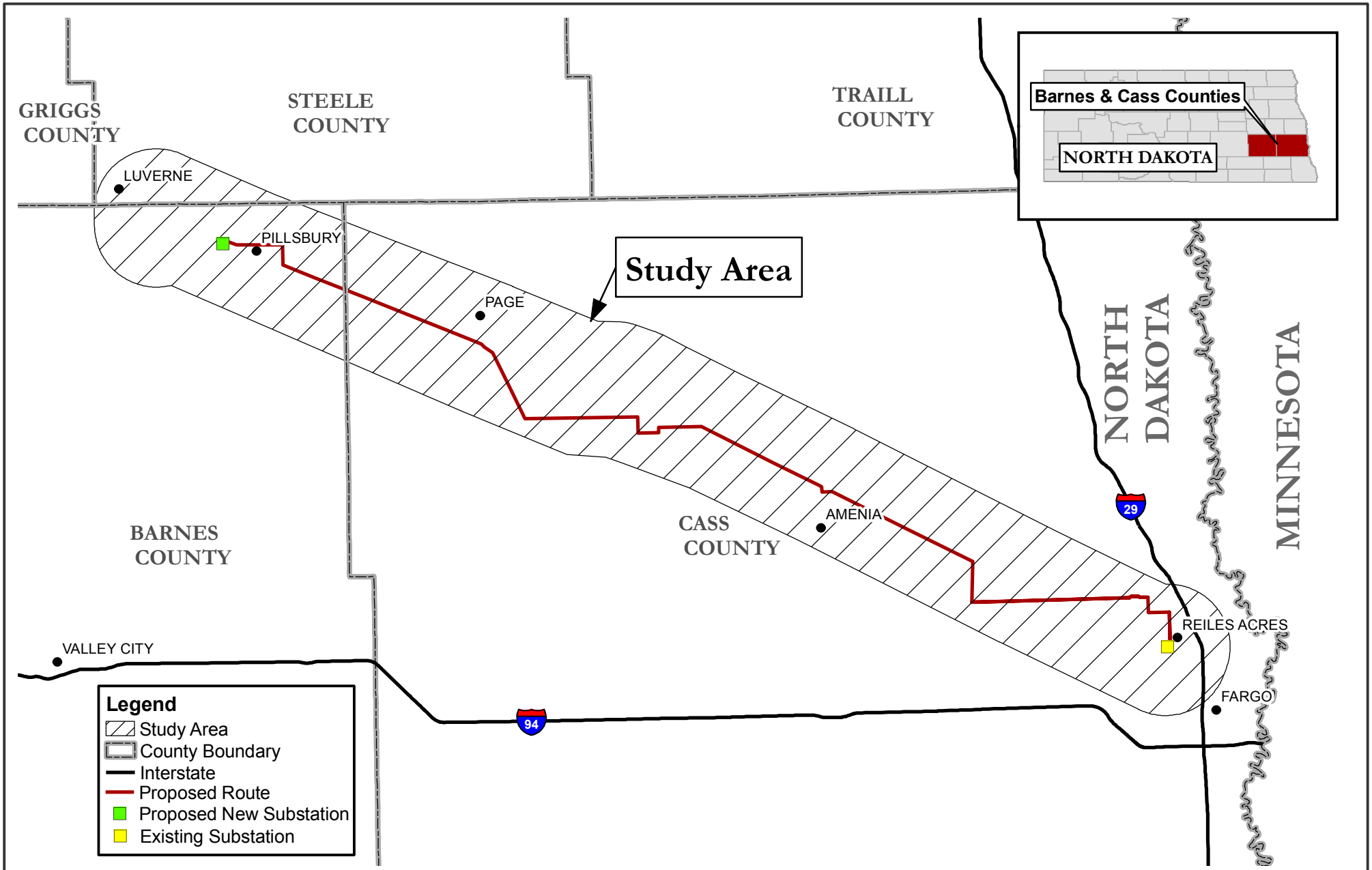
11.0 DEFINITIONS

ADT	Average Daily Traffic
BMPs	Best Management Practices; prevents soil erosion and sedimentation
Capacity	The capability of a system, circuit, or device for storing electric charge.
Certificate	Certificate of Site Compatibility
Class I Cultural Resources Inventory	Existing data inventory – a large-scale review and compilation of known cultural resource data.
Class III Cultural Resources Inventory	Intensive field inventory – complete surface inventory of a specific area.
Commission or PSC	North Dakota Public Service Commission
CRP	Conservation Reserve Program
Corridor Certificate	Certificate of Corridor Compatibility
dBA	A-weighted decibel
Distribution	Relatively low-voltage lines that deliver electricity to the retail customer's home or business.
EMF	Electric and Magnetic Field
EPCRA	Emergency Planning and Community Right-to-Know Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
FSA	U.S. Department of Agriculture Farm Service Agency
Generator	A machine by which mechanical energy is changed into electrical energy.
Geotechnical	A science that deals with the application of geology to engineering.
Interconnection	To be or become mutually connected.

kV	kilovolt
mG	milliGauss
MW	megawatt
MAPP	Mid-Continent Area Power Pool
MISO	Midwest Independent System Operator
mph	miles per hour
NDDOT	North Dakota Department of Transportation
NESC	National Electric Safety Code
NDAC	North Dakota Administrative Code
NDCC	North Dakota Century Code
NDGF	North Dakota Game and Fish Department
NDPR	North Dakota Parks and Recreation Department
NHID	Natural Heritage Inventory Database
NIEHS	National Institute of Environmental Health Sciences
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
PLOTS	Public Land Open for Trapping and Shooting
PPA	Power Purchase Agreements
Project, the	Pillsbury – Fargo Generation Outlet
PSC or Commission	North Dakota Public Service Commission
PTC	Production Tax Credit
ROW	Right-of-Way

SCADA	Supervisory Control and Data Acquisitions (communications technology)
SHPO	North Dakota State Historic Preservation Office
Substation	A subsidiary station in which electric current is transformed.
SWPPP	Storm Water Pollution Prevention Plan
Transformer	An electrical device by which alternating current of one voltage is changed to another voltage.
Transmission	A high voltage power line usually in excess of 69 kilovolts made up of three current conducting wires and a static shield wire. Transmission lines are used to deliver bulk power.
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service
WPAs	Waterfowl Protection Areas
WMA	Wildlife Management Area

FIGURES



Prepared By:
HDR
February 2008

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OTTER TAIL POWER COMPANY

Figure 1
Project Vicinity Map
Pillsbury-Fargo Generation Outlet
Barnes and Cass Counties, North Dakota

OTTER TAIL POWER COMPANY

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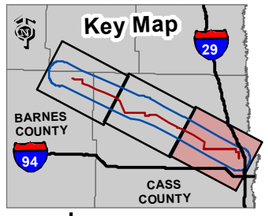
Pillsbury-Fargo Generation Outlet

Corridor/Route Exclusion And Avoidance Area Figure 2a

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- Urban Area
- Surface Water

Exclusion Areas

- Bremer Lake Park within Erie Dam
- Unique Habitat

Avoidance Areas

- USFWS WPAs
- NDGF WMAs
- Occupied House
- Residence Location (550 Foot Buffer)
- Active Irrigation Permits
- Snowmobile Trails
- Multi Use Trails

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

March 2008

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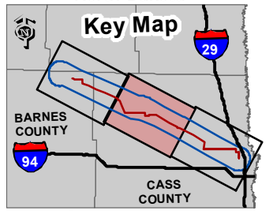
Corridor/Route Exclusion And Avoidance Area Figure 2b

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
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Miles

Prepared By:

HDR

March 2008

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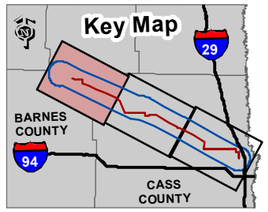
Corridor/Route Exclusion And Avoidance Area
Figure 2c

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
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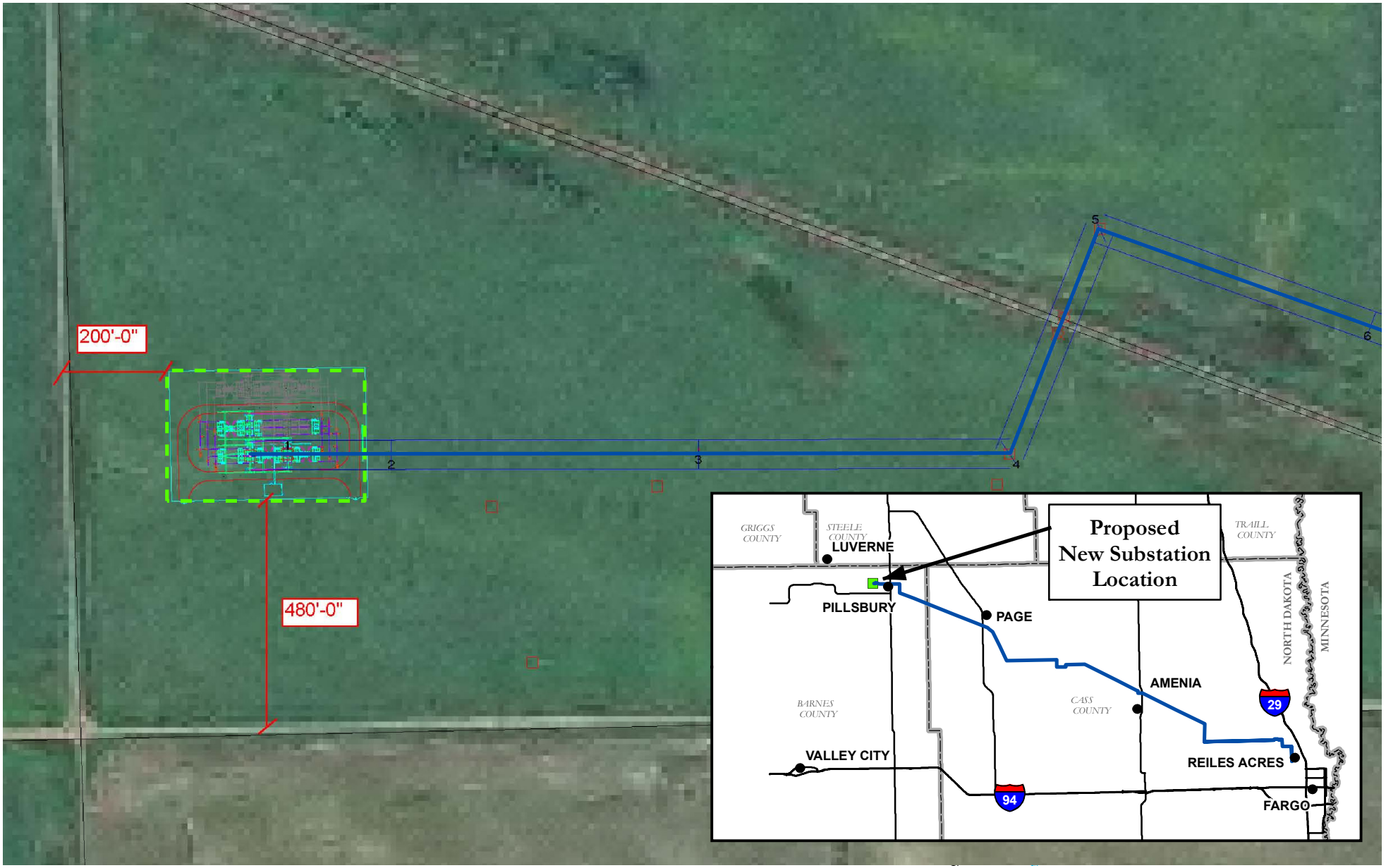

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March 2008

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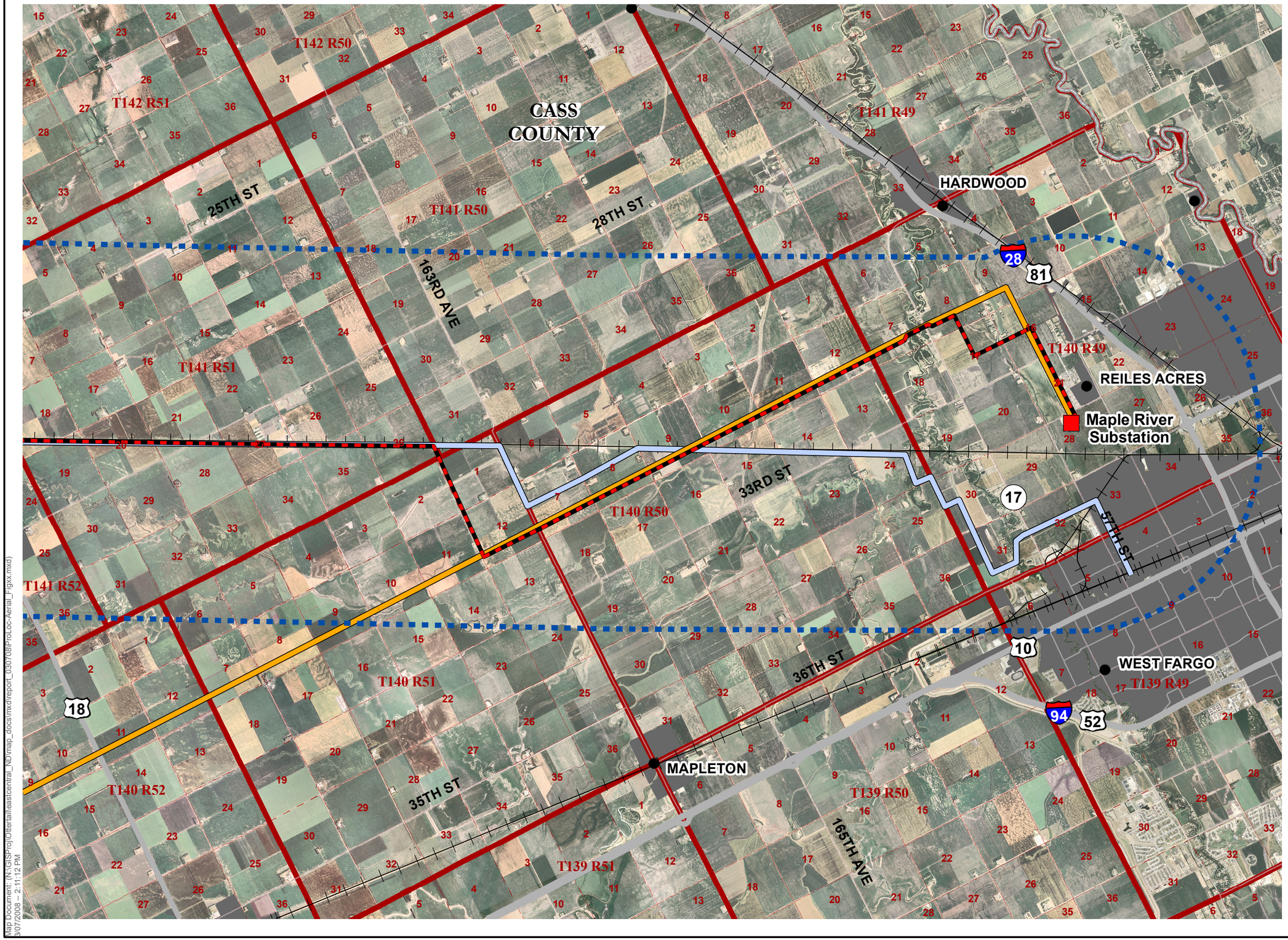
Figure 3
Proposed New substation Location
Pillsbury-Fargo Generation Outlet
Barnes and Cass Counties, North Dakota



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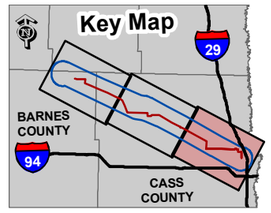
Pillsbury-Fargo Generation Outlet

Project Location Map
(Aerial)
Figure 4a

Barnes and Cass Counties,
North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Existing Pipeline
- Existing 345-kV Transmission Line
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- USFWS Urban Area

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:
HDR

March 2008

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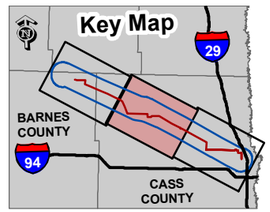
Project Location Map
(Aerial)
Figure 4b

Barnes and Cass Counties,
North Dakota



Legend

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- Existing 345-kV Transmission Line
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- USFWS Urban Area

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

March 2008

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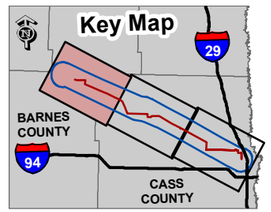
Project Location Map
(Aerial)
Figure 4c

Barnes and Cass Counties,
North Dakota



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March 2008

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CASS COUNTY

T142 R51 | T142 R50 | T141 R51 | T141 R50 | T141 R49 | T140 R51 | T140 R50 | T140 R49 | T141 R52 | T140 R52 | T139 R51 | T139 R50 | T139 R49

25TH ST | 163RD AVE | 28TH ST | 33RD ST | 57TH ST | 36TH ST | 35TH ST | 165TH AVE

HARDWOOD | REILES ACRES | WEST FARGO | MAPLETON

Maple River Substation

28 | 81 | 17 | 10 | 94 | 52 | 18

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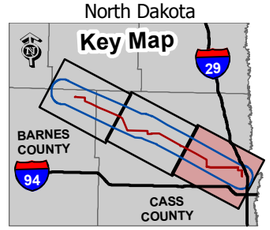
Project Location Map
(Topographical)
Figure 5a

Barnes and Cass Counties, North Dakota



Legend

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March 2008

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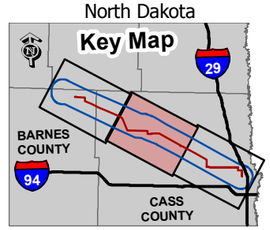
Project Location Map
(Topographical)
Figure 5b

Barnes and Cass Counties,
North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- USFWS Urban Area

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

March 2008

Map Document: (N:\GIS\Proj\Otertaileastcentral_ND\map_docs\mxd\report_030708\ProLoc-Topo_Fig5b.mxd)
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OTTER TAIL POWER COMPANY

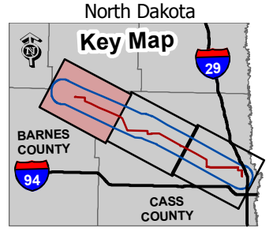
Minnkota Power COOPERATIVE, INC.

Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

Project Location Map
(Topographical)
Figure 5c

Barnes and Cass Counties,
North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- USFWS Urban Area

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

March 2008

Map Document: (N:\GIS\Proj\Otertaileastcentral_ND\map_docs\mxd\report_030708\ProLoc-Topo_Fig\xx.mxd)
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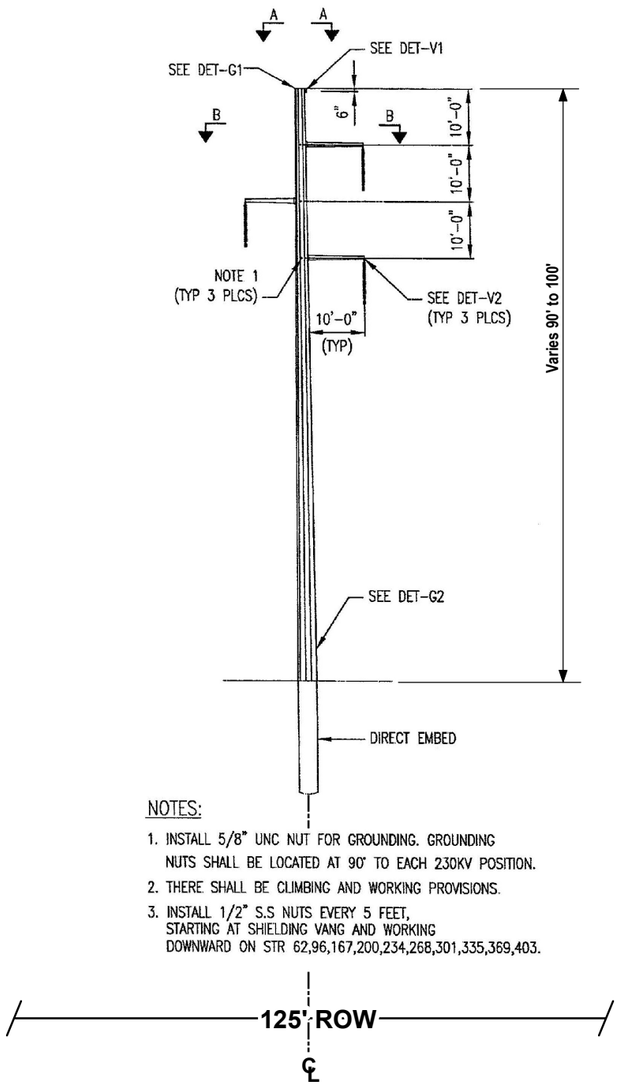
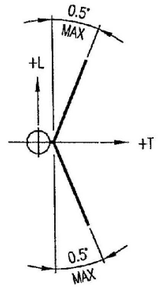
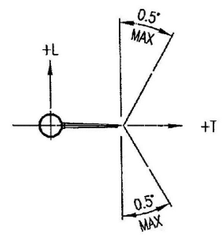
Tangent 0°- 1°
Steel Pole Point Loads





SECTION A–A
OPGW



SECTION B–B
230 kV: 1272 KCMIL "BITTERN"

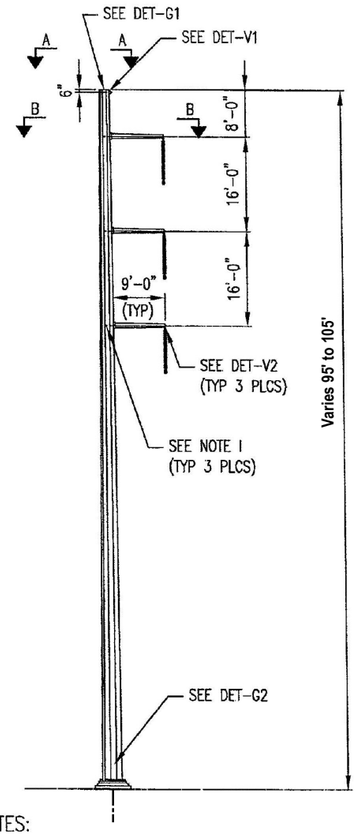
NOTES:

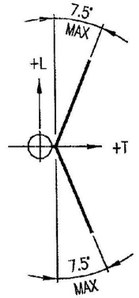
1. INSTALL 5/8" UNC NUT FOR GROUNDING. GROUNDING NUTS SHALL BE LOCATED AT 90° TO EACH 230KV POSITION.
2. THERE SHALL BE CLIMBING AND WORKING PROVISIONS.
3. INSTALL 1/2" S.S NUTS EVERY 5 FEET, STARTING AT SHIELDING VANG AND WORKING DOWNWARD ON STR 62,96,167,200,234,268,301,335,369,403.

125' ROW

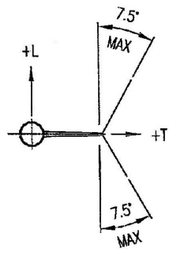
℄

Tangent 0°- 15°
Steel Pole Point Loads





SECTION A–A
AC – 64/528 OPGW



SECTION B–B
230 kV: 1272 KCMIL "BITTERN"

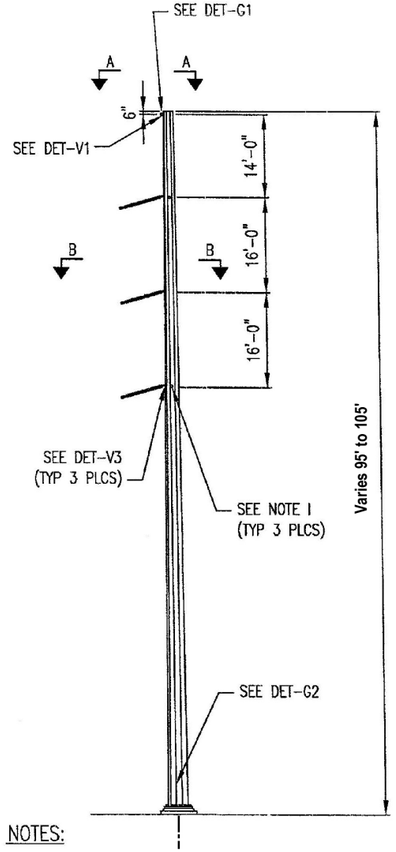
NOTES:

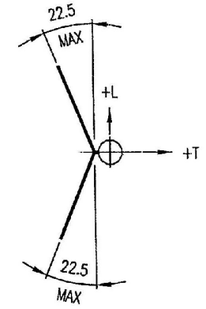
1. INSTALL 5/8" UNC NUT FOR GROUNDING. GROUNDING NUTS SHALL BE LOCATED AT 90° TO EACH 230KV POSITION.
2. THERE SHALL BE CLIMBING AND WORKING PROVISIONS.

125' ROW

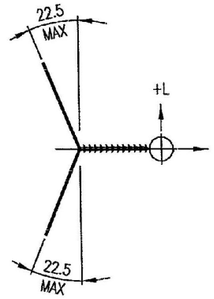
℄

Tangent 15°- 45°
Steel Pole Point Loads





SECTION A–A
AC – 64/528 OPGW



SECTION B–B
230 kV: 1272 KCMIL "BITTERN"

NOTES:

1. INSTALL 5/8" UNC NUT FOR GROUNDING. GROUNDING NUTS SHALL BE LOCATED AT 90° TO EACH 230KV POSITION.
2. INSTALL 1/2" S.S NUTS EVERY 5 FEET, STARTING AT SHIELDING VANG AND WORKING DOWNWARD ON STR 132.

125' ROW

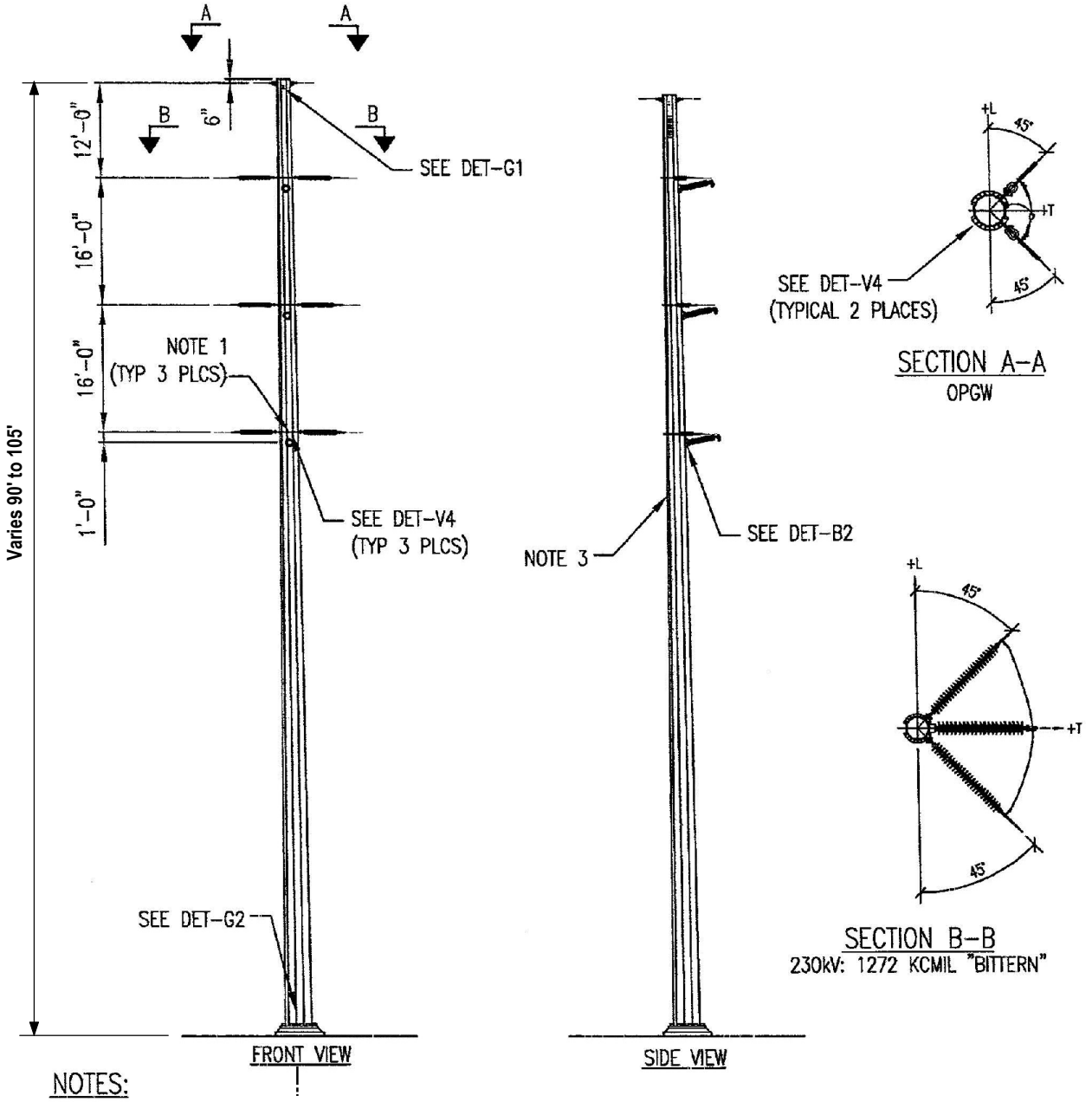
℄

Not To Scale

Prepared By:
HDR
March 2008

Figure 6
230-kV Mono-Pole Tangent Structures and ROW
Pillsbury-Fargo Generation Outlet
Barnes and Cass Counties, North Dakota

Dead End 0°- 90°
Steel Pole Point Loads



NOTES:

1. INSTALL 5/8" UNC NUT FOR GROUNDING. GROUNDING NUTS SHALL BE LOCATED AT 90° TO EACH 230KV POSITION.
2. THERE SHALL BE CLIMBING AND WORKING PROVISIONS.
3. INSTALL 1/2" S.S NUTS EVERY 5 FEET, STARTING AT SHIELDING VANG AND WORKING DOWNWARD ON STR 29.

125' ROW

Not To Scale

Prepared By:
HDR
March 2008

Minnkota Power Cooperative, Inc.
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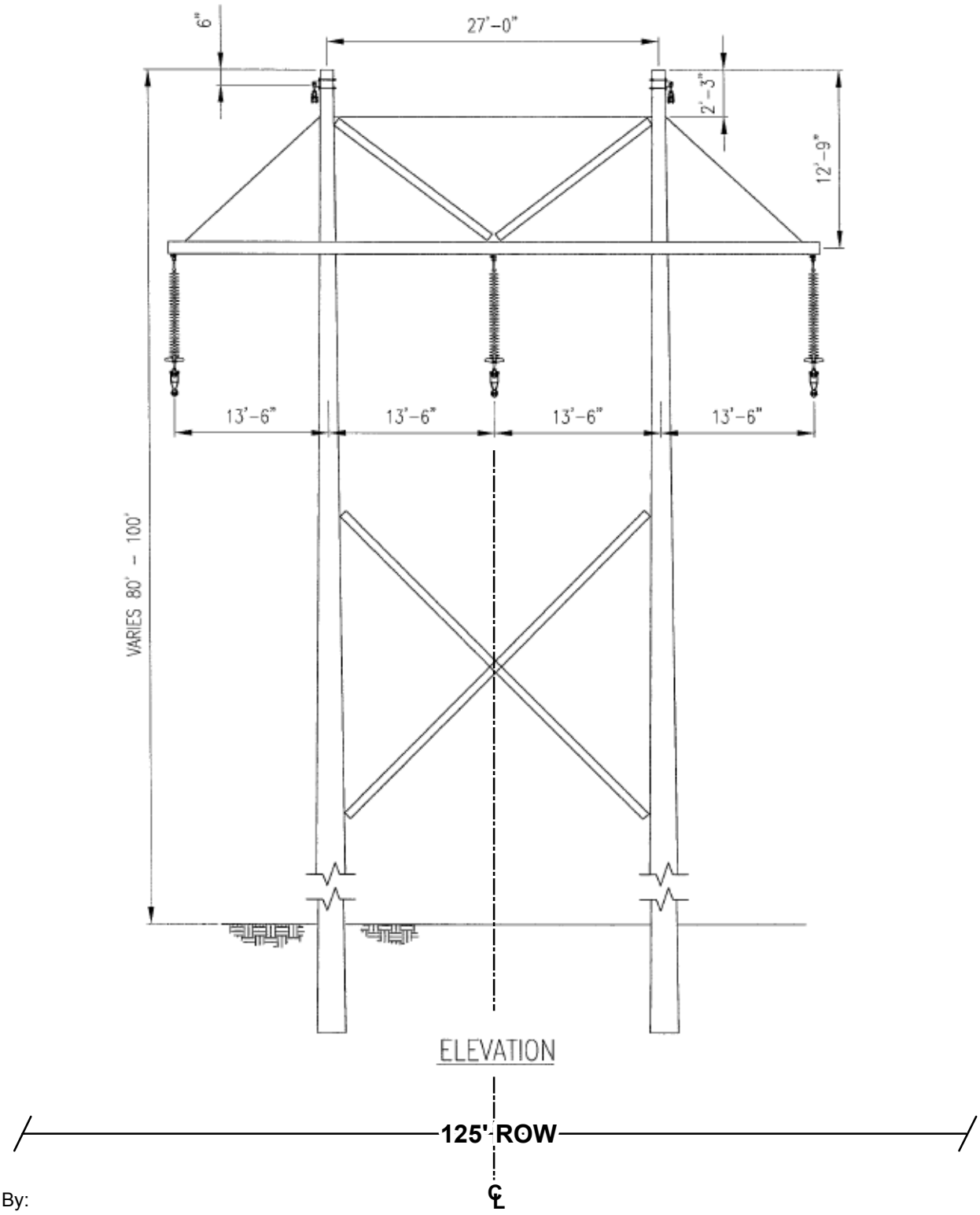
Otter Tail Power Company

Figure 7
230-kV Mono Pole Dead End Structure and ROW
Pillsbury-Fargo Generation Outlet
Barnes and Cass Counties, North Dakota



Prepared By:
HDR
March 2008

Not To Scale

Minnkota Power COOPERATIVE, INC.
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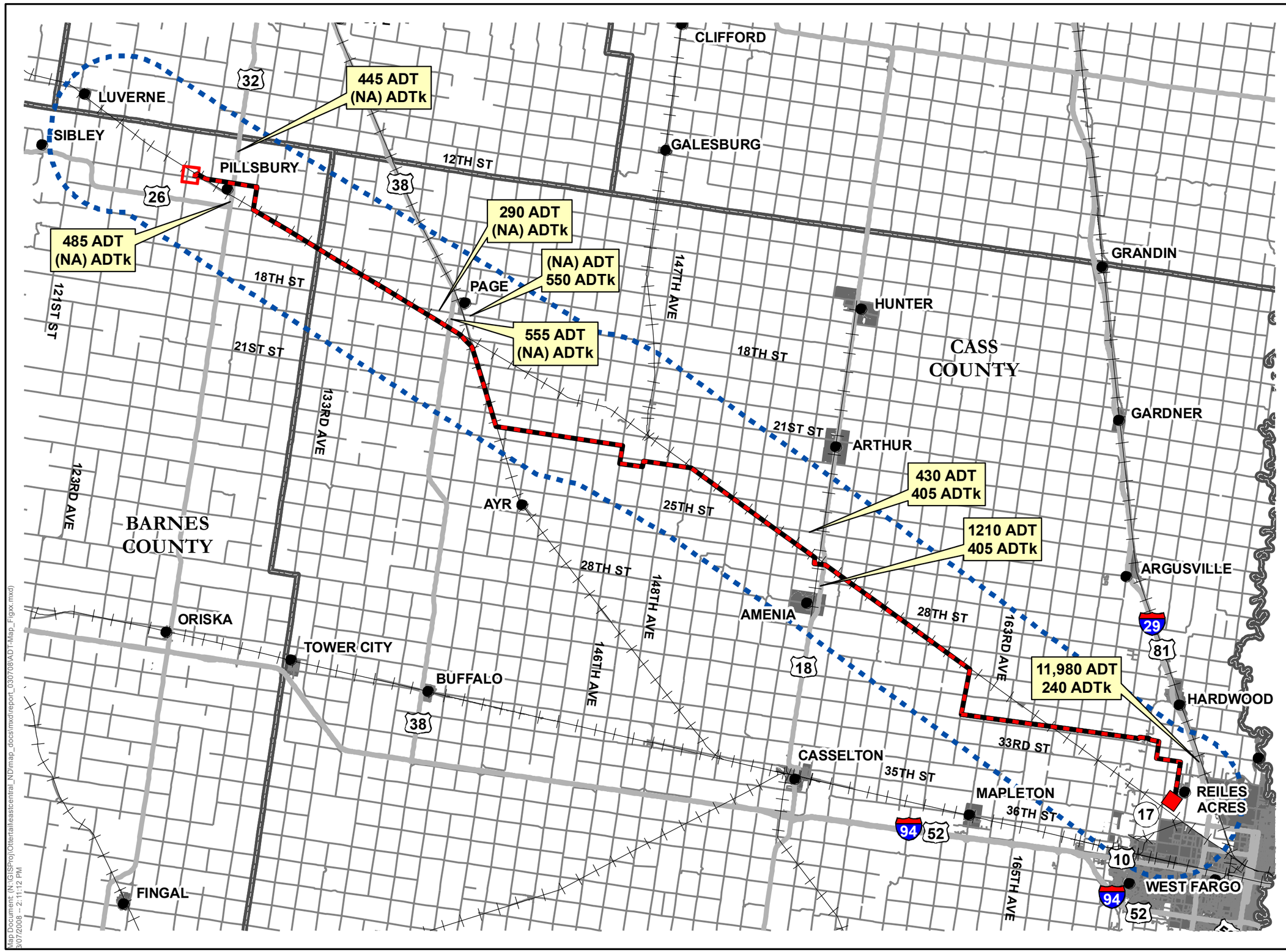
OTTER TAIL POWER COMPANY

Figure 8
230-kV H-Frame Pole Structure and ROW
Pillsbury-Fargo Generation Outlet
Barnes and Cass Counties, North Dakota



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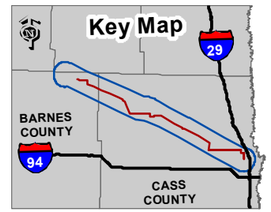
Pillsbury-Fargo Generation Outlet
Average Daily Traffic Map
Figure 9

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- Roadway
- County Line
- Urban Area
- **ADT** Average Daily Traffic
- **ADTk** Average Daily Truck Volumes

0 1 2 3 4 5
Miles

Prepared By:
HDR
March 2008

Map Document: (N:\GIS\Proj\OtterTail\eastcentral_ND\map_docs\mxd\report_030708\ADT-Map_Fig(x.mxd)
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Prepared By:
HDR
February 2008

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Figure 10
Existing Environment-Typical Pipeline/Railroad Corridor
Pillsbury-Fargo Generation Outlet
Barnes and Cass Counties, North Dakota

Prepared By:
HDR
February 2008

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Figure 11
Existing Environment-Typical 345-kV Corridor
Pillsbury-Fargo Generation Outlet
Barnes and Cass Counties, North Dakota

Prepared By:
HDR
February 2008

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Figure 12
Existing Environment-Proposed New Substation Site
Pillsbury-Fargo Generation Outlet
Barnes and Cass Counties, North Dakota

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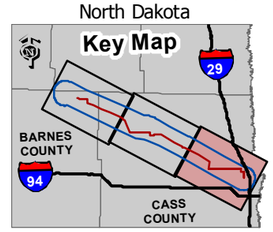
Pillsbury-Fargo Generation Outlet

Existing Land Use Map

Figure 13a

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- Extraterritorial Jurisdiction
- Antenna Structure
- Cemetery
- Church/Cemetery
- Airport
- School
- Occupied House
- Factory/Industrial Plant
- Warehouse
- Post Office
- Store/Small Business
- Small City Center/Townhall/ Community Hall
- Sewage Disposal Plant
- Storage Tanks (Gas/Oil)
- Garbage/Rubbish Dump
- Gravel Pit

USFWS Cover Type

- Native Grassland
- Undisturbed Grassland
- Hayland
- Cropland
- Undefined (9)
- Forest and Sheltbelt
- Riparian
- Open Water
- Temporary Wetland
- Seasonal Wetland
- Semipermanent Wetland
- Lake
- River
- Urban Area

HDR

March 2008

Map Document: (N:\GIS\Proj\Ottertaileastcentral_ND\map_docs\mxd\report_030708\ExLandUse_Figxx.mxd)
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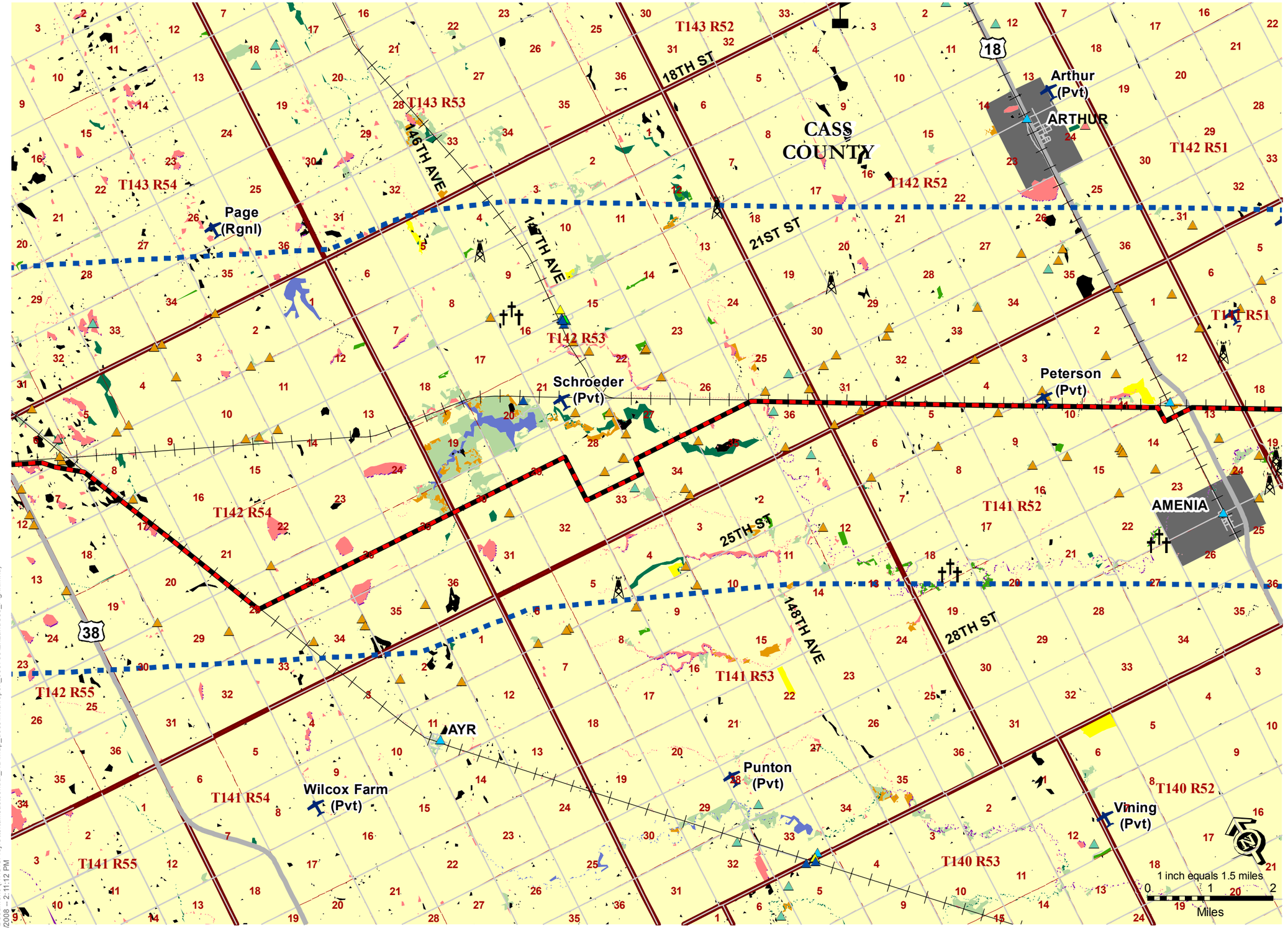

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OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

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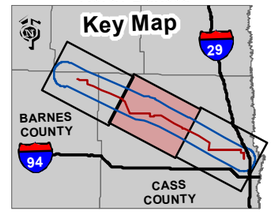
Pillsbury-Fargo Generation Outlet

Existing Land Use Map

Figure 13b

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- Extraterritorial Jurisdiction
- Antenna Structure
- Cemetery
- Church/Cemetery
- Airport
- School
- Occupied House
- Factory/Industrial Plant
- Warehouse
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- Riparian
- Open Water
- Temporary Wetland
- Seasonal Wetland
- Semipermanent Wetland
- Lake
- River
- Urban Area

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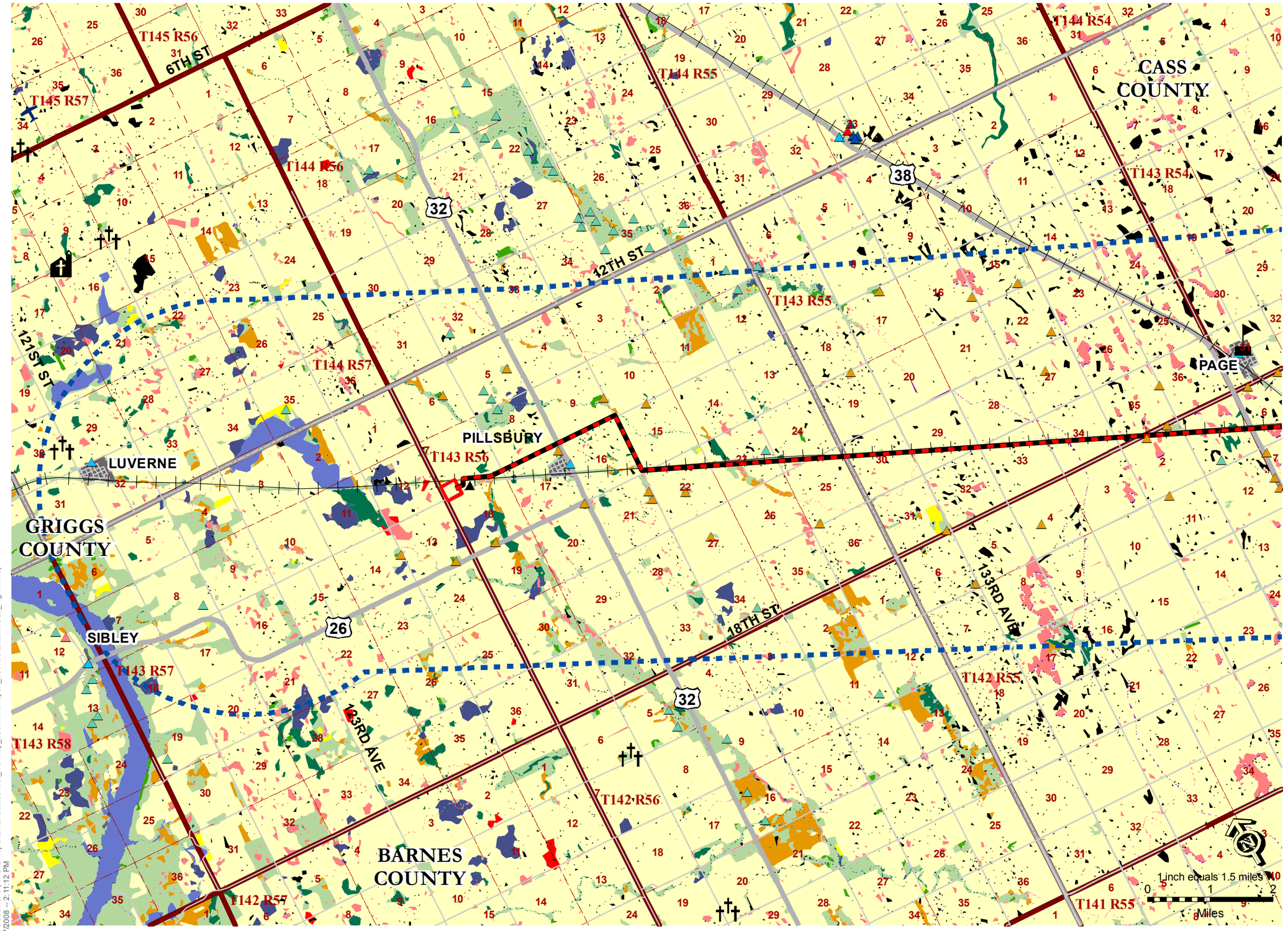

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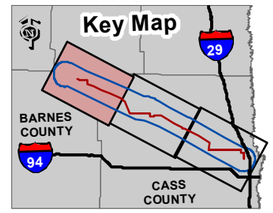
Pillsbury-Fargo Generation Outlet

Existing Land Use Map

Figure 13c

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
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- Township Boundaries
- Section Boundaries
- Extraterritorial Jurisdiction
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- Lake
- River
- Urban Area

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March 2008

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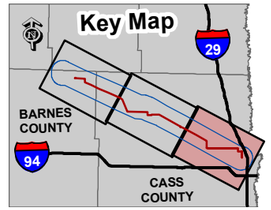
Pillsbury-Fargo Generation Outlet

Prime Farmland and Soil Distribution Map (SSURGO)

Figure 14a

Barnes and Cass Counties, North Dakota



CASS COUNTY

HARDWOOD

REILES ACRES

Maple River Substation

WEST FARGO

MAPLETON

T142 R50

T142 R51

T141 R49

T141 R50

T141 R51

T140 R49

T140 R50

T140 R51

T140 R52

T139 R49

T139 R50

T139 R51

T141 R52

25TH ST

28TH ST

163RD AVE

33RD ST

57TH ST

36TH ST

35TH ST

165TH AVE

28

81

17

10

94

52

18

Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- USFWS Urban Area

SSURGO Soil Data

- No Classification
- Not prime farmland
- Prime farmland if drained
- All areas are prime farmland
- Farmland of statewide importance

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

March 2008

Map Document: (N:\GIS\Proj\Ottertail\eastcentral_ND\map_docs\mxd\report_030708\SSURGO_Fig(xx.mxd)
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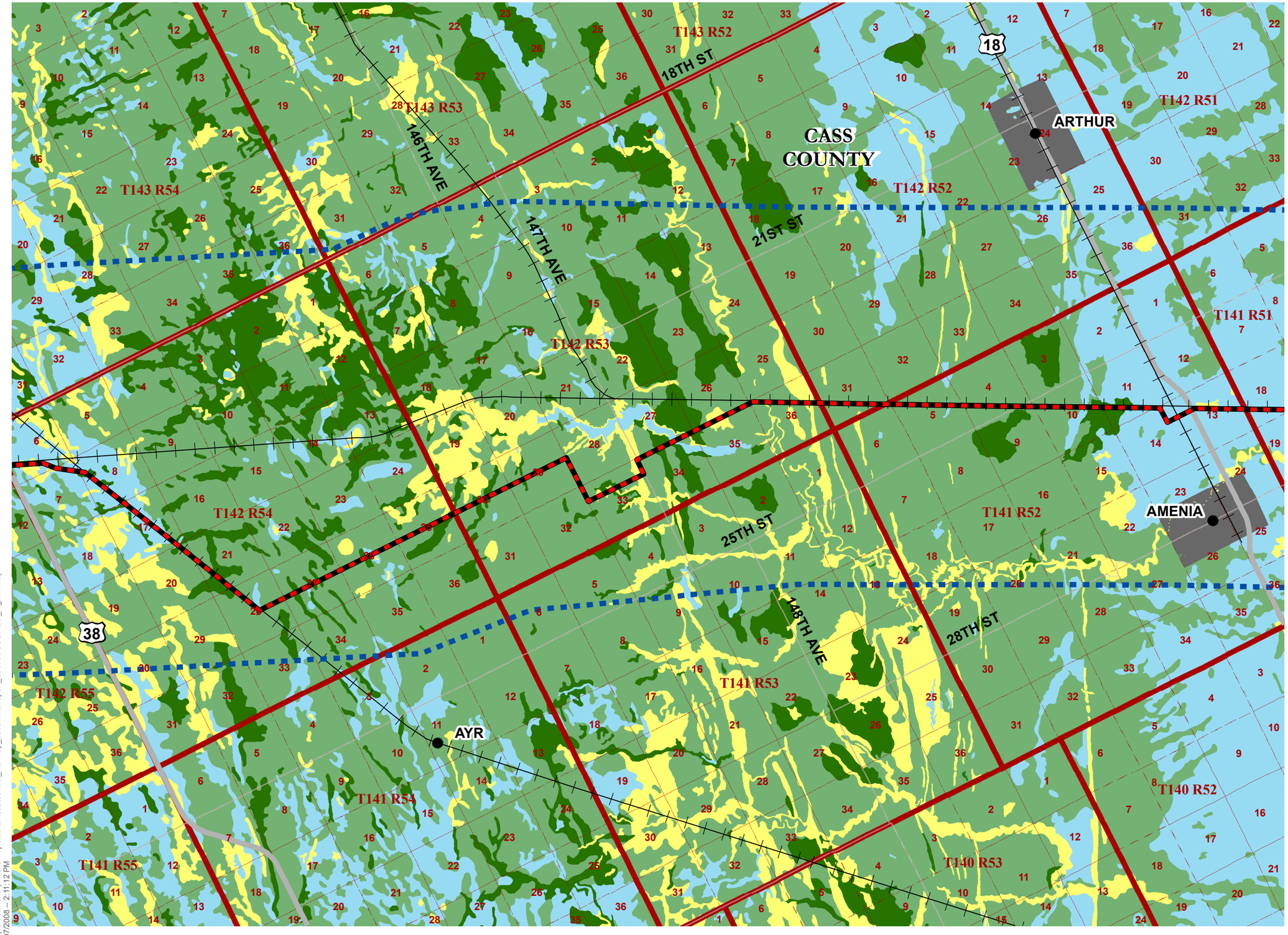


OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

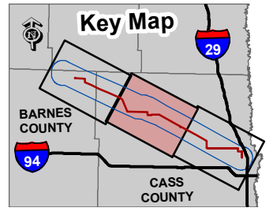
Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

Prime Farmland and Soil Distribution Map (SSURGO)

Figure 14b

Barnes and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
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- County Line
- Township Boundaries
- Section Boundaries
- USFWS Urban Area

SSURGO Soil Data

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0 1 2

Miles

Prepared By:

HDR

March 2008

Map Document: (N:\GIS\Proj\Ottertail\eastcentral_ND\map_docs\mxd\report_030708\SSURGO_Figxx.mxd)
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OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

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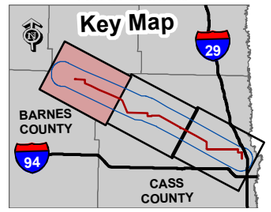
Pillsbury-Fargo Generation Outlet

Prime Farmland and Soil Distribution Map (SSURGO)

Figure 14c

Barnes and Cass Counties, North Dakota



Legend

- Existing Substation
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- Railroad
- Highway
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1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

March 2008

Map Document: (N:\GIS\Proj\Otertaileastcentral_ND\map_docs\mxd\report_030708\SSURGO_Figxx.mxd)
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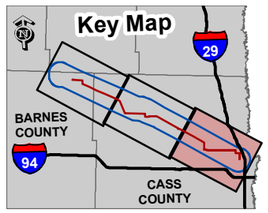
Pillsbury-Fargo Generation Outlet

State Soils Association Map (STATSGO)

Figure 15a

Barnes and Cass Counties, North Dakota



Legend

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- Township Boundaries
- Section Boundaries
- USFWS Urban Area

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

March 2008

Map Document: (N:\GIS\Proj\Otertaileastcentral_ND\map_docs\mxd\report_030708\STATSGO_Figxx.mxd)
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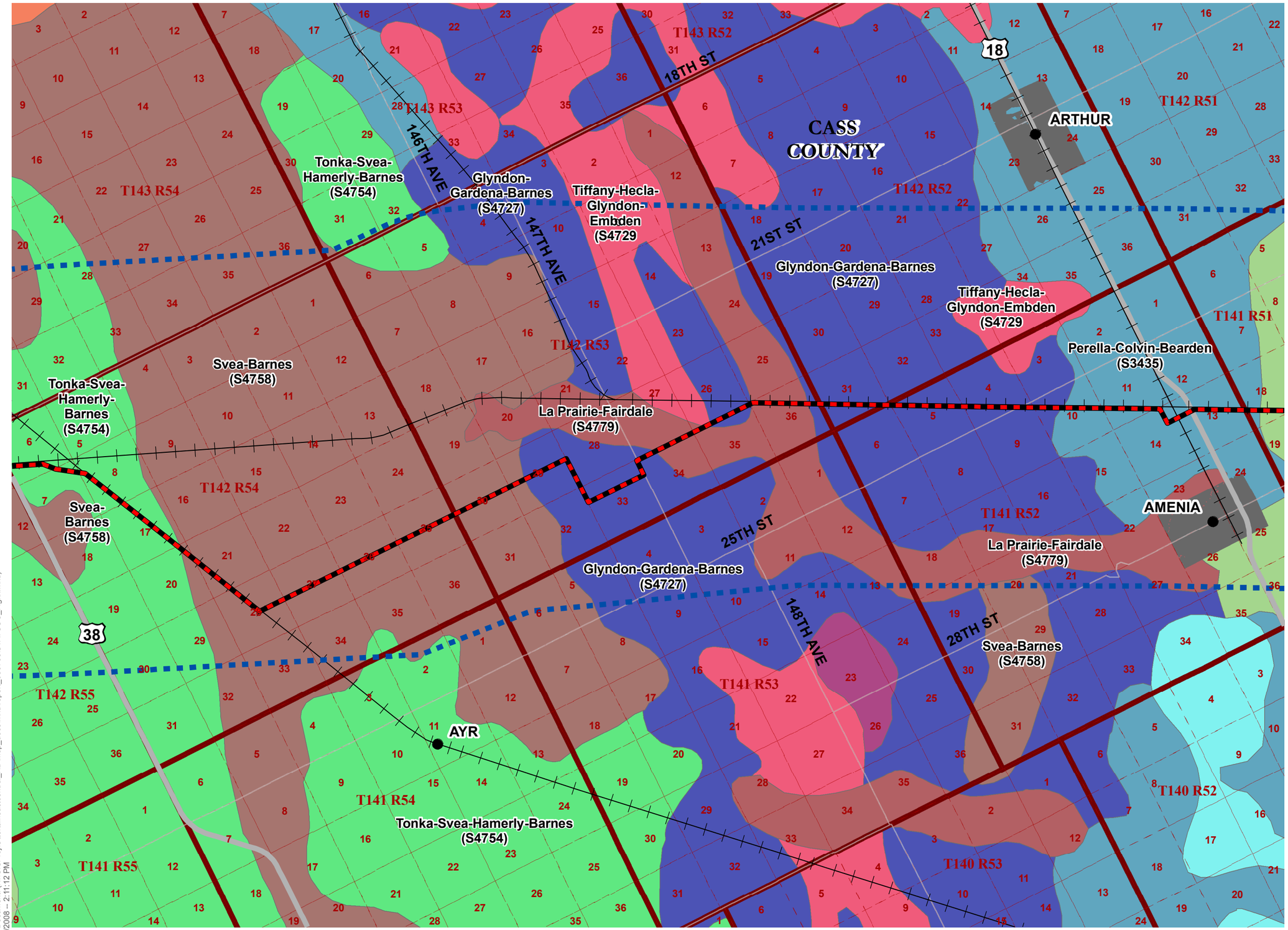

Map Document: (N:\GIS\Proj\Ottertaileastcentral_ND\map_docs\mxd\report_030708\STATSGO_Fig(xx.mxd)
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OTTER TAIL POWER COMPANY

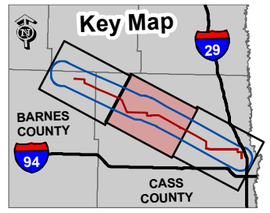
Minnkota Power MPC COOPERATIVE, INC.

Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

State Soils Association Map (STATSGO) Figure 15b

Barnes and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- USFWS Urban Area

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

March 2008

OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

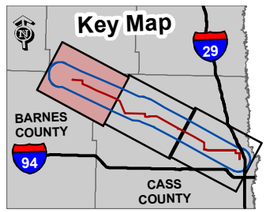
Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

State Soils Association Map (STATSGO)

Figure 15c

Barnes and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- USFWS Urban Area

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

March 2008

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OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

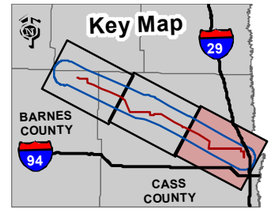
Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

National Wetlands Inventory, Surface Waters and Irrigation Permits Map

Figure 16a

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- Urban Area
- Surface Water
- Active Irrigation Permits

NWI Wetlands

- Emergent
- Pond
- Lake
- Riverine
- Forested/Shrub
- USFWS Wetland

Easements

- USFWS WPAs

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

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OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

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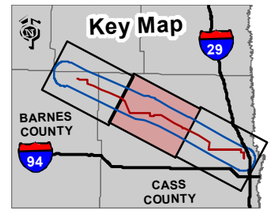
Pillsbury-Fargo Generation Outlet

National Wetlands Inventory, Surface Waters and Irrigation Permits Map

Figure 16b

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- Urban Area
- Surface Water
- Active Irrigation Permits

NWI Wetlands

- Emergent
- Pond
- Lake
- Riverine
- Forested/Shrub
- USFWS Wetland

Easements

- USFWS WPAs

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

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Map Document (N:\GISProj\Otertaileastcentral_NDlmap_docs\mxd\report_030708\NWI-Inv_Fig\cx.mxd)
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OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

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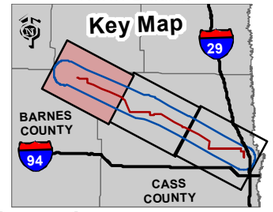
Pillsbury-Fargo Generation Outlet

National Wetlands Inventory, Surface Waters and Irrigation Permits Map

Figure 16c

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
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NWI Wetlands

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- Forested/Shrub
- USFWS Wetland

Easements

- USFWS WPAs

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

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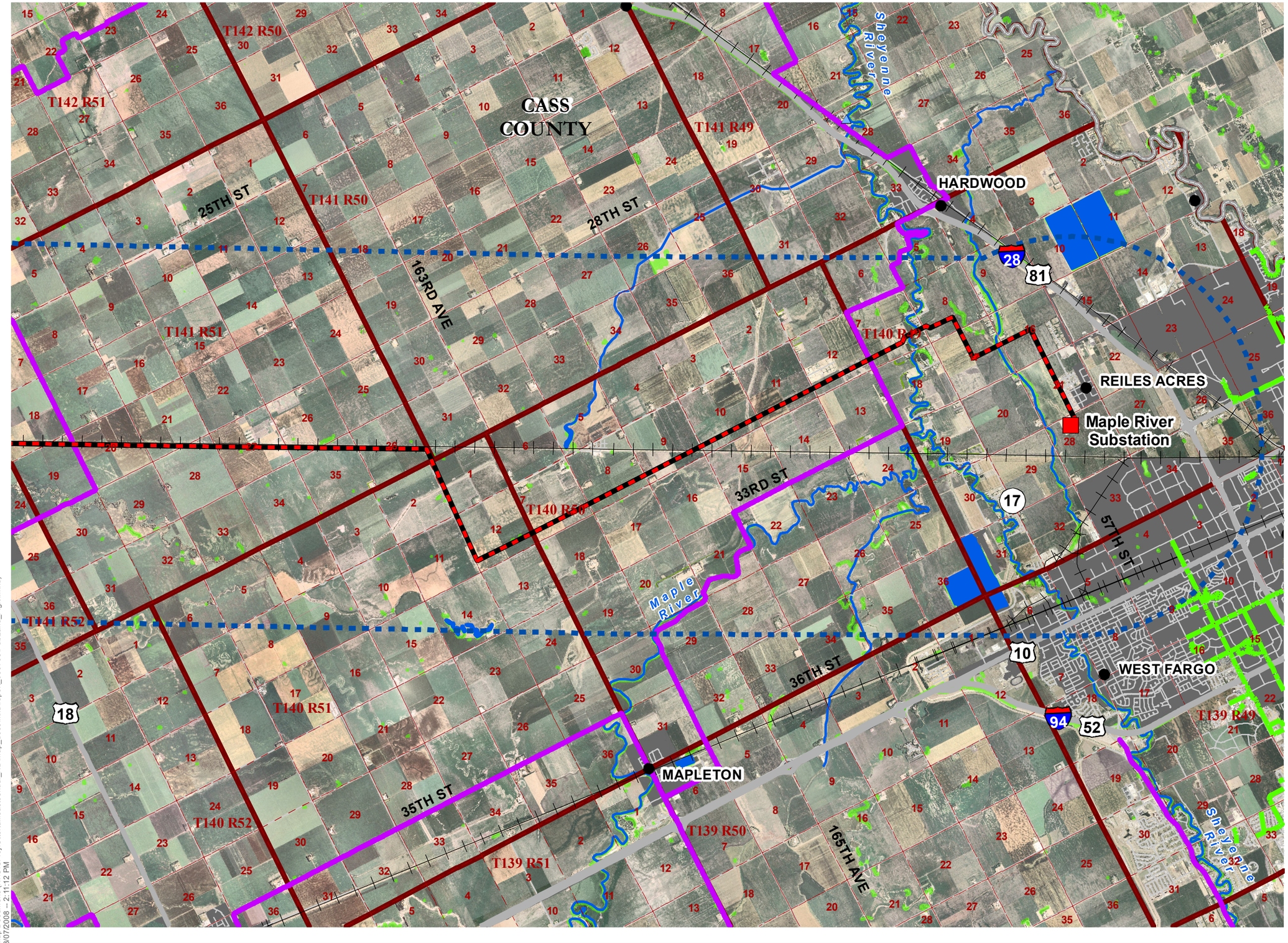

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OTTER TAIL POWER COMPANY

Minnkota Power MPC COOPERATIVE, INC.

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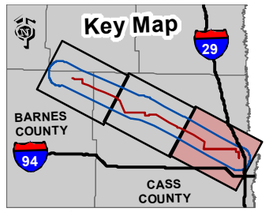
Pillsbury-Fargo Generation Outlet

Recreation Lands Map

Figure 17a

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- Urban Area
- Surface Water
- Multi Use Trails
- Snowmobile Trails
- Beach/Swimming Pool
- Dock/Pier/Landing
- Picnic Ground
- Rifle Club
- NWI Wetlands
- USFWS WPAs
- USFWS Wetland Easements

North Dakota Game & Fish

PLOTS WMA
CRP Habitat
(CRP-Not open for public recreation)

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

March 2008

OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

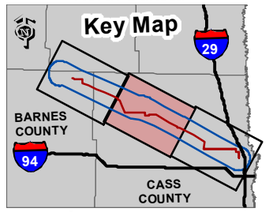
Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

Recreation Lands Map

Figure 17b

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Proposed Route
- Study Area Limit
- Railroad
- Highway
- County Line
- Township Boundaries
- Section Boundaries
- Urban Area
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- Dock/Pier/Landing
- Picnic Ground
- Rifle Club
- NWI Wetlands
- USFWS WPAs
- USFWS Wetland Easements

North Dakota Game & Fish

- PLOTS
- WMA
- CRP
- Habitat

(CRP-Not open for public recreation)

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

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OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

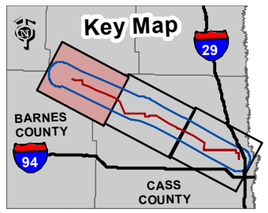
Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

Recreation Lands Map

Figure 17c

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
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- Railroad
- Highway
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- Township Boundaries
- Section Boundaries
- Urban Area
- Surface Water
- Multi Use Trails
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- Picnic Ground
- Rifle Club
- NWI Wetlands
- USFWS WPAs
- USFWS Wetland Easements

North Dakota Game & Fish

- PLOTS
- WMA
- CRP
- Habitat

(CRP-Not open for public recreation)

1 inch equals 1.5 miles

0 1 2

Miles

Prepared By:

HDR

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OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

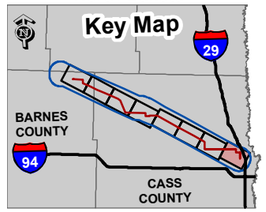
Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

Preliminary Pole Location

Figure 18a

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Occupied House
- Preliminary Pole Locations
- Proposed Route
- Railroad
- Highway
- County Line
- Surface Water
- NWI Wetlands

1 inch equals 0.5 miles

0 2,000 4,000

Feet

Prepared By:

HDR

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OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

MPC

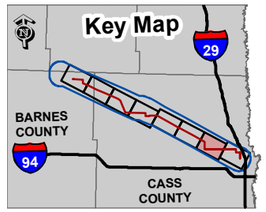
Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

Preliminary Pole Location

Figure 18b

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Occupied House
- Preliminary Pole Locations
- Proposed Route
- Railroad
- Highway
- County Line
- Surface Water
- NWI Wetlands

1 inch equals 0.5 miles

0 2,000 4,000

Feet

Prepared By:

HDR

March 2008

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OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

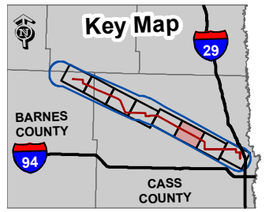
Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

Preliminary Pole Location

Figure 18c

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Occupied House
- Preliminary Pole Locations
- Proposed Route
- Railroad
- Highway
- County Line
- Surface Water
- NWI Wetlands

1 inch equals 0.5 miles

0 2,000 4,000

Feet

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OTTER TAIL POWER COMPANY

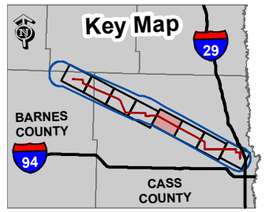
Minnkota Power COOPERATIVE, INC.

Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

Preliminary Pole Location
Figure 18d

Barns and Cass Counties,
North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Occupied House
- Preliminary Pole Locations
- Proposed Route
- Railroad
- Highway
- County Line
- Surface Water
- NWI Wetlands

1 inch equals 0.5 miles

0 2,000 4,000

Feet

Prepared By:

HDR

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OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

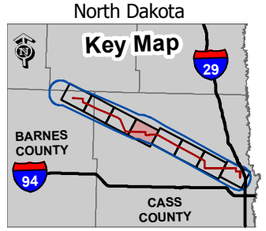
Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

Preliminary Pole Location

Figure 18e

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Occupied House
- Preliminary Pole Locations
- Proposed Route
- Railroad
- Highway
- County Line
- Surface Water
- NWI Wetlands

1 inch equals 0.5 miles

0 2,000 4,000

Feet

Prepared By:

HDR

March 2008

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OTTER TAIL POWER COMPANY

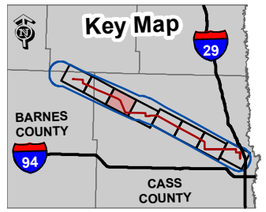
Minnkota Power COOPERATIVE, INC.

Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

Preliminary Pole Location
Figure 18f

Barns and Cass Counties,
North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Occupied House
- Preliminary Pole Locations
- Proposed Route
- Railroad
- Highway
- County Line
- Surface Water
- NWI Wetlands

1 inch equals 0.5 miles

0 2,000 4,000

Feet

Prepared By:

HDR

March 2008

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OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

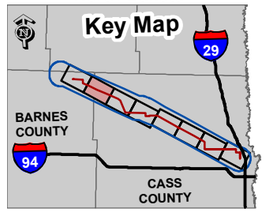
Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

Preliminary Pole Location

Figure 18g

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Occupied House
- Preliminary Pole Locations
- Proposed Route
- Railroad
- Highway
- County Line
- Surface Water
- NWI Wetlands

1 inch equals 0.5 miles

0 2,000 4,000

Feet

Prepared By:

HDR

March 2008

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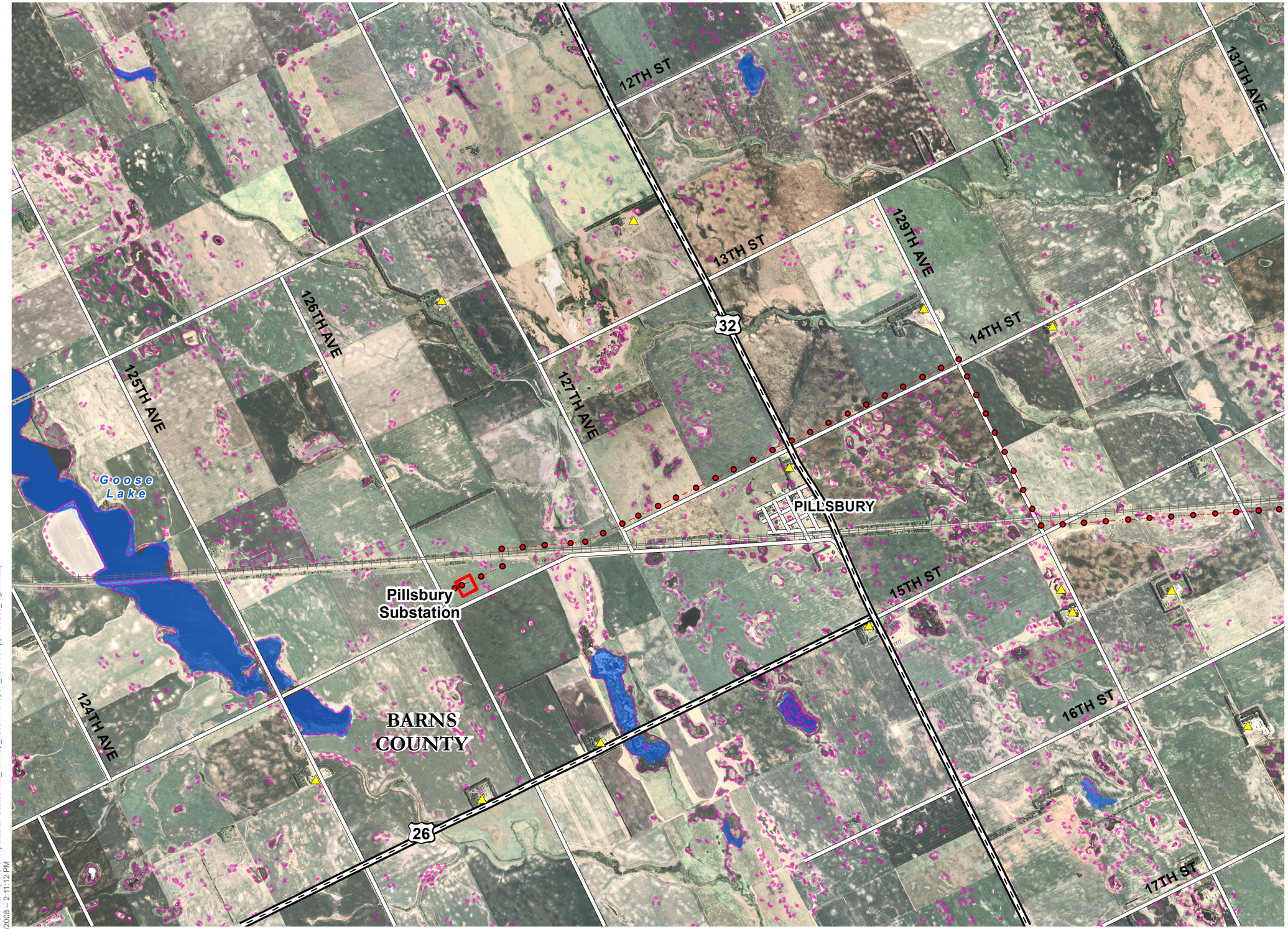


OTTER TAIL POWER COMPANY

Minnkota Power COOPERATIVE, INC.

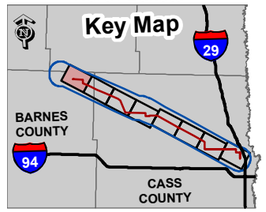
Your Touchstone Energy® Partner

Pillsbury-Fargo Generation Outlet

Preliminary Pole Location

Figure 18h

Barns and Cass Counties, North Dakota



Legend

- Existing Substation
- Proposed New Substation
- Occupied House
- Preliminary Pole Locations
- Proposed Route
- Railroad
- Highway
- County Line
- Surface Water
- NWI Wetlands

1 inch equals 0.5 miles

0 2,000 4,000

Feet

Prepared By:

HDR

March 2008

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APPENDIX A

Class I Cultural Resource Inventory

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DO NOT RELEASE

APPENDIX B

Otter Tail Power Stewardship Policy

OTTER TAIL POWER COMPANY

2006 Stewardship report ▪ Guided by our mission

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Guided by our mission

To our customers, shareholders, employees, and others

Chuck MacFarlane, President

For nearly 100 years stewardship has guided our purpose, our strategies, our daily work habits, and our mission.

As strategies, leadership, and technology change, our mission has stayed the same: To produce and deliver electricity as reliably, economically, and environmentally responsibly as possible to the balanced benefit of customers, shareholders, and employees and to improve the quality of life in the areas in which we do business.

We are mindful of our responsibility to the vitality and sustainability of the communities we serve, and we work hard every day to help those communities prosper.

Viable communities need electricity that is reliable, affordable, and provided in an environmentally responsible way. They need electricity to power hospitals, schools, churches, and homes. They need conservation initiatives, environmental stewardship, charitable cause support, and economic development commitment.

Our dedication to the communities we serve is not a new or passing trend. For nearly 100 years stewardship has guided our purpose, our strategies, our daily work habits, and our mission. We take our role in improving the quality of life in our service area seriously.

Environmental stewardship

Our company has had a long-standing commitment to environmental stewardship, and we believe that future success can be achieved only by continuing in that tradition. The foundation of that tradition includes energy conservation, demand-side management programs, renewable energy development, power plant efficiency improvements, and participation in industry research. Our plans for a balanced mix of energy generation include accelerating the development of wind power and other renewable resources.

Social stewardship

We know the development of strong communities requires an active nonprofit sector, and that's why we contribute about 2 percent of our operating revenue to worthwhile activities of educational institutions, nonprofit organizations, and community groups in the region. In 2006 Otter Tail Power Company gave approximately $600,000 to 900 charitable organizations in more than 250 communities throughout our service area.

Economic stewardship

Otter Tail Power Company believes in helping to grow the economies of the communities we serve. By doing so, we create a better business environment and a better quality of life for our customers. We provide economic development expertise at no direct cost to area communities seeking assistance. We helped to create more than 950 jobs and save more than 150 jobs throughout our service area in 2006.

In this report we'll give you a broad view of our company through our stewardship efforts. You'll find a company profile and information about our environmental commitment, social contributions, and economic development efforts.

I'd like to thank our customers, shareholders, and employees for an ongoing commitment to mutual benefits, shared values, and a vibrant future.

Chuck MacFarlane,
President, Otter Tail Power Company

Getting to know us

Coyote Station, Beulah, North Dakota

Affordable, reliable baseload resources play an important role in our past, present, and future.

Our mission: *To produce and deliver electricity as reliably, economically, and environmentally responsibly as possible to the balanced benefit of customers, shareholders, and employees and to improve the quality of life in the areas in which we do business.*

We value: *Integrity. Safety. Customer focus. Resourcefulness. Community.*

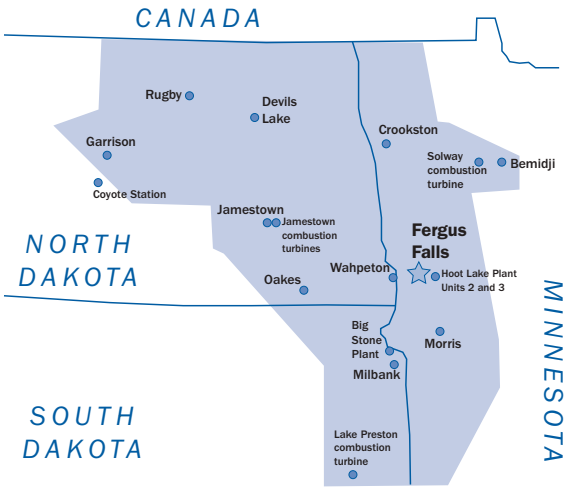
Otter Tail Power Company began generating electricity in 1909 at Dayton Hollow Dam on the Otter Tail River near Fergus Falls, Minnesota.

Service area: 50,000 square miles

Communities served: 423

Total customers:	128,500
Minnesota	60,050
North Dakota	56,800
South Dakota	11,650

Total employees:	800 (including part-time)
Minnesota	465
North Dakota	234
South Dakota	101



Coal-fired power plants

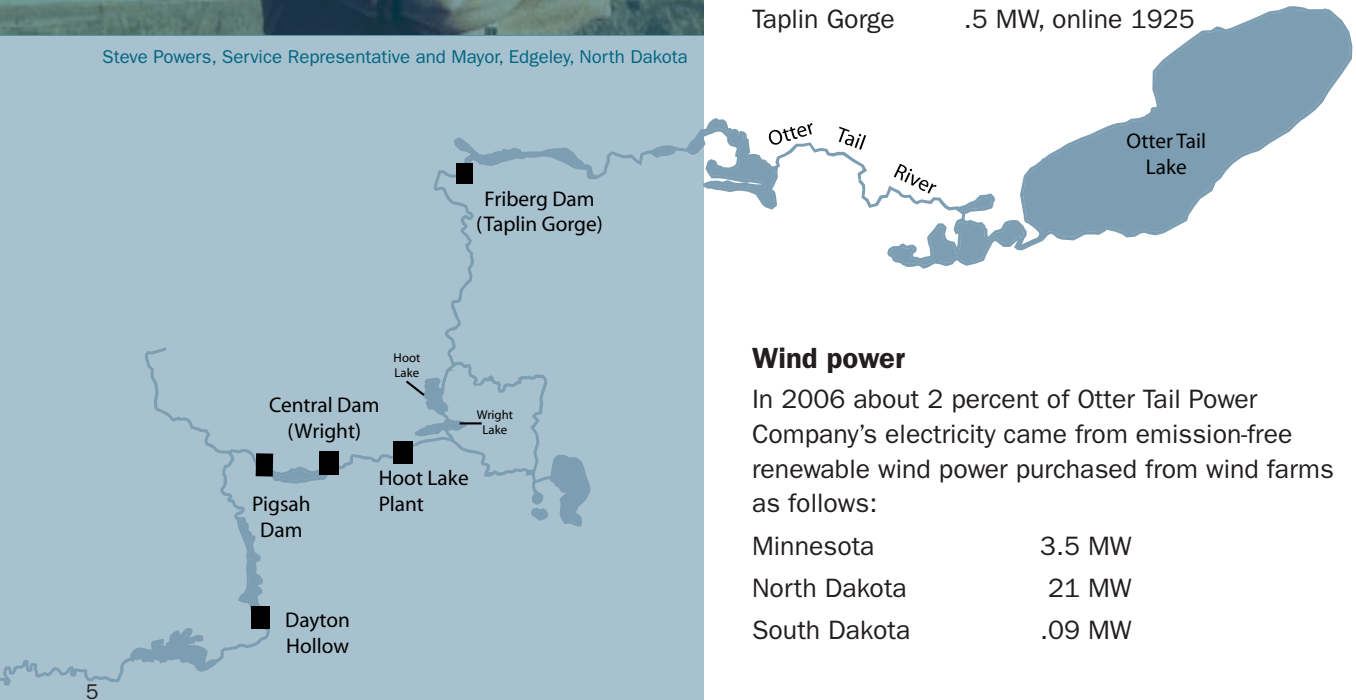
We operate three coal-fired power plants, which produce about 73 percent of our electricity.

	Big Stone Plant	Coyote Station	Hoot Lake Plant
Location	Big Stone City, South Dakota	Beulah, North Dakota	Fergus Falls, Minnesota
Age	Online since 1975	Online since 1981	Unit 2 online in 1959 Unit 3 online in 1964
Capacity	475 megawatts	427 megawatts	144 megawatts
Fuel source	Subbituminous coal	Lignite	Subbituminous coal
Number of employees	75	80	47
Ownership	53.9% Otter Tail Power Company 23.4% NorthWestern Energy 22.7% Montana-Dakota Utilities	35% Otter Tail Power Company 30% Northern Municipal Power Agency 25% Montana-Dakota Utilities 10% NorthWestern Energy	100% Otter Tail Power Company

Plant capacity listed according to accredited Mid-Continent Area Power Pool ratings.

Getting to know us

Steve Powers, Service Representative and Mayor, Edgeley, North Dakota



Hydropower

Otter Tail Power Company owns six small hydroelectric plants in Minnesota and purchases generation from other hydro resources to account for about 7 percent of the company's electricity. The Bemidji hydro plant is on the Mississippi River while the other plants are on the Otter Tail River near Fergus Falls, Minnesota.

Bemidji	.8 MW, online 1907
Dayton Hollow	1.0 MW, online 1909
Hoot Lake	.8 MW, online 1914
Pisgah	.7 MW, online 1918
Wright	.5 MW, online 1922
Taplin Gorge	.5 MW, online 1925

Wind power

In 2006 about 2 percent of Otter Tail Power Company's electricity came from emission-free renewable wind power purchased from wind farms as follows:

Minnesota	3.5 MW
North Dakota	21 MW
South Dakota	.09 MW

Our participation in wind projects continues to grow. At the time this report was printed, we had announced ownership of 27 (40.5 MW) of the 106 turbines at the Langdon Wind Energy Center in North Dakota and our commitment to purchase an additional 19.5 MW of capacity from the Center.

Combustion power

Combustion turbines produce less than 1 percent of our company's electricity. Often called peaking plants, these compact power plants usually generate power only during plant maintenance and peak energy-use periods when our primary power plants cannot meet our customers' demand for electricity.

Solway, Minnesota
Generating capacity - 49 MW
Operates on natural gas or fuel oil

Jamestown, North Dakota
Generating capacity - 56 MW
Operates on fuel oil

Lake Preston, South Dakota
Generating capacity - 28 MW
Operates on fuel oil

Generating capacities are listed according to Mid-Continent Area Power Pool ratings and change monthly.

Other sources

We also use biomass and solid waste to produce electricity. And we purchase approximately 18 percent of our electricity from the energy market.

Reflecting on our past

During the past 100 years Otter Tail Power Company has invested nearly $1 billion in plants and equipment to economically and reliably serve electric consumers in our tri-state area.

Low-cost generation and economical purchases have served our customers well for the last century. The wisdom of our leadership has laid a strong foundation for our future.

Highlighting our present

The financial statements of the company reflect a strong financial position. 2006 shows that about one-third of net electric plant investment is financed with debt, indicating modest debt leverage.

The region's consumption of electricity continues to grow at approximately 2.5 percent each year. Forecasts show that trend continuing, with the demand for energy estimated to increase 15 percent to 25 percent during the next decade.

Customers' increasing demand for electricity is requiring additional long-term investments in electric generation and electric grid infrastructure such as transmission and distribution lines and other facilities.

Investing in our future

Our 2006 capital budget includes capital expenditures for plant and equipment during the next five years totalling $700 million. Included in the five-year capital expenditures is $54 million specifically for investment in pollution-control equipment and technology to protect the environment.

While we make continuous efficiency improvements and work closely with regulators to contain costs and to keep electricity prices as low as possible, rising electricity costs are inevitable. We need to offset the increasing costs associated with aging infrastructure and with fuel, materials, and equipment necessary to reliably meet our customers' growing demand for electricity, and that is driving the need for future rate increases.

Investing in our future through environmental stewardship

Taplin Gorge, hydroelctric plant, near Fergus Falls, Minnesota

This region isn't just our workplace, it's our home. We're proud to be known for our work ethic, sincerity, and stewardship of the area's natural resources. Complying with existing environmental regulatory provisions is just the starting point for Otter Tail Power Company. We work to go beyond the basic requirements to do what's right for the environment and the customers we serve.

Stewardship plan involves four cornerstones

Our commitment to preserving our environment is built on a foundation of four cornerstones:

Resource planning – Balancing renewable energy, purchased energy, and baseload generation to provide a cost-effective and reliable energy supply.

Demand-side management – Controlling and reducing peak energy demands to maintain system reliability and delay the need for additional resources.

Conservation – Developing programs focused on helping businesses, residential users, and children to reduce electricity use.

Efficiency and compliance – Optimizing plant efficiencies, controlling emissions, and complying with all environmental regulations to help ensure a vibrant future.

...as reliably, economically, and environmentally responsibly as possible...

Investing in our future through environmental stewardship

Resource planning

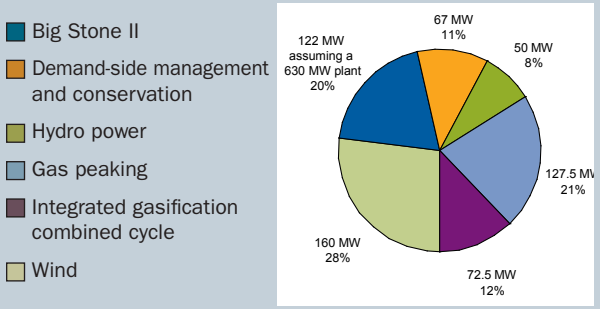
Artist's rendering

Big Stone II is the largest project in our company's history.

Balanced generation

Otter Tail Power Company has a balanced energy resource plan to meet increasing customer demand for electricity. We use an integrated resource planning process to forecast our customers' electricity needs. We then meet those needs with affordable, reliable baseload resources, renewable resources, and conservation and demand-side management programs.

2006 - 2020 planned resource additions



Big Stone II

Big Stone II, proposed as a 630-megawatt supercritical coal-fired plant, is the largest project in our company's history. This environmentally responsible project, shared with partnering utilities, would be built next to our existing Big Stone Plant near Milbank, South Dakota. If approved, the plant is expected to be operational in 2013.

Project partners have proposed building new transmission lines and substations and upgrading existing structures to deliver electricity generated by the proposed Big Stone II plant, as well as potential future renewables and other generation resources.

Renewable resources

Hydroelectric power—Hydro power was an original fuel source for Otter Tail Power Company. With total capacity of about 4.3 megawatts, our hydro units have provided reliable renewable energy for most of the company's history. As in the past, the company intends to secure additional hydroelectric energy through purchases.

Wind power—Our 2006 updated resource plan calls for up to 160 megawatts of new wind generation. We already purchase 21 megawatts of wind energy from FPL Energy's North Dakota Wind II project near Edgeley. At the time this report was printed, we had announced ownership of 27 of the 106 turbines at the Langdon Wind Energy Center in North Dakota and our agreement to purchase an additional 19.5 megawatts of capacity from the Center. We are evaluating additional wind projects to ensure we meet the resource plan target as well as the requirements of the North Dakota Renewable Energy Objective (10 percent of our energy from qualifying renewable resources by 2015) and the Minnesota Renewable Energy Standard (25 percent by 2025).

Tail*Winds* program—Another opportunity to educate customers and support wind energy is provided through our TailWinds program. Through TailWinds our customers have been able to purchase up to 100 percent of their electricity from wind generation since 2002. In 2006, 747 customers were enrolled in the program, some purchasing wind energy for home use and others for business use.

Resource additions require reliable transmission

Otter Tail Power Company is participating in CapX 2020, a joint initiative of 11 transmission-owning electric utilities in Minnesota and the surrounding region. CapX 2020 was formed to expand the electric transmission grid to ensure electric reliability for years to come and to provide capacity to deliver more wind energy to the electrical system in this region.

Planning studies showed that customer demand for electricity in the CapX 2020 partners' service area will grow by up to 6,000 megawatts by 2020, resulting in the need to expand the transmission grid to accommodate that growth. The coalition's plans include a first group of projects totaling approximately 600 miles of 345-kilovolt lines connecting Minnesota with North Dakota, South Dakota, and Wisconsin and a smaller 230-kilovolt line in the Bemidji area. Each project will help ensure electric reliability in the region. One of the 345-kilovolt projects is in the wind-rich area of eastern South Dakota and western Minnesota and is designed to accomodate additional wind-generated electricity.

These projects are estimated to cost approximately $1.3 billion with the development phase taking up to four years. Regulatory proceedings for three of the four projects began with the certificate of need application to the Minnesota Public Utilities Commission in August 2007. The first of the proposed lines is planned to be in service in 2012.

...as reliably, economically, and environmentally responsibly as possible...

Investing in our future through environmental stewardship

Demand-side management

"Otter Tail Power Company runs one of North America's most successful demand-response programs."

Esource,
an international energy research organization

Demand-side management (DSM) resources make our company unique among utilities. DSM has been part of our energy plan since the 1940s when we encouraged customers to put timers on their water heaters. During deregulation, when many utilities dismantled their DSM programs, Otter Tail Power Company continued to focus on it. The goal of reducing peak energy demand led to heavy promotion of interruptible and deferred loads and associated rates.

As a result, in 2006 nearly one-third of our customers participated in some form of demand-side management, allowing a portion of our resources to be curtailed during high-use periods.

Resource plans call for a continued strong effort in building these DSM resources with an additional 67 megawatts of controllable and conserved loads by 2020.

Participating customers save on their electricity bills with rates that are much lower than the price of standard electric service.

...as reliably, economically, and environmentally responsibly as possible...

Investing in our future through environmental stewardship

Conservation

Chelsey, spokesperson, *Little miss savings* media campaigns

Chelsey encourages consumers to use electricity wisely through media campaigns emphasizing conservation.

Conservation programming is a focus for Otter Tail Power Company. Since 1992 we've helped our customers conserve a total of 160 megawatts of demand and more than 1 million cumulative megawatt-hours of electricity. That's roughly equivalent to the amount of electricity that 90,000 average homes would use in a year. And that's almost equal to the annual energy sales of our entire residential customer base.

We promote conservation through advertising campaigns and educational presentations throughout our service area. In Minnesota public electric and gas utilities are required to spend about 1.5 percent of their annual revenues on energy-conservation programs. Here are the 2006 achievements from just a few of our Minnesota Conservation Improvement Programs.

Change a Light, Change the World – 17,451 compact fluorescent lightbulbs were sold with hefty rebates to customers to encourage this energy-efficient lighting option.

CoolSavings – 418 participants earned $20 in bill credits for allowing a radio receiver to cycle their air conditioners on and off every 15 minutes to help manage summer electricity demand on peak days.

Heat pump conservation rebates – 150 residential and 34 commercial customers qualified for rebates for installing a high-efficiency Energy Star-rated air-source or geothermal heat pump.

Energy-efficient equipment rebates – 350 commercial customers received rebates for installing energy-efficient kitchen appliances, lighting options, and motors.

Conservation for kids

Otter Tail Power Company is impacting the future by reaching today's children through

- ConservingElectricity.com.
- A series of energy efficiency education television and radio ads featuring Chelsey, an energetic school-aged girl.
- The Science Museum Energy Connections tour.

We are exploring the potential to expand some of our Minnesota programs into North Dakota and South Dakota as well.

In 2006 Otter Tail Power Company achieved 116 percent of its energy savings goals and spent more than $1.9 million on energy-efficiency and conservation projects.

Home energy makeovers

In 2006 Otter Tail Power Company sponsored the Home Energy Makeover workshops and contest throughout our service area. The workshops provided a hands-on learning experience about the most cost-effective improvements to make to reduce heat loss, air infiltration, and energy costs. The contest offered residential customers the chance to win $7,500 worth of energy-efficiency improvements for their homes.

Seven homes from across our service area were selected for makeovers that included weatherization; the installation of high-efficiency heating and cooling systems; new windows, water heaters, and insulation; and other energy-efficiency services.

Work was completed for most homes prior to the start of the winter heating season, and homeowners saved money on their winter energy bills.

Investing in our future through environmental stewardship

Efficiency and compliance

Big Stone Plant near Milbank, South Dakota

Big Stone Plant is a partner in efficiency with its neighbor, POET Biorefining-Big Stone. The plant provides POET with a ready supply of water for processing corn and for fire protection and steam for its dry milling process, allowing POET to offset about half of its natural gas consumption.

Optimizing efficiency and compliance measures is an important element of our environmental stewardship commitment.

Replacing the high-pressure and intermediate-pressure turbines at Big Stone Plant and the low-pressure turbine at Coyote Station are a couple of examples of our large-scale efficiency improvements.

We also have made smaller-scale but significant improvements within our plants including:

- Replacing inefficient lighting.
- Improving our control systems.
- Using efficient variable-speed drives.

We take our commitment to environmental stewardship seriously.

Our responses to regulatory developments

Clean Air Interstate Rule (CAIR)

Background

Environmental Protection Agency published the Clean Air Interstate Rule in 2005 to reduce the regional transport of sulfur dioxide (SO_2) and nitrogen oxide (NO_x) emissions. This rule affects 28 eastern states including Minnesota. The first phase of Clean Air Interstate Rule NO_x and SO_2 reductions will begin in 2009 and 2010, respectively.

Our actions

We are undertaking early actions to comply with CAIR at our Hoot Lake Plant. Following installation of the new low NO_x burners at Unit 3, the NO_x emission rate decreased by more than 40 percent in the fourth quarter of 2006 when compared with the first three quarters. Plans for early compliance at Unit 2 also are underway.

Clean Air Mercury Rule

When EPA finalized the Clean Air Mercury Rule in 2005, it became the first rule in the world to reduce coal-fired power plant mercury emissions. The rule created a market-based cap-and-trade program that will reduce nationwide utility emissions of mercury in two phases starting in 2010 with an additional reduction starting in 2018. Mercury emission-monitoring requirements begin in 2009.

In anticipation of the Clean Air Mercury Rule deadlines, we participated in several groundbreaking mercury research studies in 2006. The University of North Dakota's Energy and Environmental Research Center published the final report from a month-long study hosted by our Hoot Lake Plant in October 2005. During the project, powder-activated carbon and an enhancement additive were injected upstream of the Unit 3 electrostatic precipitator to capture the mercury in the flue gas. The results will play a role in resolving mercury-control problems at power plants that burn subbituminous coal.

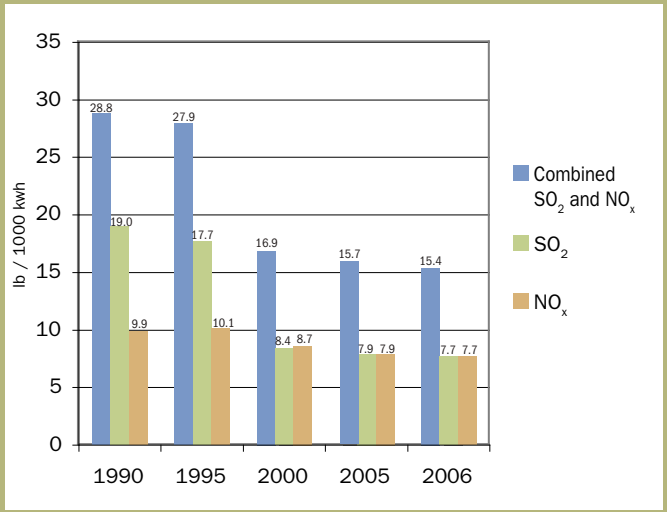
Clean Water Act 316(b)

Under Section 316(b) of the Clean Water Act, EPA is in the process of implementing the second phase of a rule to protect fish and other aquatic species from power plants that withdraw cooling water from lakes, rivers, or oceans on a once-through basis. In a once-through cooling system, water is diverted from a waterbody, used for cooling and condensing steam, and returned to that waterbody.

In 2006 we completed an extensive study at Hoot Lake Plant to document the impact of the cooling water system on fish in the intake waterbody, Wright Lake. We will be working with the Minnesota Pollution Control Agency during renewal of the Hoot Lake National Pollution Discharge Elimination System permit to determine what further actions, if any, need to be taken.

Investing in our future through environmental stewardship

Committed to reducing emissions



Otter Tail Power Company SO_2 and NO_x emission intensity trend from coal-fired generation

Our company's coal-fired power plants are becoming increasingly clean and efficient, as shown by this graph of historical SO_2 and NO_x emissions per 1000 kilowatt-hours.

Addressing climate change

We recognize growing concerns regarding climate change. Since 1994, when Otter Tail Power Company as an Edison Electric Institute member joined the U.S. Department of Energy in the Climate Challenge, the electric utility industry has led all other industrial sectors in reducing greenhouse gas emissions on an intensity basis (pounds per MWH generated). Between 1990 and 2006 we decreased our CO_2 intensity approximately 11 percent. We plan to more than double that reduction by 2025 through various programs now under way including conservation and demand-side management programs, renewable energy development, power plant efficiency improvements, and participation in industry research.

SF_6 Emission Reduction Partnership

Sulfur hexafluoride (SF_6) is a synthetic gas used as an insulator in electrical transmission and distribution equipment. SF_6 also is a highly potent greenhouse gas that has a global warming potential 23,900 times that of carbon dioxide. Otter Tail Power Company has been a member of the SF_6 Emission Reduction Partnership for Electric Power Systems since 2004. Our self-determined annual SF_6 emission goal is less than 2 percent of system capacity through 2012. We met this goal in 2006 with an SF_6 emission rate of 1.4 percent.

Plains CO_2 Reduction partnership

We have participated in carbon sequestration research through the Plains CO_2 Reduction (PCOR) partnership since its inception in 2003. PCOR is one of seven regional carbon sequestration partnerships across the country sponsored by the Department of Energy and is under the direction of the Energy and Environmental Research Center (EERC) at the University of North Dakota. In November 2006 PCOR moved into its third phase when EERC was awarded $67 million from the Department of Energy to accelerate the CO_2 sequestration technologies from field tests to one longer-term operation on a commercial scale.

Accurate emissions reporting

The first phase of upgrading the continuous emission monitors at Big Stone Plant, Coyote Station, and Hoot Lake Plant began in 2006. These upgrades will result in each plant having the latest technology to measure SO_2, NO_x, CO_2, and flue gas flow rates.

Product reuse

Wherever possible we reuse fly ash and bottom ash—the products of coal combustion. This reuse saves natural resources and lowers landfill use. Our bottom ash is used for sandblasting, surfacing on mining roads, roofing shingles, and drainage components. In addition to serving as an additive in cement and concrete, our fly ash is used for agricultural purposes, such as stabilizing soil in feedlots and grain storage pads.

Safe oil use

We completed extensive oil safety evaluations of 160 substations in 2006. We upgraded substations with the potential for an oil spill to reach water bodies to ensure any spills would be contained on-site. And we developed spill plans for environmentally sensitive substations. Spill response information for all 160 substations is available electronically to company electrical technicians for emergency response.

Outstanding efficiency achievements

2006—A remarkable year for our coal-fired plants

Coyote Station scrubber performance was the best on record, removing 76 percent of all SO_2 produced during coal combustion.

During the 2006 heat wave in July and August when power needs were critical, Coyote had 100 percent plant availability and broke its all-time record for monthly generation.

Big Stone Plant achieved the lowest net plant heat rate on record. A lower net plant heat rate means less fuel was used to produce one kilowatt-hour of electricity, which directly translates to a reduction in air emissions for that same kilowatt-hour.

Big Stone Plant had an excellent year of supplying steam to the ethanol plant next door. Using reliable steam from Big Stone Plant increases the efficiency of the ethanol production process.

Hoot Lake Plant Unit 2 had an all-time record net generation for 2006, including 100 percent availability for 7 of 12 months. Overall the entire plant had the third highest net generation in history.

Investing in our future through environmental stewardship

Future goals

Mitchel Tenneson, son of employee Dawn Tenneson, Fergus Falls, Minnesota

Our employees and many shareholders call our service area home so being a steward of our natural resources is a priority for our company.

Otter Tail Power Company's environmental commitment is ongoing

Here's what's happening:

- A complete set of climate-change principles became public in 2007, along with a list of our carbon-reduction efforts. It's a balanced approach that, rather than slowing the progress of climate-change legislation, encourages informed decisions.
- Big Stone Plant will be installing a pulse-jet baghouse that uses approximately 17,000 bags to collect particulate matter from the flue gas. The installation will help eliminate plant derates attributable to the existing particulate matter collection equipment.
- Mercury monitoring technologies will be evaluated and selected at Big Stone Plant and Coyote Station to prepare to meet the monitoring requirements of the EPA's Clean Air Mercury Rule.
- To prepare for Clean Air Interstate Rule, Clean Air Mercury Rule, and upcoming EPA emissions reporting changes, Coyote Station, Big Stone Plant, Hoot Lake Plant, and Solway peaking plant will be converting to a new emissions reporting software platform. The second phase of emission analyzer upgrades also will be completed at Coyote Station and Big Stone Plant.
- Our commitment to early compliance with the Clean Air Interstate Rule will continue by evaluating the latest low nitrogen oxide (NO_x) burners technologies for Hoot Lake Unit 2.
- Big Stone II, if built, will help meet our regional customers' increasing energy needs in an environmentally responsible manner. By using new technologies in environmental-protection equipment, the Big Stone site will produce twice the amount of electricity but produce fewer sulfur dioxide (SO_2), nitrogen oxide (NO_x), and mercury (Hg) emissions. Big Stone I and Big Stone II combined will be as clean, or cleaner than the site is now with one plant.

  An associated transmission project—when combined with other planned transmission projects—will help to make 800 to 1,000 megawatts of extra transmission capacity available for wind or other sources of generation.

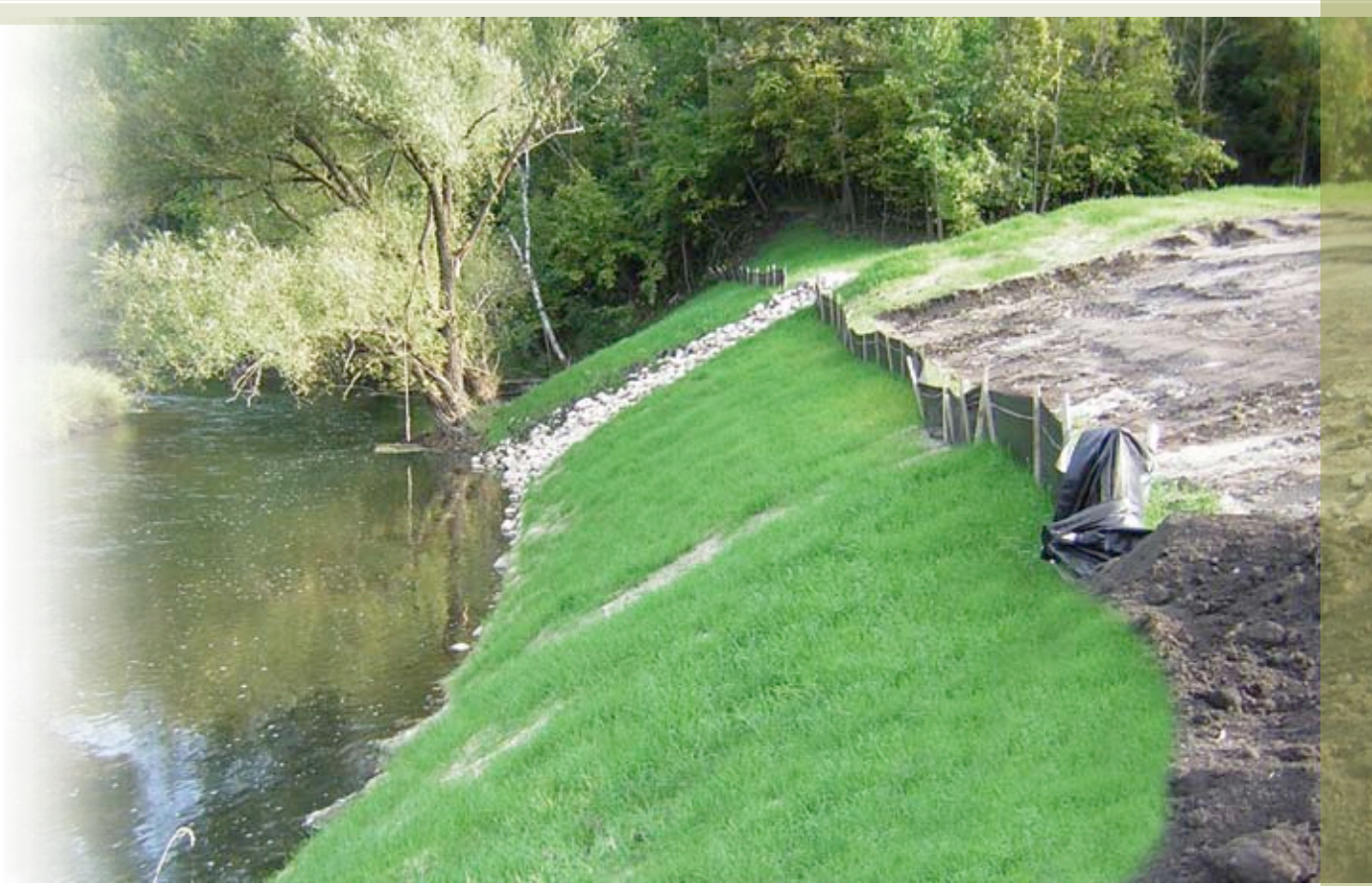
Project spotlight: Riverbank restoration at Hoot Lake Plant

The final phase of remediation of an old ash landfill at Hoot Lake Plant was completed in 2006. The old ash landfill is adjacent to the Otter Tail River, which runs through the plant site.

We removed ash forming nearly 1,000 feet of riverbank and replaced it with a synthetic liner, clay, boulders, and natural vegetation.

This protects the river from contact with ash, reduces erosion, and creates a natural appearance.

Also in 2006, employees planted 1,500 trees at Hoot Lake Plant's ash site to absorb water and enhance the area.



Investing in our future through social stewardship

Randy and Sharon Mann, customers, Fergus Falls, Minnesota
Service Representative, Josh Bahls

Otter Tail Power Company works to improve the quality of life in the areas in which we do business by providing reliable service and measuring customer satisfaction.

It's all about people. Without our dedicated employees, loyal customers, and trusted shareholders, Otter Tail Power Company would cease to exist. This is why each of our social stewardship efforts focuses on the people and communities we work with every day.

Reliability

Reliability is vital when it comes to customer satisfaction. Electricity is essential for households, emergency services, manufacturers, and businesses. Life without electricity would be difficult at best.

We work to keep the frequency and length of service interruptions to a minimum. We track our response to interupptions using four reliability performance indicators. In 2006 we achieved excellent results in all four categories. Here are the 2006 system reliability results as recorded by our interruption monitoring system:

1. The number of interruptions lasting five minutes or more that an average customer experienced during the year.
   Goal: 1.600 Actual: 1.383
2. The average time that a customer was without service during an outage.
   Goal: 50 min. Actual: 43.218 min.
3. The total duration of these interruptions.
   Goal: 80 min. Actual: 59.77 min.
4. The number of interruptions lasting less than five minutes that an average customer experienced during the year.
   Goal: 11 Actual: 9.106

To keep pace with increasing demands, we must expand and improve the reliability of the electric delivery system while increasing fuel diversity and managing demand.

Our commitment

As part of a long-term reliability strategy we perform critical analyses of our transmission and distribution systems to evaluate where our greatest needs lie. This allows us to make priorities for improvements so that we continue to generate and transmit electricity in the safest, most reliable, and most environmentally responsible way possible.

Initial plans include the prudent and timely update of aging transmission components and aggressive vegetation management. Pruning and removing troublesome trees will reduce interruptions caused by the trees and the animals living in them.

Reliability vs. Mother Nature

Our Midwest weather extremes present a constant challenge to electric service reliability. In fact, the weather causes more customer outages than any other factor.

Our predominantly rural area means fewer customers per mile of transmission line than nearly any other investor-owned utility in the country. Long expanses of transmission lines are especially vulnerable to lightning, sleet, ice, tornadoes, and frequent strong prairie winds.

When outages occur we work to restore electric service in the safest, swiftest, and most efficient manner for each situation. When possible, crews first will restore critical facilities and then continue until each customer's service is restored. During these repair efforts customer service personnel work with operations and support personnel to assess damages, stage response measures, acquire and transport materials and supplies, and dispatch manpower and equipment. We use mutual-aid agreements with other utilities when necessary.

We also provide regular updates to local news media regarding the progress of restoration efforts to help customers plan appropriately.

Customer satisfaction

We engaged the American Customer Satisfaction Index (ACSI) research program to conduct an independent survey among our customers. ACSI compares Otter Tail Power Company's customer satisfaction ratings with those of the top 29 electric and gas utilities in the country. As you can see in this chart, Otter Tail Power Company achieved higher ratings than the industry average in every category.

Group	Quarter 2 2006	Quarter 4 2006
Otter Tail Power Company	83	83
Highest rated investor-owned utility in the comparison group	80	80
Industry average	72	71
Lowest rated investor-owned utility	64	63

on a scale of 0 - 100

...to the balanced benefit of customers, shareholders, and employees...

Investing in our future through social stewardship

Committed to our communities

Ollie the Otter, Children's Miracle Network telethon

Investing in our future means supporting young minds, educating our current and future workforce, creating vibrant culture and vital communities, improving health and human services, and protecting our natural resources.

Public safety

Helping keep customers and the public safe always has been paramount to Otter Tail Power Company. Safety department staff, field personnel, and power plant employees give electrical safety presentations at schools, fire departments, and other organizations throughout our service area. These presentations educate the public about the hazards of electricity and about proper electrical safety measures.

We also distribute several public service notices related to electrical safety throughout the year to raise awareness. Safety messages in 2006 covered:

- Snowmobile safety in storm-damaged areas.
- National Electrical Safety Month (May).
- Outage updates with storm safety reminders.
- Grain harvest highline safety.
- Sugar beet harvest road safety.
- Halloween safety tips.
- Holiday gift ideas with safety and efficiency messages.
- Winter safety tips.

Donating time

We believe in volunteering time and skills to make our communities better places to live. Our employees volunteered for a wide range of nonprofit organizations and charitable causes in 2006. Their involvement encompassed serving on nonprofit boards of directors, organizing volunteer projects, and financially contributing to charitable causes.

To encourage this volunteer spirit, Otter Tail Power Company has implemented the *Power of Two* program.

Power of Two matching gifts program

Employees who contribute a minimum of 24 hours of personal volunteer time within the year to a nonprofit organization are eligible for a $100 donation to that organization. Each employee is eligible for one donation to one organization each year.

Community Connections giving program

While Otter Tail Power Company provides financial support to a broad array of activities and organizations, we focus our resources on the rural communities we serve.

Collaborative efforts and initiatives that fit more than one of the company's areas of emphasis receive greater consideration for funding.

Priority funding areas include:

- Education
- Workforce development
- Health and human services
- Arts and culture
- Community enhancement
- Environmental stewardship

2006 campaign involvement

United Way of Otter Tail County

Campaign focus: Provides funding for the Red Cross, Salvation Army, personal growth activities for kids, emergency shelters, crisis counseling, hot meals for seniors, and early childhood development. Three out of five Otter Tail County, Minnesota, residents use one or more of the programs funded by United Way.

How we helped: Total donation of $54,615. Employees donated $36,410 and Otter Tail Power Company added a 50 percent match.

While this highlights activity in our headquarters community, we also support United Way organizations in Wahpeton and Jamestown, North Dakota, and Bemidji and Crookston, Minnesota.

Children's Miracle Network

Campaign focus: Helps children afflicted with diseases, injuries, and birth defects of every kind receive the medical assistance they need at MeritCare Hospital, the region's largest Neonatal Intensive Care Unit.

How we helped: Total donation of $10,631. 120 employees contributed with Otter Tail Power Company matching the first $2,500. Funds are used to purchase new equipment and technology for the Neonatal Intensive Care Unit.

In 2006 Otter Tail Power Company gave approximately $600,000 to 900 charitable organizations in more than 250 communities throughout our service area.

Here are just some of those organizations:

- American Cancer Society - Relay for Life
- Anne Carlsen Center for Children
- Boys and Girls Clubs
- Dollars for Scholars
- Girl Scouts
- Nature Conservancy of Minnesota
- Colleges and universities
- Special Olympics
- Young Life
- Boy Scouts
- National Child Safety Council
- Friends of the Library
- Local fire departments
- 4-H
- Medical centers
- Police departments
- Salvation Army
- Habitat for Humanity
- Muscular Dystrophy Association

Investing in our future through social stewardship

Committed to our employees

Mimi Wentzel, Drafter 1, and Scott Gunderson, Engineering Assistant, Fergus Falls, Minnesota

Vital to the long-term sustainability of Otter Tail Power Company is our ability to retain and attract highly skilled and talented employees.

We encourage a diverse workforce, offer employees a competitive compensation package, promote a safe work environment, and maintain a talented workforce.

The 800 employees of Otter Tail Power Company work in three states: Minnesota, North Dakota, and South Dakota. Unions represent 52 percent of our workforce. The average employee has approximately 31 years of service upon retirement.

Diversity in our workplace

Otter Tail Power Company is proud to be an Equal Opportunity Employer with policies and practices that are nondiscriminatory. By respecting and valuing diversity among our employees and all those with whom we do business, every employee is accountable for ensuring a workplace free of discrimination and harassment.

The Generating Positive Connections leadership program for female employees of Otter Tail Power Company continued in its second year in 2006. The program focuses on career enhancement and prepares participants for future managerial positions.

Continuing education opportunities

Employees can receive reimbursement for 80 percent of tuition and book costs for company-related accredited coursework. If considerable travel is required to attend the course, we will pay 50 percent of mileage costs. In 2006 Otter Tail Power Company provided $52,000 in tuition funding to 19 employees.

Employee benefits

- Retirement savings plan
- Employee stock ownership plan
- Health plan
- Dental plan
- Group life insurance
- Supplemental life insurance
- Personal accident insurance
- Flexible benefit plan
- Long-term disability plan
- Short-term disability plan
- Paid time off
- Group legal plan
- Computer financing program
- Employee interest-free financing program for appliances and electric technologies
- Employee allowances for electric heating systems
- Employee matching gift program
- Employee assistance program
- Employee adoption assistance
- Employee self-improvement
- Scholarship program for children of qualifying employees
- Special travel accident insurance
- Stock purchase plan

Employee health and safety

For decades safety has been one of our top priorities. The Minnesota Safety Council presented Otter Tail Power Company its Award of Honor in 2006 for sustained performance above and beyond industry averages. We were the only electric utility to receive an award at this level from the council in 2006.

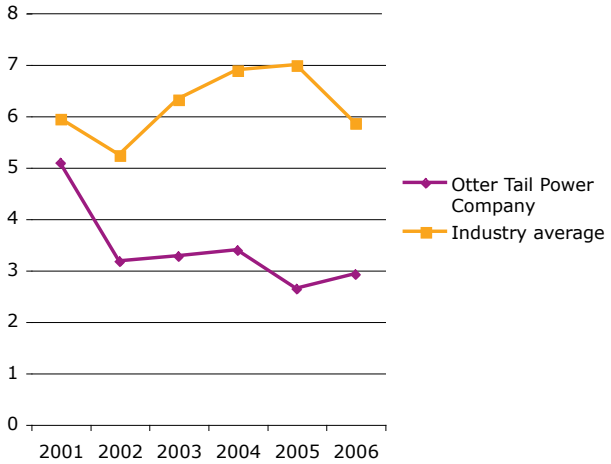
We are proud of our tradition of safety performance, which has shown and continues to show a significantly lower accident and injury rate than our industry peers. For the sixth year in a row, we ended 2006 with an OSHA recordable injury rate below the industry average.

2006 safety performance

	Goal	Actual	Industry average
Lost-time injury rate	.35 or below	.34	1.18
OSHA recordable injury rate	3.85 or below	2.92	5.86
Preventable vehicle accidents	10 or fewer	13	38

(OSHA standard recordable injury calculation: total number of cases x 200,000 / total number of hours worked)

Historical safety comparisons (OSHA recordable injury rate)



Near miss program

Otter Tail Power Company employees who experience or witness an event that was nearly an accident, or "near miss," are encouraged to report the incident anonymously. These reports are sent to a committee for review. A short report—which details what happened, why it happened, how it could have been prevented, and additional committee comments—is sent to all employees monthly so they may learn from the potential incident.

Power plant emergency program

Safety is a priority at all company facilities but is especially important at generation plants where the potential for injury is heightened. All company power plant workers receive intensive safety training upon hire with annual refreshers.

All power plant employees hold first-aid and CPR certifications. In addition, each power plant has an emergency response team made up of 12 volunteers who provide training to their coworkers monthly on the following topics: hazardous material handling, fire fighting, emergency medical technician/advanced first aid, high-angle rescue, and confined-space rescue. Each emergency response team also is available to contractors working on the site.

Field safety

Employees working in the field participate in monthly safety meetings, daily tailgate sessions, and other training opportunities to discuss safe work practices. All field employees hold first-aid and CPR certifications. In fact, 400 employees companywide are certified in CPR and first aid.

Online safety training

Our safety culture extends to all employees. We implemented a web-based program in 2006 to allow employees to complete their annual training when it best fits into their schedules. The new program allows more time for other topics during monthly safety meetings at each location.

Investing in our future through social stewardship

Investing in future employees

Tim Anderson, Service Representative, Dawson, Minnesota

Experts predict massive change in the workforce as baby boomers retire.

We anticipate that roughly half of our workforce will retire in the next ten years, taking precious skills and expertise with them. This will coincide with our projected opening of the Big Stone II power plant in 2012 and its demand for 35 to 40 new employees.

We are taking a proactive approach to the projected labor shortage by developing new recruitment materials and sending them to educational institutions and other sources for qualified workers.

We're distributing VisionQuest, an interactive career-guide DVD, free of charge to career services offices of area high schools and colleges. It features overviews of jobs in customer service, engineering, and plant and field operations.

Otter Tail Power Company also is stepping up efforts regarding scholarship programs, job fair appearances, ties to post-secondary programs, internships, speaking engagements, and internal succession planning.

Employee/retiree matching gifts for higher learning

Otter Tail Power Company matches cash donations made by employees or retirees to colleges, universities, technical schools, or local tax-deductible community scholarship funds. The minimum contribution is $25, with a $1,000 maximum per person.

Employee family scholarships

Our company scholarship program helps selected employees' children pay tuition and academic fees for full-time undergraduate study at accredited post-secondary institutions. An unbiased outside organization grants 13 scholarships yearly.

Project spotlight: Scholarships make an impact at Bismarck State College

Otter Tail Power Company donated $32,000 to Bismarck State College in 2006. The money was used for scholarships in mechanical maintenance, power plant technology, and electrical transmission systems technology. Each selected student received a $2,000 scholarship.

"We work with the instructors to find the best recipients for the scholarships," said Gordon Binek, BSC Vice President for College Advancement. "We wait until they are well into the program to identify successful students. Those students must meet continuing grade point average and attendance requirements.

"The award bridges the gap between state funding and the students' finances. For Bismarck State College, it helps attract students. But most of all, it can really impact the students' lives. It's really gratifying to read the thank-you letters from students who share what a huge impact it had on their lives.

"We have great partnerships with the energy industry," said Binek. "It's really valuable to have the support of a business like Otter Tail Power Company."

The energy programs at Bismarck State College are among the best in the nation. The Department of Energy recently designated BSC as the National Power Plant Operations Technology and Educational Center—recognition of the school's program for operators and technicians in the energy industry.

In 2006 enrollment in Bismarck State College's energy education programs was 112 students on campus and 700 students participating online. Construction is nearly complete on a new building that will house the energy programs. "We are proud of the new building and showcasing our energy program as we look to the future of energy production in North Dakota and the Upper Midwest," said Binek.

Bismarck State College accepts donation for scholarships in mechanical maintenance, power plant technology, and electrical transmission systems technology. From left, BSC Vice President for College Advancement Gordon Binek, BSC President Dr. Larry Skogen, and Otter Tail Power Company Vice President, Customer Service, Mark Helland.

"It is an incentive to succeed as students and a reward because they know somebody believes in them and wants them to succeed."

~ Gordon Binek
Vice President for College Advancement
Bismarck State College

Investing in our future through economic stewardship

Davisco Foods International, Lake Norden, South Dakota

Otter Tail Power Company is committed to helping maintain and enhance vitality in the communities we serve.

Ongoing activities designed to create jobs, increase and maintain tax base resources, and support civic development projects are a source of satisfaction to our company and a testimonial to our dedication and interest in the people we serve.

Community consultation

Otter Tail Power Company's on-staff economic development professionals take pride in helping communities and businesses evolve. We offer a variety of services to businesses and cities. Services most often provided are

- Finance strategy.
- Partnership development.
- Labor needs/development assessment.

Consultation on building, site, and other planning processes also is available.

In 2006 Otter Tail Power Company received requests for economic development assistance from 81 cities throughout the region and helped to complete 92 projects within those cities. These efforts helped to create 966 jobs in our service area and to save 152 jobs that otherwise would have been lost due to business closure or downsizing.

Development dollars

We collaborate with many partners including regional, state, federal, and private funding sources to enhance development potential for the communities we serve. Our support often is leveraged and matched by other entities through a loan-pool strategy. Our loan-pool investment at year-end 2006 was $800,000.

Otter Tail Power Company also participated in 29 grants to economic development projects in 2006 amounting to $160,000.

Direct and indirect economic impact

Our economic development efforts undoubtedly improve tax base, income, and commerce activity in the communities in our region. And school districts welcome the bright young minds moving to these communities, thanks to new job opportunities for parents.

	Minnesota	North Dakota	South Dakota
Our 800 employees live, work, shop, and play here.	465	234	101
In 2006 we paid $9,255,000 in property taxes	$4,751,000	$2,859,000	$1,645,000

Partnerships are the cornerstone of progress. Otter Tail Power Company will continue to be a partner in job creation and community development for our region.

...and to improve the quality of life in the areas in which we do business.

Investing in our future through economic stewardship

Project spotlight: Committed to greener economic pastures

"It's not often we work on a project that makes front-page news in The Wall Street Journal*."*

Rod Scheel,
Vice President, Asset Management,
in a thank-you note to
Otter Tail Power Company employees

The featured success story in a *Wall Street Journal* article on South Dakota's efforts to attract dairy farmers was about the Davisco Foods International plant in Lake Norden, South Dakota.

New plant

The Otter Tail Power Company economic development team, including Economic Development Consultant Terry Stallman, had the opportunity to help Davisco build a plant in Lake Norden. The mozzarella cheese company, headquartered in Le Sueur, Minnesota, has five milk-processing plants in South Dakota, Minnesota, and Idaho. Davisco produces more than a million pounds of cheese each day.

"The completion of the Lake Norden plant created 165 jobs. That means a great deal to that community," reports Stallman.

New jobs

The Lake Norden plant sustains 65,000 cows that produce 3 million pounds of milk each day. The plant already is planning to expand to boost output to 4.5 million pounds a day.

New community income

Along with the 165 new jobs and obvious construction and start-up economic impact, the community also benefits from the operational needs of the new plant. Some of the benefits are corn and alfalfa sales to feed the 65,000 cows, equipment purchases and maintenance, fuel sales for vehicles, and property tax payments. The benefits don't stop there. Thanks to the construction of the Davisco plant, the city of Lake Norden built a 40-acre industrial park.

"It's exciting to see projects like these come together," said former Lake Norden Mayor Rusty Antonen. "And working with economic development consultants like Terry and the others at Otter Tail Power Company goes to show how partnering today can lead to a more viable tomorrow."

That is the goal of Otter Tail Power Company's economic stewardship—partnering today for a vibrant tomorrow.

...and to improve the quality of life in the areas in which we do business.

Contact information:

- www.otpco.com
- www.conservingelectricity.com
- www.bigstoneii.com
- Idea Center
  800-493-3299
- Customer Service
  800-257-4044
- 215 South Cascade Street
  Fergus Falls, MN 56537

11/07

APPENDIX C

Design Data Report and Drawings

PILLSBURY – FARGO GENERATION OUTLET
CASS AND BARNES COUNTIES, NORTH DAKOTA

DESIGN DATA REPORT

Project

- Approximately 60-mile transmission line.
- Final layout and structure types to be completed after design is finalized.

Transmission Line

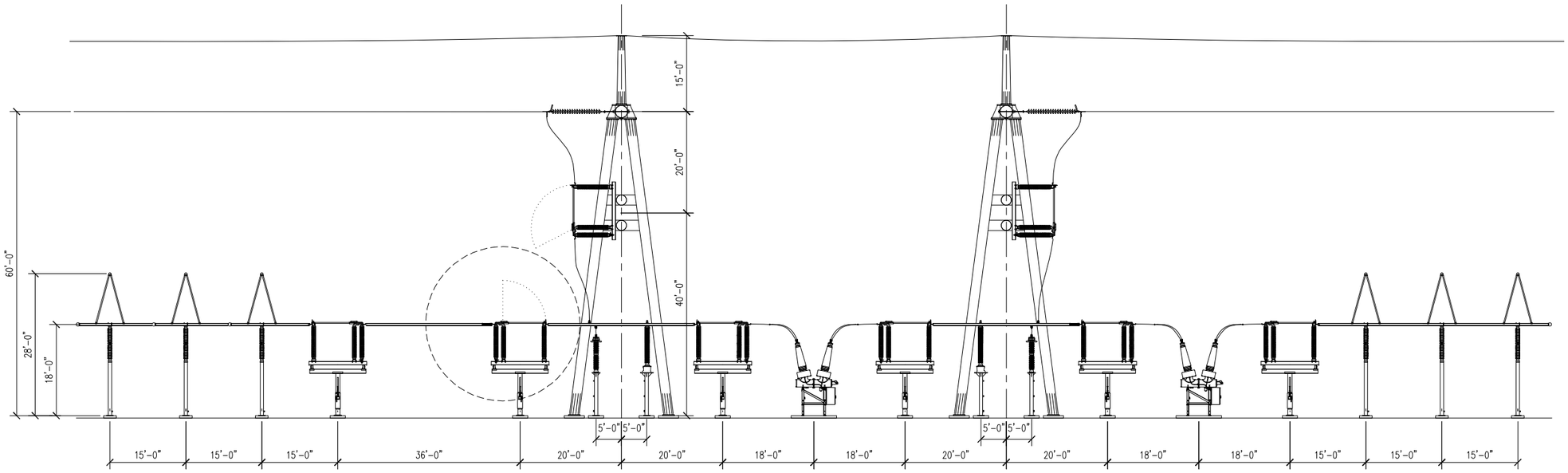
GENERAL SPECIFICATIONS

Voltage	230-kV
Average Height	105 feet (Mono-pole); 70 feet (H-frame)
Capacity	680 MW
Operating Capacity	400 MW
Average Span Length	600 feet (Mono-pole); 900 feet (H-frame)
Structure Type	H-frame & Mono-pole
Minimum Conductor Size	1272 kcmil Aluminum Conductor Steel Reinforced (ACSR)
Shield Wire	3/8 inch EHS and Optical Ground Wire
Right-of-Way	125 feet wide
Average Pole Depth	11 to 15 feet
Average Pole Diameter	5 to 6 feet
Foundation Type	Direct imbed tangent – concrete foundation angles and dead ends

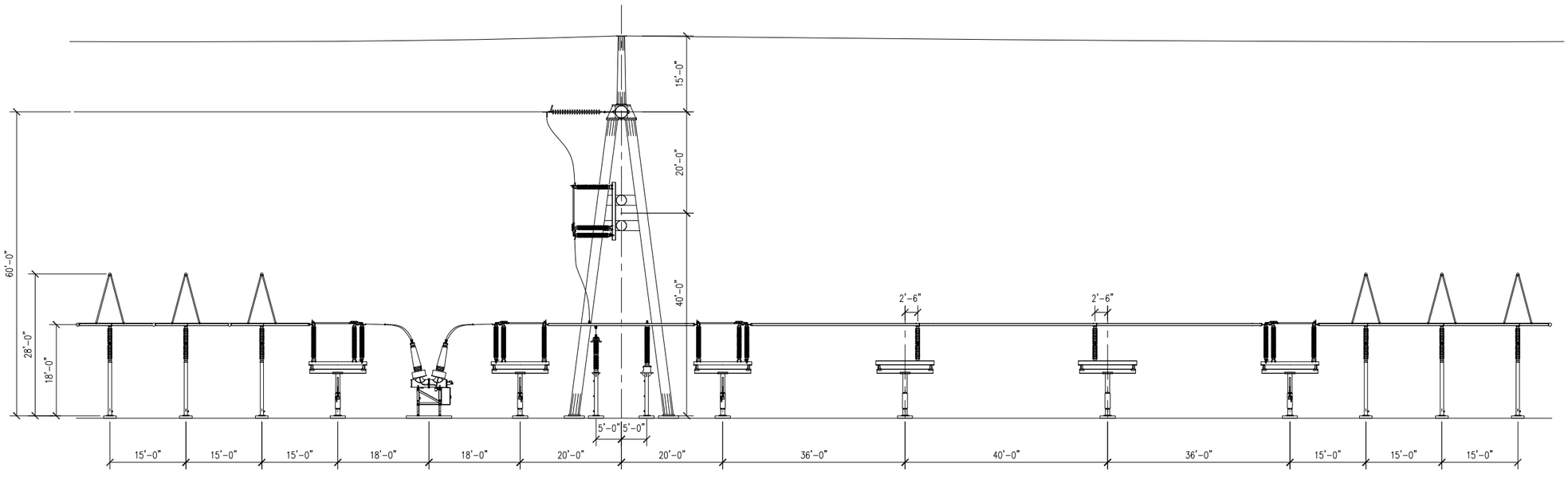
Associated Facilities

GENERAL SPECIFICATIONS

Project Substation	
Substation Voltage	230-kV
Approximate Substation For Otter Tail Power Plant	3 acres
Right-of-Way to be acquired (includes operation and maintenance building)	Approximately 60 acres
Equipment	One 230 switchgear and control house, circuit breakers, surge arrestors, ring bus
Maple River Substation Improvements	
Equipment	A 230 kV circuit breaker will be added



SECTION A–A / EP01A
SCALE: 3/32" = 1'



SECTION B–B / EP01A
SCALE: 3/32" = 1'

AT FULL SIZE
0 1 2 3 IN
0 1 2 3 4 5 6 7 8 cm

REFERENCE DRAWINGS

EP01A – 230KV EQUIPMENT PLAN
EP01B – 115KV EQUIPMENT PLAN
EP08 – 230kV DETAILS
EP16A – MATERIAL LIST SHEET 1 OF 2
EP16B – MATERIAL LIST SHEET 2 OF 2

NOTES

1. PROVIDED AS PART OF TRANSMISSION LINE CONTRACT.
2. ALL CONNECTORS FOR 230KV EQUIPMENT SHALL BE FITTED WITH HARDWARE SHIELDS AND EHV RATED.
3. LINE TRAPS ON Bø ONLY.

ISSUED FOR CLIENT REVIEW
NOT FOR CONSTRUCTION

NO.	REVISIONS	DSGN	CHKD	APVD	DATE
A	ISSUED FOR CLIENT REVIEW	TLM			

Stanley Consultants INC.
9200 East Mineral Avenue, Suite 400, Englewood, Colorado 80112-3416
www.stanleyconsultants.com

XX
X
XX

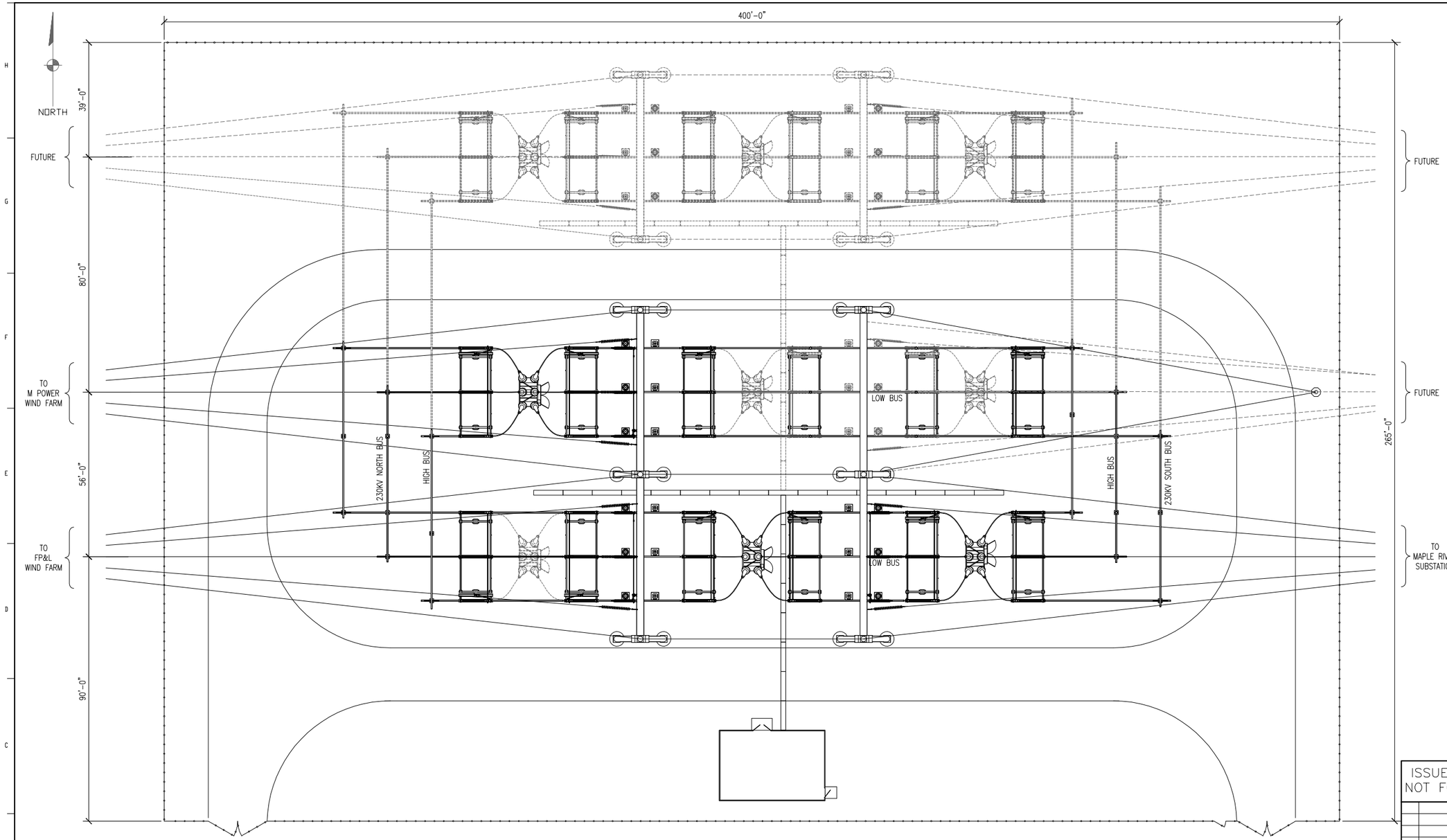
PILLSBURY SUBSTATION
SECTIONS A–A AND B–B

DESIGNED T. L. McCREADY
DRAWN T.L. MCCREADY
CHECKED
APPROVED
APPROVED
DATE

SCALE: AS NOTED
NO. 21071.01.00
REV. A
EP02

© STANLEY CONSULTANTS

Q:\21071\11-CADD\05-Elec\21071_EP02.dwg
CADD 01-R4



EQUIPMENT PLAN
SCALE: 1/16"=1'-0"

LEGEND

S - SLIP FITTING

F - FIXED

EX - EXPANSION FITING

REFERENCE DRAWINGS

EP02 -

EP03 -

EP04 -

ISSUED FOR CLIENT REVIEW
NOT FOR CONSTRUCTION

NO.	REVISIONS	DSGN	CHKD	APVD	DATE

Stanley Consultants INC.
9200 East Mineral Avenue, Suite 400, Englewood, Colorado 80112-3416
www.stanleyconsultants.com
XXX

PILLSBURY SUBSTATION
230KV EQUIPMENT PLAN

DESIGNED T. L. McCREADY
DRAWN R. FINLEY
CHECKED
APPROVED
APPROVED
DATE

SCALE: 1/16"=1'-0"
NO. 21071.01.00
REV. 0
EP01

AT FULL SIZE
0 1 2 3 IN
0 1 2 3 4 5 6 7 8 cm

© STANLEY CONSULTANTS

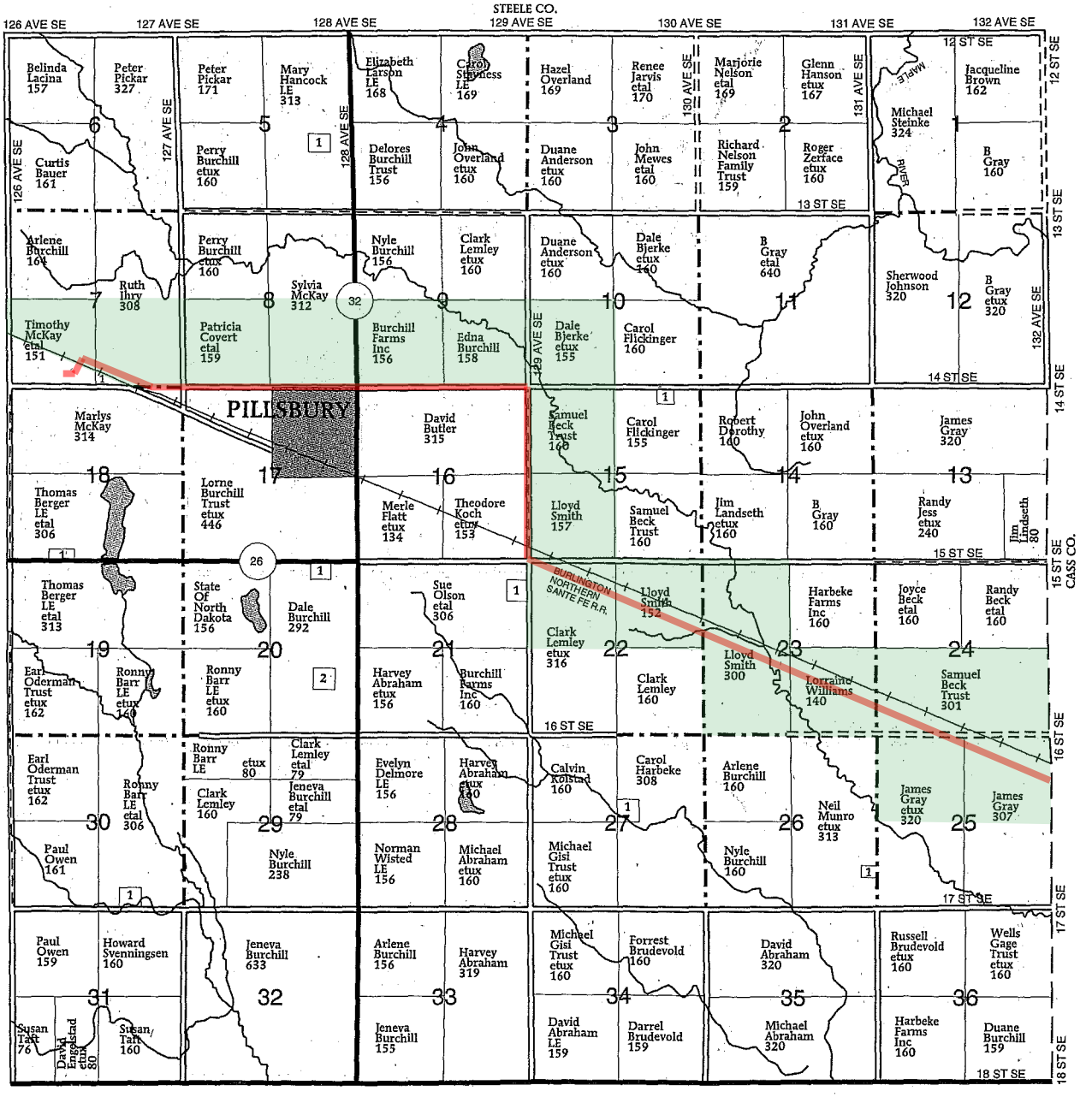
Q:\21071\11-CADD\05-Elec\21071_EP01A.dwg
CADD 81-84

APPENDIX D

Survey Permissions

T-143-N ELLSBURY PLAT R-56-W

(Landowners)



ELLSBURY TOWNSHIP

SECTION 5
1. Lemley, Clark

SECTION 7
1. City of Pillsbury

SECTION 15
1. Sorenson, Allen

SECTION 18
1. Huschka, Russell

SECTION 20
1. Kingston, Maurice
2. USA

SECTION 21
1. Levin, Lawrence

SECTION 26
1. Burchill, Nyle

SECTION 27
1. Burchill Farms Inc

SECTION 30
1. McDonough, Kevin

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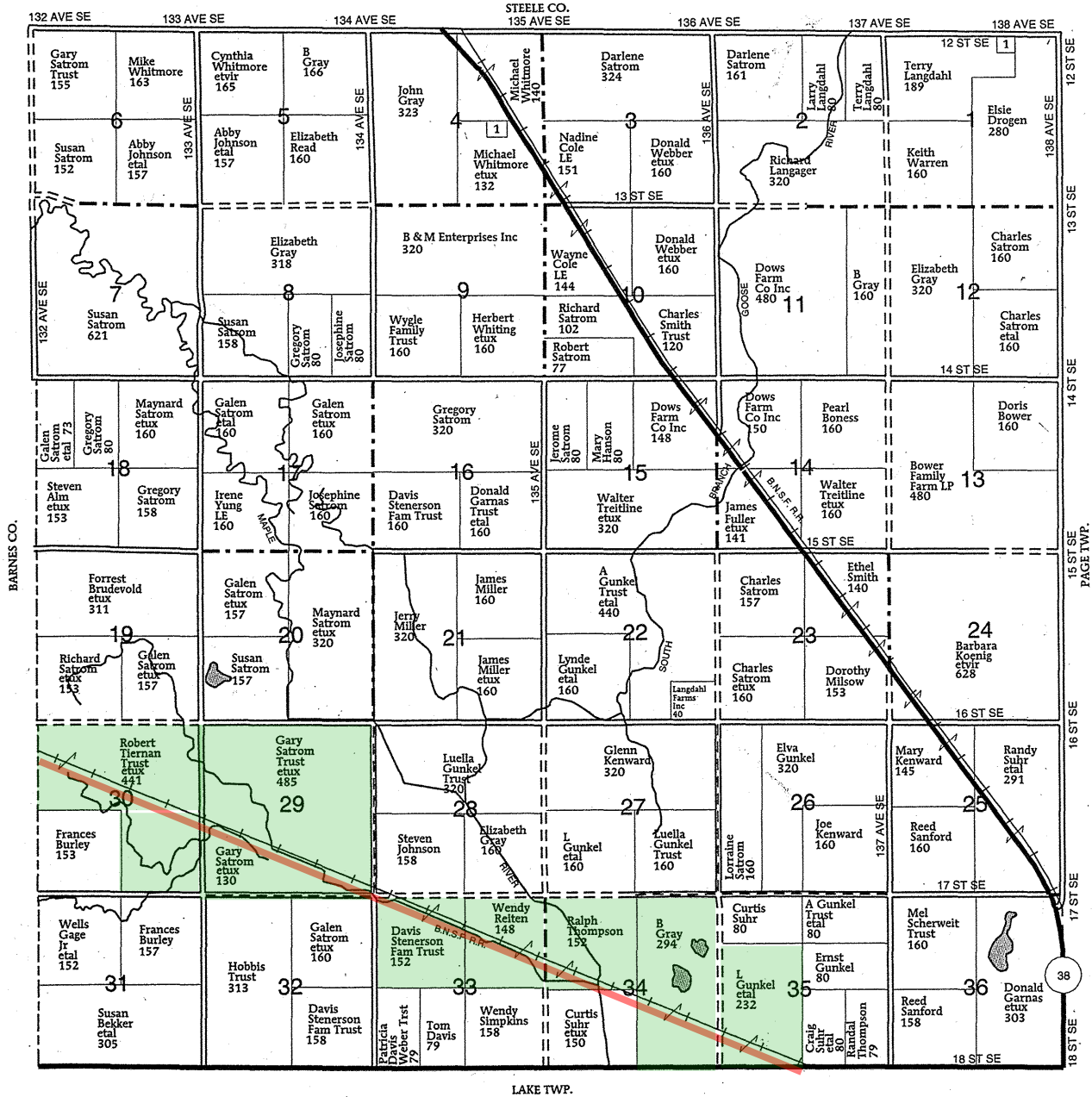
T-143-N ROCHESTER PLAT R-55-W

(Landowners)



ROCHESTER TOWNSHIP

SECTION 1

1. Langdahl Farms Inc

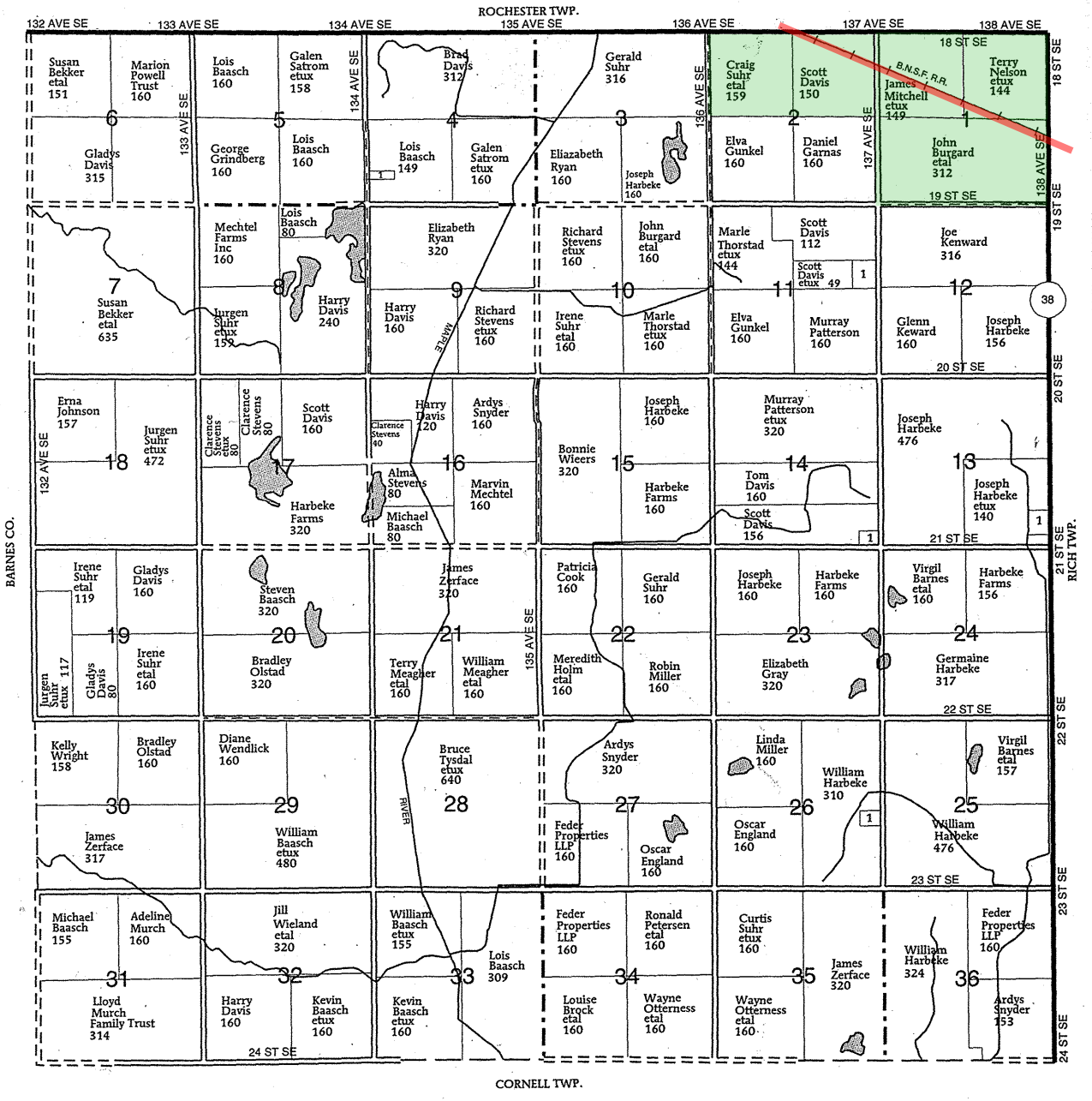
SECTION 4

1. Brown, Russell

T-142-N

LAKE PLAT
(Landowners)

R-55-W



LAKE TOWNSHIP

SECTION 4
1. Tysdal, Bruce

SECTION 11
1. Suhr, Curtis

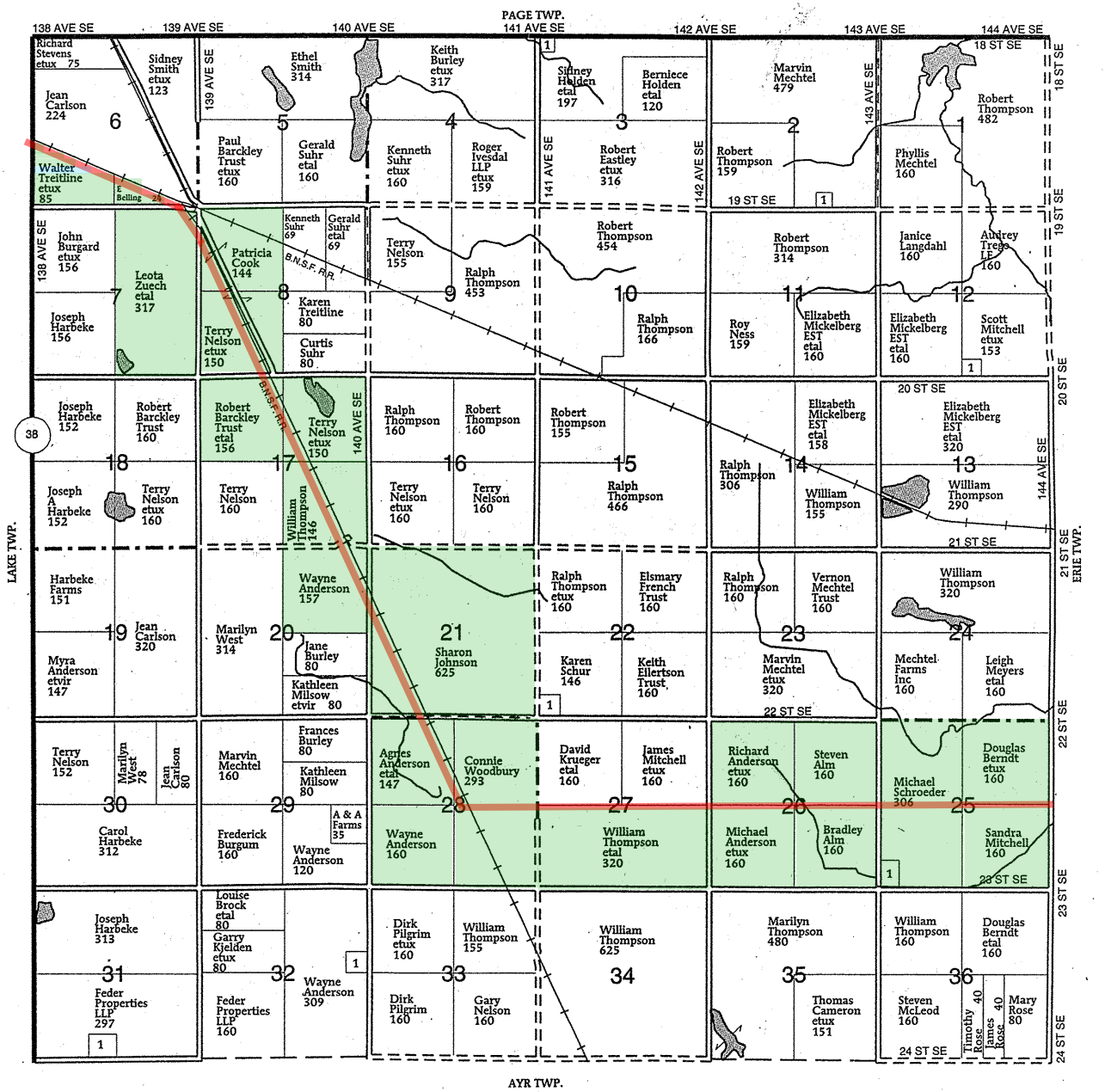
SECTION 13
1. Lindseth, Jim

SECTION 14
1. Davis, Brad

SECTION 26
1. Gray, John

T-142-N RICH PLAT R-54-W

(Landowners)



RICH TOWNSHIP

SECTION 2
1. Thompson, Robert

SECTION 3
1. Thompson Supply Inc

SECTION 12
1. I C Telephone Co

SECTION 22
1. Erickson, Gary

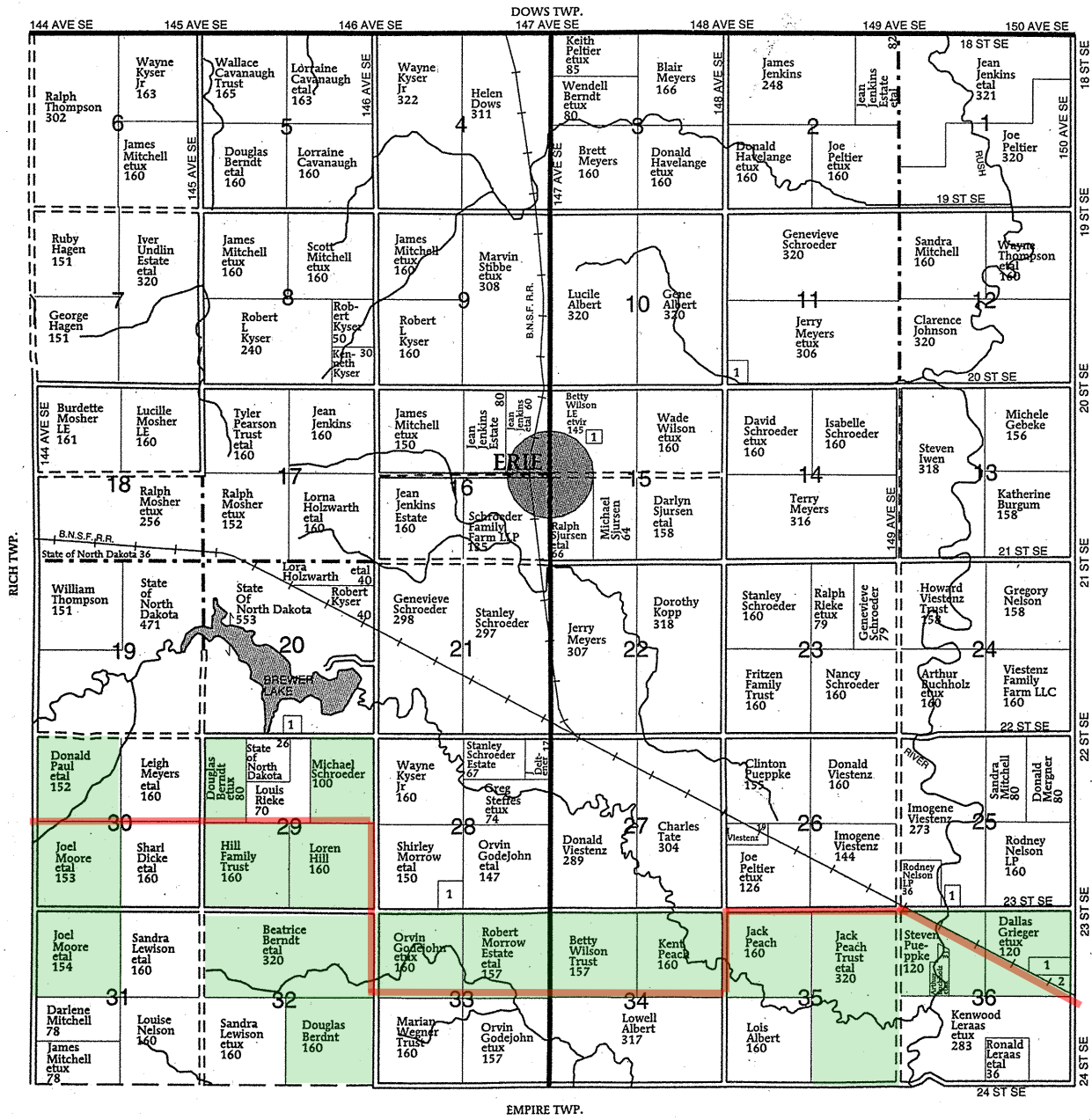
SECTION 25
1. Lamourruz, Phillip

SECTION 31
1. Pierce, Steven

SECTION 32
1. Springer, Jeff

T-142-N ERIE PLAT R-53-W

(Landowners)



ERIE TOWNSHIP

SECTION 11

1. Hanson, Matthew

SECTION 15

1. Kyser, Robert

SECTION 20

1. Schroeder, Richard

SECTION 25

1. Anderson, Douglas

SECTION 28

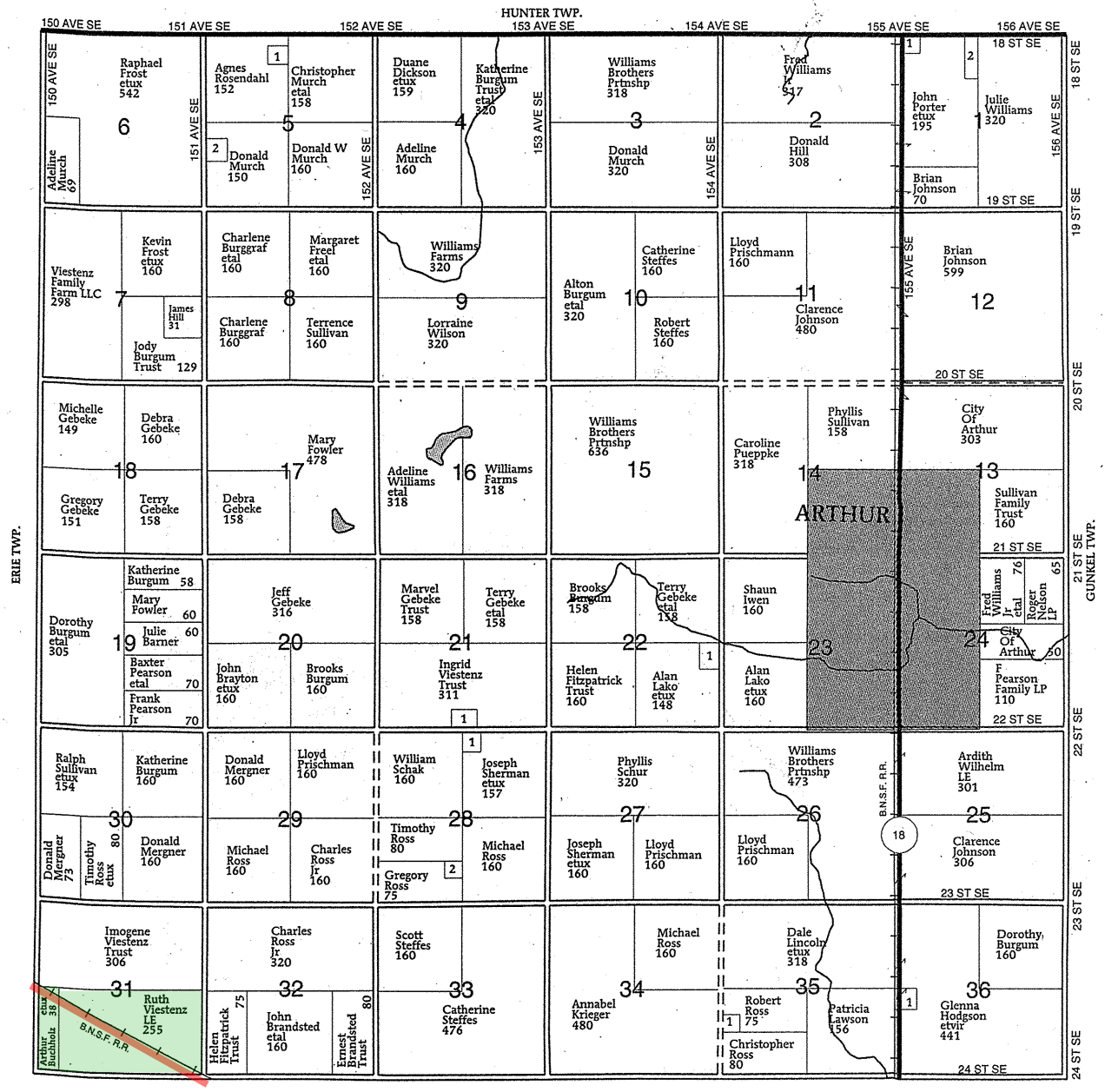
1. Idso, Alan

SECTION 36

1. Grieger, Jeffrey
2. Buchholz, Arthur

T-142-N ARTHUR PLAT R-52-W

(Landowners)



ARTHUR TOWNSHIP

SECTION 1
1. Battagler, Billy
2. Wizard Works Inc

SECTION 5
1. Murch, Rose
2. Bennett, Michael

SECTION 21
1. Degeest, Dianna

SECTION 22
1. Lako, Wayne

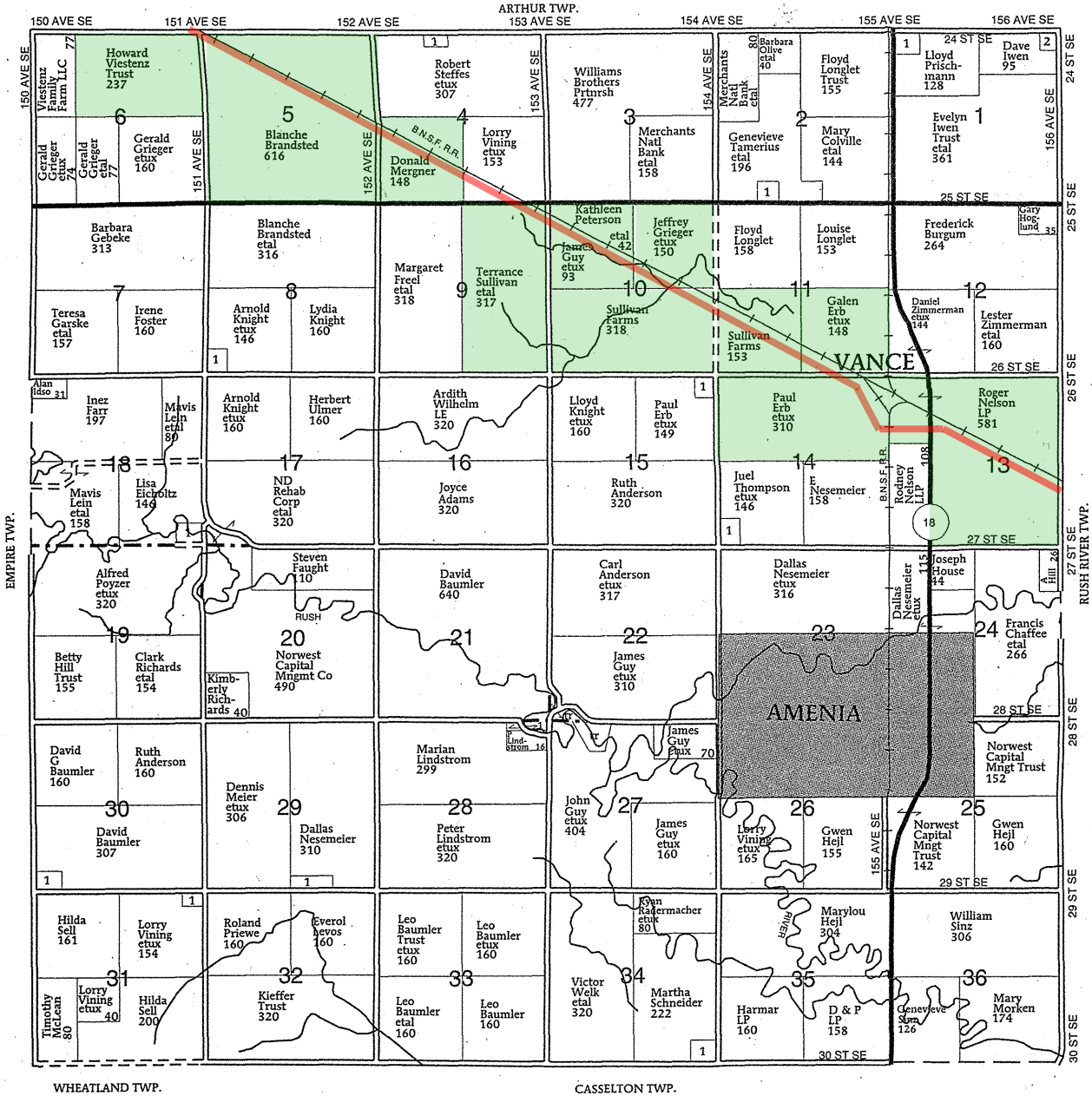
SECTION 28
1. Drader, Kevin
2. Ross Jr, Charles

SECTION 35
1. Ross, Michael

SECTION 36
1. Longlet, Scott

T-141-N AMENIA PLAT R-52-W

(Landowners)



AMENIA TOWNSHIP

SECTION 1
1. Lako, Mark
2. Rush River Water

SECTION 2
1. Bernard, Linda

SECTION 4
1. Steffes, Greg

SECTION 8
1. Knight, Lloyd

SECTION 14
1. Hochstetler, Elwood

SECTION 15
1. Erb, Galen

SECTION 18
1. Grieger, Dallas

SECTION 28
1. Baumler, David

SECTION 29
1. Priewe, Roland

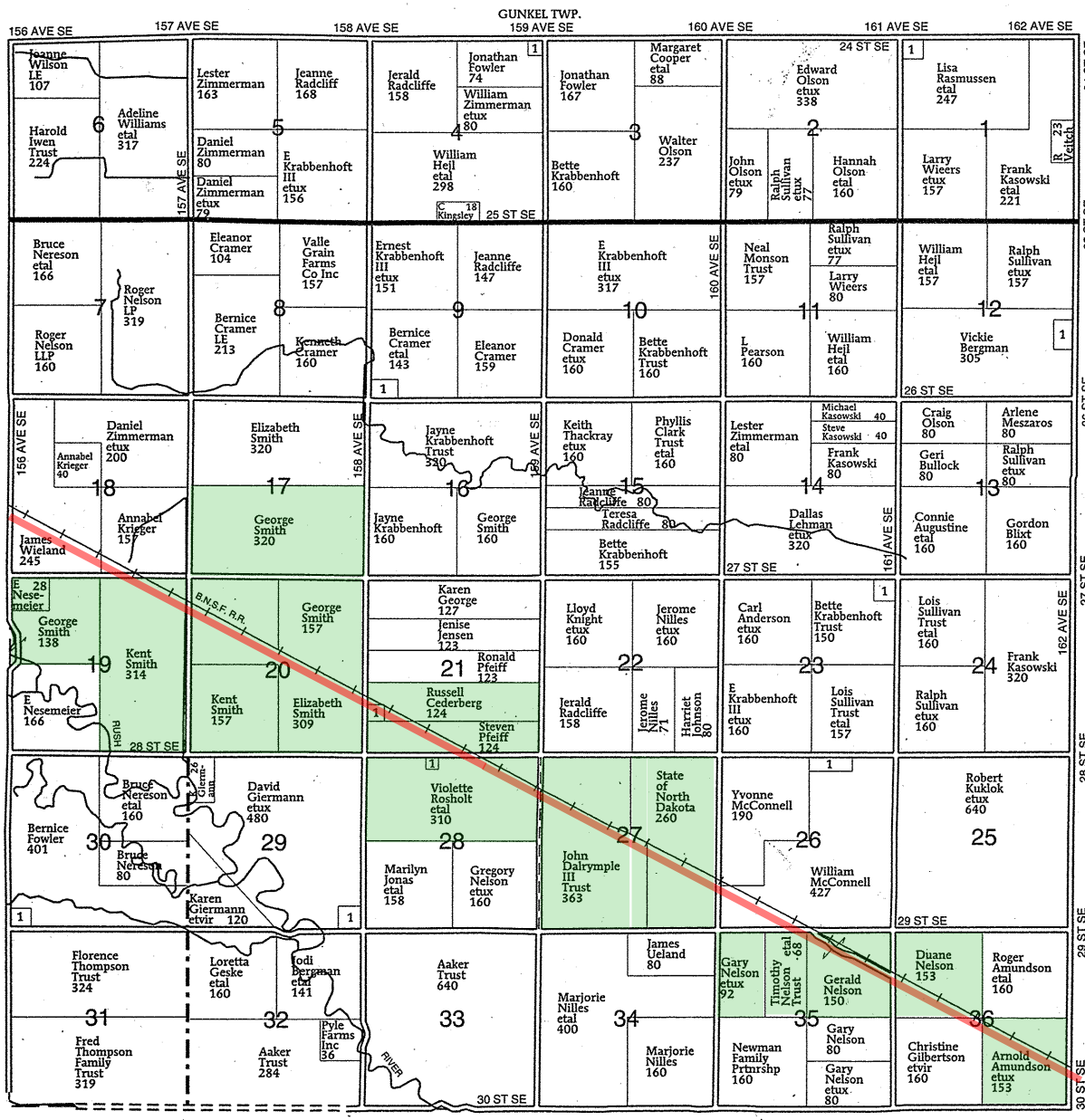
SECTION 30
1. Bruesch, Kim

SECTION 31
1. Aberle, Raymond

SECTION 34
1. Richman, Eric

T-141-N RUSH RIVER PLAT R-51-W

(Landowners)



RUSH RIVER TOWNSHIP

SECTION 1
1. Rasmussen, Kevin

SECTION 4
1. Rush River Water Dist 6

SECTION 9
1. Cramer, Kenneth

SECTION 12
1. Engebretson, Diane

SECTION 21
1. Cederberg, Richard

SECTION 23
1. Reisenauer, Mark

SECTION 26
1. McConnell, John

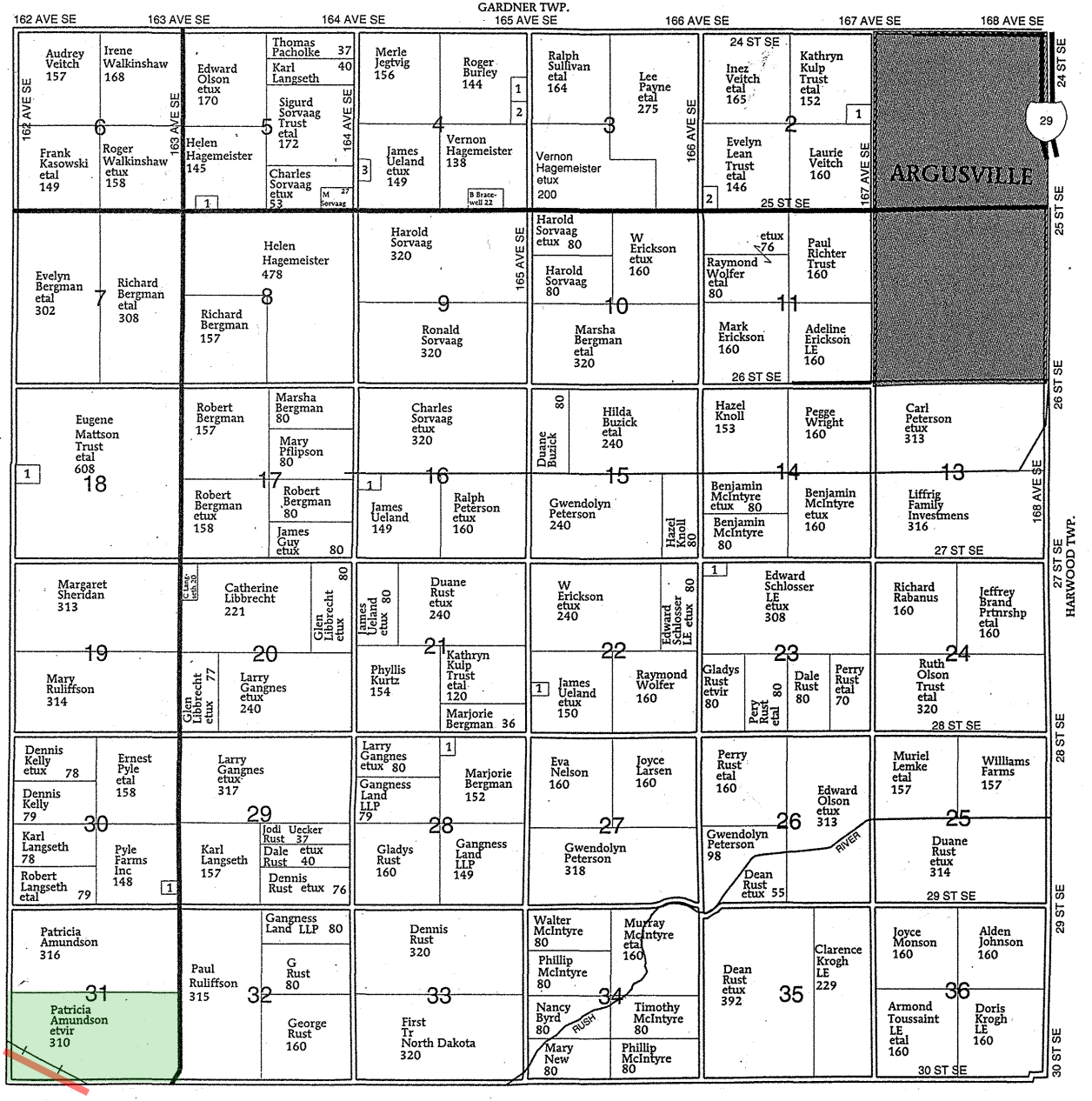
SECTION 28
1. Piehl, Eileen

SECTION 29
1. Ripplinger, Jason

SECTION 30
1. Fowler, Dennis

T-141-N BERLIN PLAT R-50-W

(Landowners)



BERLIN TOWNSHIP

SECTION 2
1. Volk, Kathleen
2. Payne, Terry

SECTION 4
1. Olerud Jr, Andrew
2. Welter, Timothy
3. Langseth, Roger
1. Hagemeister, Beth

SECTION 16
1. Bryn, Herman

SECTION 18

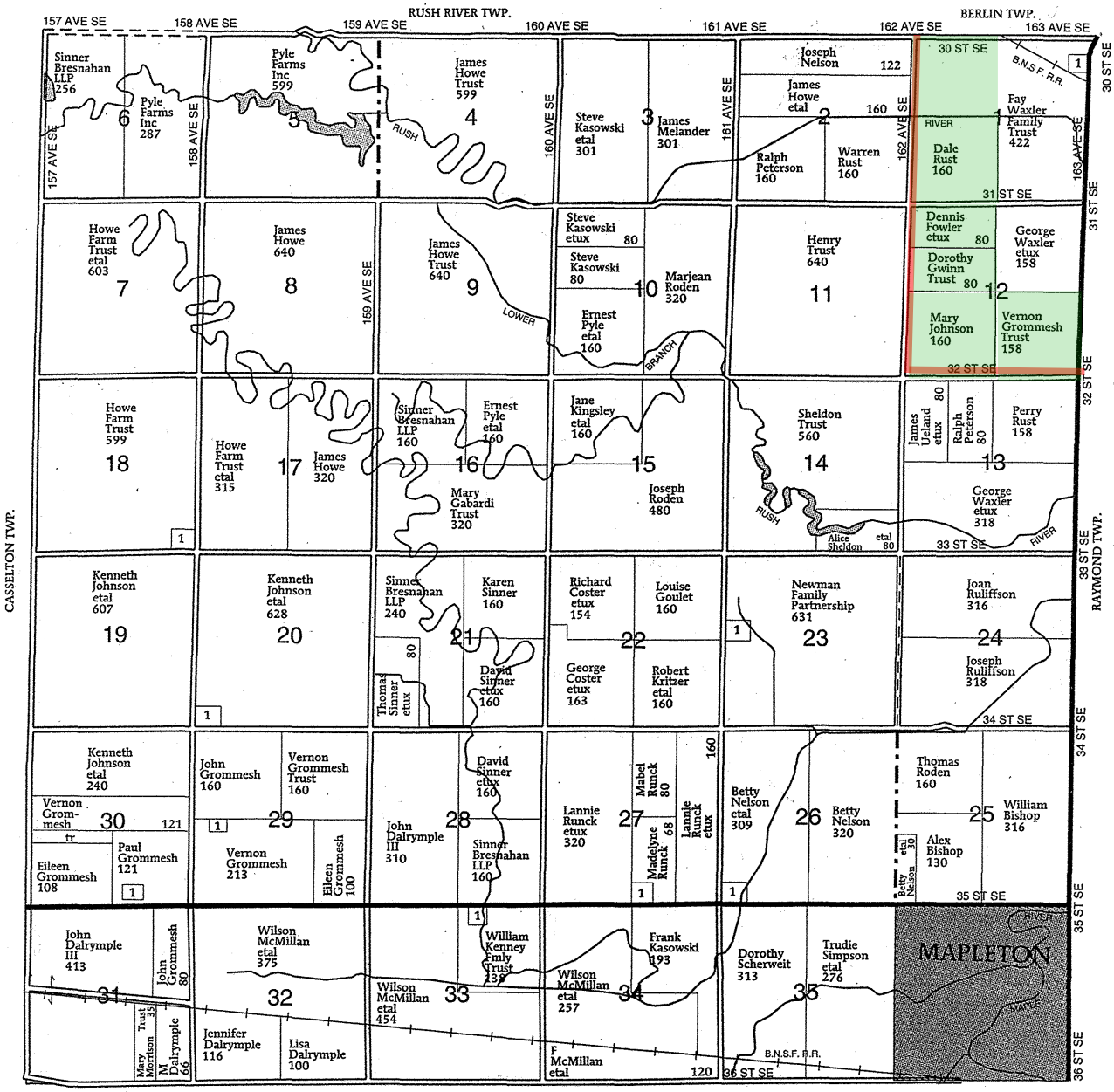
SECTION 22
1. Malzahn, Robert

SECTION 23
1. Olson II, Carl

SECTION 30
1. Rodacker, Gary
1. Verwest, Scott

T-140-N HARMONY PLAT R-51-W

(Landowners)



HARMONY TOWNSHIP

SECTION 1
1. Gooding, Charles

SECTION 18
1. Howe, James

SECTION 20
1. Pyle Farms Inc

SECTION 23
1. Nelson, Michael

SECTION 26
1. Nelson, James

SECTION 27
1. Loegering, Steven

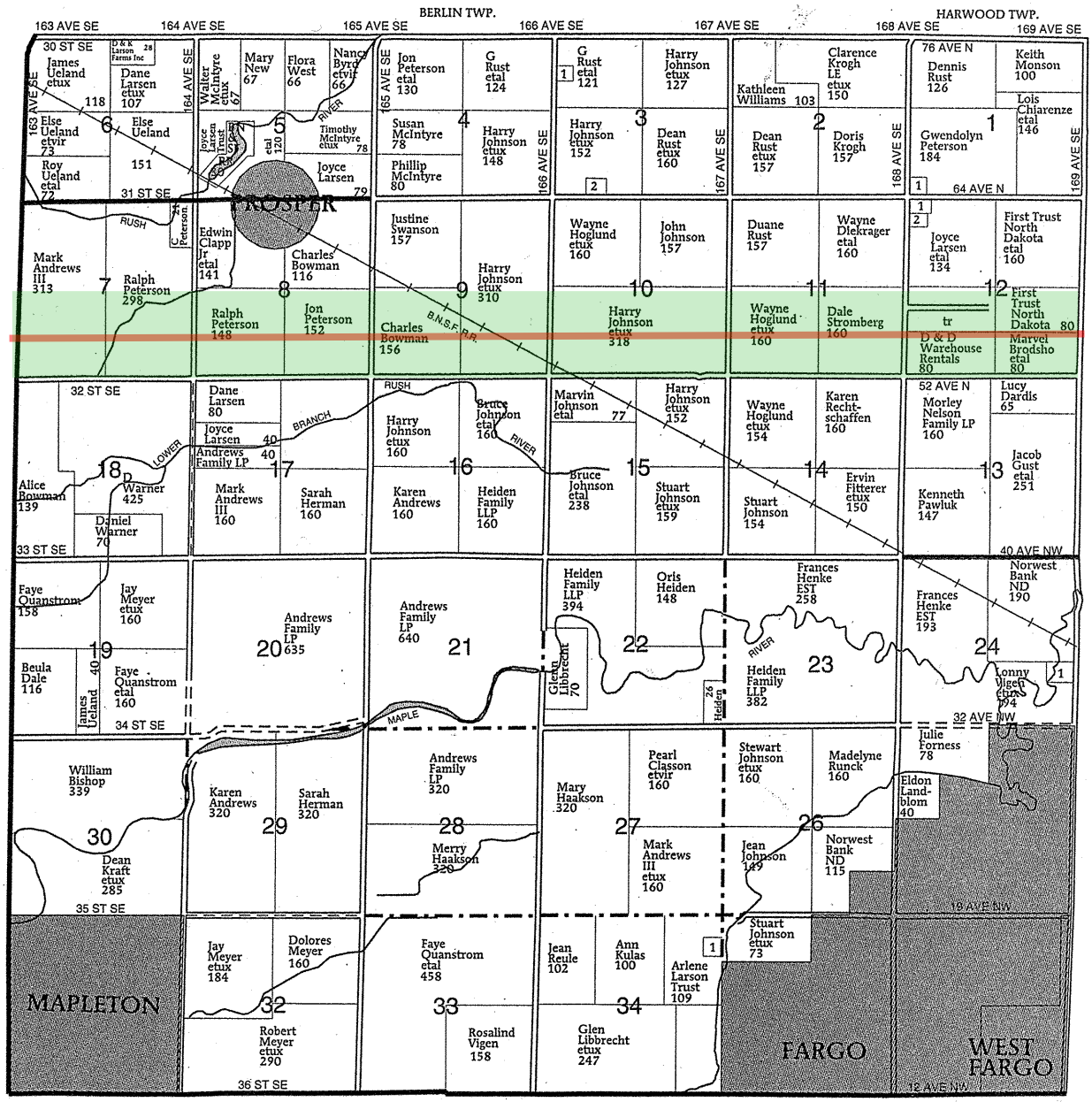
SECTION 29
1. Grommesh, John

SECTION 30
1. Grommesh, Gary

SECTION 33
1. Loegering, George

T-140-N RAYMOND PLAT R-50-W

(Landowners)



RAYMOND TOWNSHIP

SECTION 1

1. Foss, Jeffrey

SECTION 3

1. Solseng, Elton

2. Rudolph, Ronald

SECTION 12

1. Krueger, Richard

2. Vance, Joel

SECTION 24

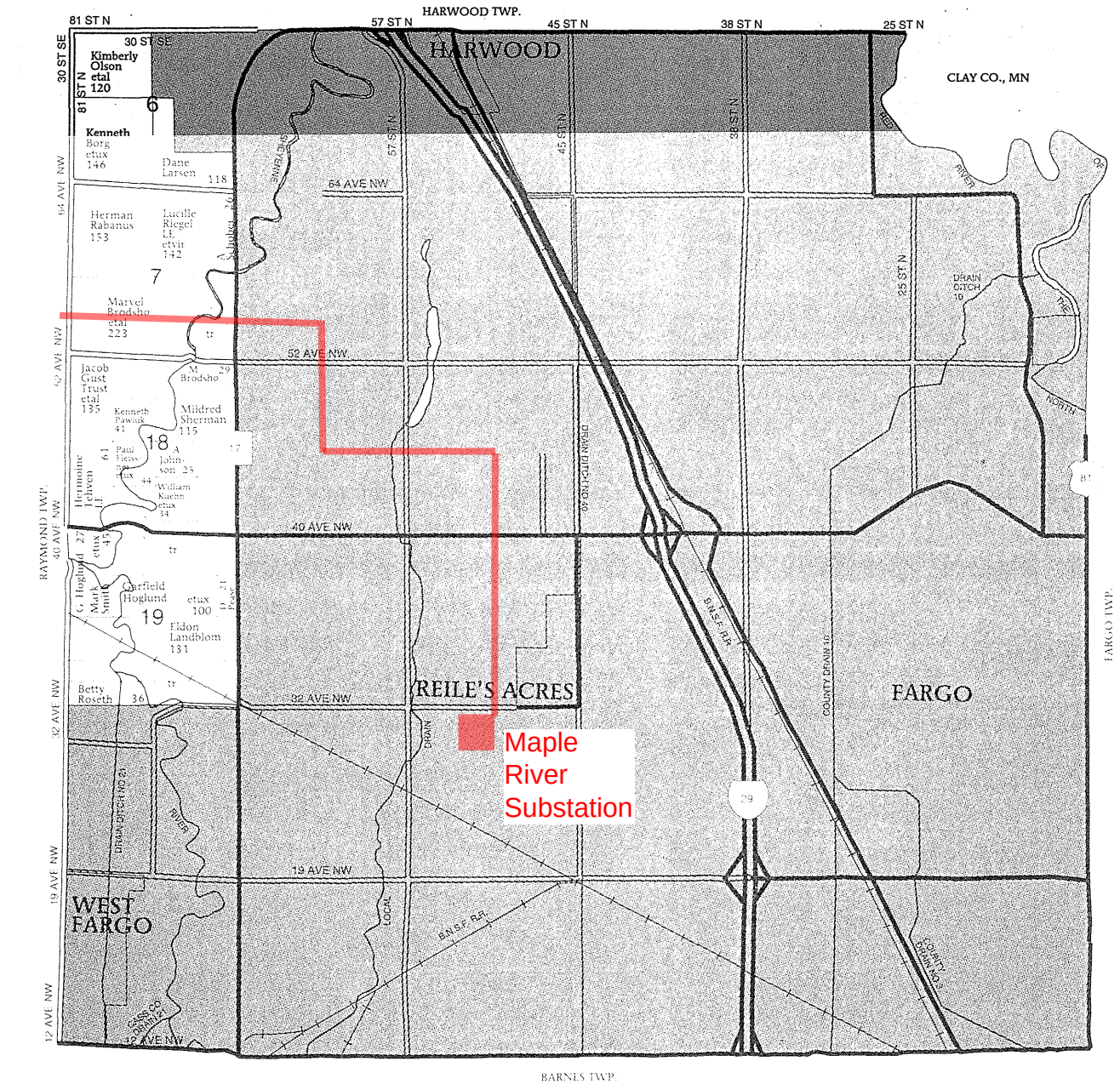
1. Roers, Theodore

SECTION 34

1. Libbrecht, Glen

T-140-N REED PLAT R-49-W

(Landowners)



APPENDIX E

Agency Correspondence

February 8, 2008

To: Project Notice Distribution List
<Title> <First Name> <Last Name>, <Job Title>
<State Agency Title>
<Address>
<City>, <State> <Zip>

RE: Proposed construction of a high-voltage transmission facility from near Luverne, North Dakota, to the Maple River Substation, northwest of Fargo, in Barnes and Cass Counties

Dear <Title> <Last Name>:

On behalf of Otter Tail Power Company (OTP) and planned joint partner Minnkota Power Cooperative, HDR Engineering, Inc. (HDR) is notifying you of the project described above. The proposed project is a generation outlet, sometimes called a gen tie line, which would transmit power from proposed area wind projects to the regional transmission grid. HDR is preparing an application for a Certificate of Corridor Compatibility and Route Permit to the North Dakota Public Services Commission (PSC). This notice is provided to the parties identified by NDAC 69-06-01-05 and other parties identified by the PSC staff.

We request that you review the proposed project and then provide comments and/or information about applicable permits that may be required from your office. Otter Tail Power Company anticipates submitting the application to the PSC by mid-March to allow construction to start early in the summer of 2008. You will receive notice when the PSC application is filed.

As the cross-hatched area of the enclosed map shows, the corridor study area is located primarily in Cass and Barnes Counties and it encompasses a small portion of Steele County, North Dakota. The study area is about six-miles wide centered on an existing railroad corridor. Legal descriptions (townships, ranges, and sections) are identified on the attached table. The proposed generation outlet includes approximately 60 miles of high-voltage 230-kV transmission line that would extend from a new substation near Pillsbury, ND (southeast of Luverne, ND) to the existing Maple River Substation, northwest of Fargo, ND.

Comments received will be included in the Certificate of Corridor Compatibility and Route Permit application. If you have questions or concerns contact me as soon as possible at the address, phone number or email provided. You may also contact Otter Tail Power Company Project Manager Al Koeckeritz at 218-739-8416 or akoeckeritz@otpco.com. Other project team leaders and I are happy to meet with you at your convenience.

HDR Engineering, Inc.

701 Xenia Avenue South
Minneapolis, MN 55416-3636

Phone (763) 591-5400
Fax (763) 591-5413
www.hdrinc.com

In addition, the project sponsors are planning to hold open house meetings in the project area near the end of this February to gather public input. Notice of those meetings will be published in local newspapers and run on local radio stations. Your attendance and participation will be welcome.

Thank you for your assistance.

Sincerely,

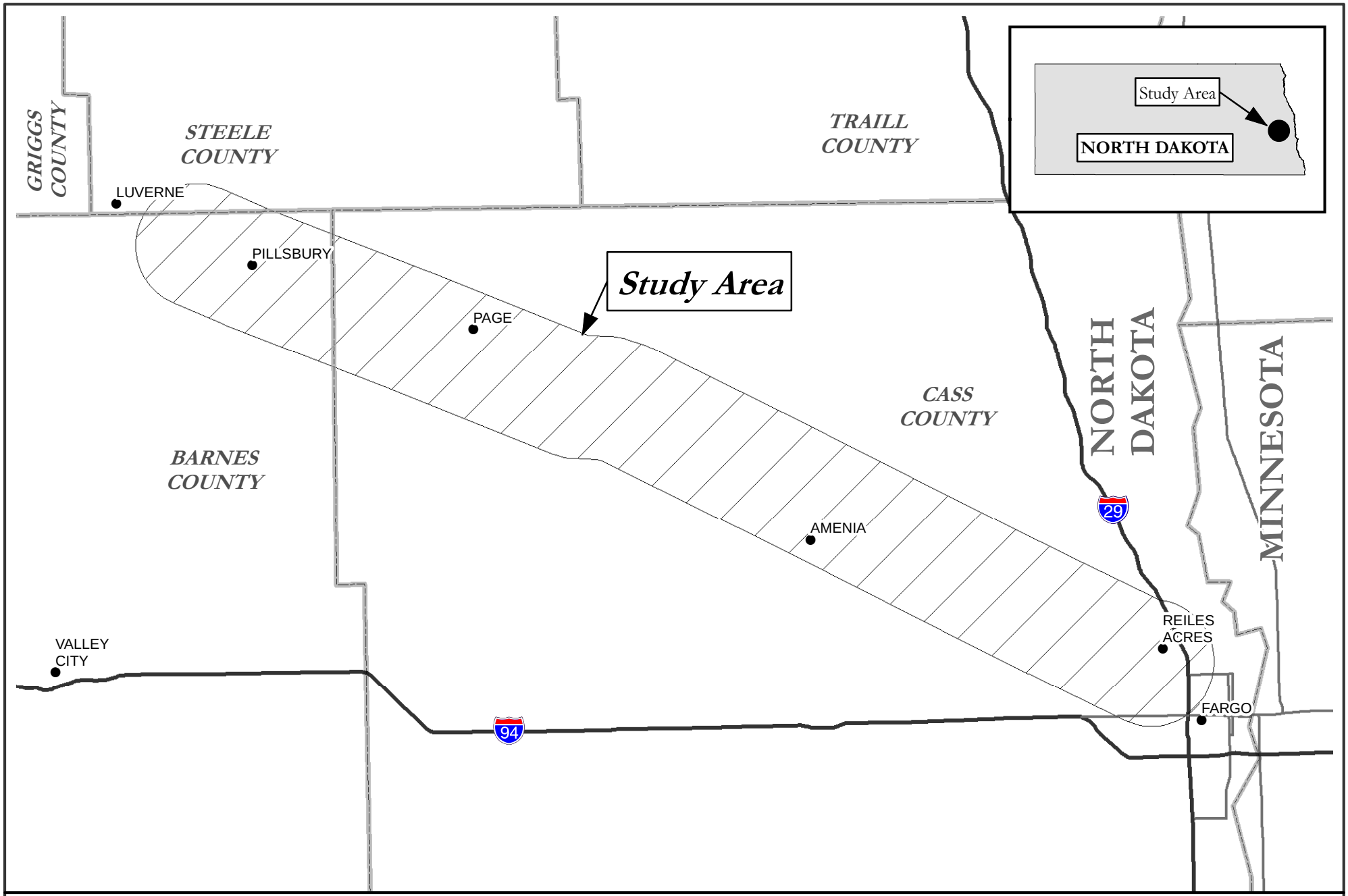
HDR Engineering, Inc.

Mitchell Shields
Project Manager
Phone: 763-591-5427

mitchell.shields@hdrinc.com

Enclosures: Project Study Area Map
Table of Study Area Locations

cc: Al Koeckeritz, Otter Tail Power Company



OTTER TAIL POWER COMPANY

Otter Tail Power Company

Gen-Tie Project Study Area

Barnes and Cass Counties, North Dakota

N

0 5 10 Miles

Otter Tail Power Company
Gen-Tie Project
Table of Study Area Locations

County	Township Name	Township	Range	Sections
Cass	Barnes	139	49	2 - 10
Cass	Mapleton	139	50	1; 2
Cass	Reed	140	49	4 - 11; 13 - 36
Cass	Raymond	140	50	1 - 30; 33 - 36
Cass	Harmony	140	51	1 - 6; 8 - 15; 23; 24
Cass	Casselton	140	52	1
Cass	Harwood	141	49	31; 32
Cass	Berlin	141	50	17 - 22; 25 - 36
Cass	Rush River	141	51	3 - 36
Cass	Amenia	141	52	1 - 28; 35; 36
Cass	Empire	141	53	1 - 6; 9 - 14
Cass	Gunkel	142	51	31; 32
Cass	Arthur	142	52	17 - 22; 25 - 36
Cass	Erie	142	53	2 - 36
Cass	Rich	142	54	1 - 30; 33 - 36
Cass	Lake	142	55	1 - 17; 23; 24
Barnes	Minnie Lake	142	56	1 - 4; 12
Cass	Dows	143	53	31; 32
Cass	Page	143	54	19; 20; 26 - 36
Cass	Rochester	143	55	6 - 9; 13 - 36
Barnes	Ellsbury	143	56	1 - 36
Barnes	Baldwin	143	57	1 - 27
Barnes	Sibley Trail	143	58	1; 12
Steele	Carpenter	144	56	29 - 34
Steele	Willow Lake	144	57	20 - 36

Otter Tail Power Company
Gen-Tie Project

Project Notice Distribution List

02-08-2008

Agency by Regulation	State Agency Title	Title	First Name	Last Name	Job Title	Address	City	State	Zip
State Agencies Identified in NDAC 69-06-01-05									
Aeronautics Commission	North Dakota Aeronautics Commission	Mr.	Gary R.	Ness	Director	P.O. Box 5020	Bismarck	ND	58502-5020
Attorney General	Attorney General's Office	Mr.	Wayne	Stenehjem	Attorney General	State Capitol 600 E. Boulevard Ave., Dept. 125	Bismarck	ND	58505
Deptartment of Agriculture	North Dakota Department of Agriculture	Mr.	Roger	Johnson	Agriculture Commissioner	ND Dept of Agriculture 600 E Boulevard Ave., Dept. 602	Bismarck	ND	58505-0020
Deptartment of Health	North Dakota Department of Health	Mr.	Terry	Dwelle, M.D.	State Health Officer	North Dakota Department of Health 600 East Boulevard Avenue	Bismarck	ND	58505-0200
Deptartment of Human Services	North Dakota Department of Human Services	Ms.	Carol K.	Olson	Executive Director	600 East Boulevard Ave., Dept. 325	Bismarck	ND	58505-0250
Deptartment of Labor	North Dakota Department of Labor	Ms.	Lisa	Fair McEvers	Commissioner of Labor	600 East Boulevard Ave., Dept. 406	Bismarck	ND	58505-0340
Department of Vocational Education	North Dakota Department of Career and Technical Education	Mr.	Wayne	Kutzer	Director and Executive Officer	State Capitol 15th Floor 600 East Boulevard Avenue, Dept. 270	Bismarck	ND	58505-0610
Economic Development Commission	North Dakota Department of Commerce Division of Economic Development and Finance	Mr.	Paul	Lucy	Director	1600 East Century Avenue, Suite 2 P.O. Box 2057	Bismarck	ND	58502-2057
Energy Development Impact Office	North Dakota State Land Department	Mr.	Jeff	Engleson	Director of Investment Division	P.O. Box 5523	Bismarck	ND	58506-5523
Game and Fish Department	North Dakota Game and Fish Department	Mr.	Mike	McKenna	Chief of Conservation and Communication	100 North Bismarck Expressway	Bismarck	ND	58501-5095
Geological Survey	North Dakota Geological Survey	Mr.	Edward C.	Murphy	State Geologist	1016 East Calgary Ave.	Bismarck	ND	58503
Governor's Office	Governor's Office	Governor	John	Hoeven		600 East Boulevard Ave., Dept. 101	Bismarck	ND	58505-0001
Highway Department	North Dakota Department of Transportation	Mr.	Troy	Gilbertson	District Engineer	Fargo District 3 503 38th St. SW	Fargo	ND	58103
State Historical Society of ND	State Historical Society of North Dakota	Mr.	Paul	Picha	Chief Archaeologist	612 East Boulevard Avenue	Bismarck	ND	58505-0830

Otter Tail Power Company
Gen-Tie Project

Project Notice Distribution List

02-08-2008

Agency by Regulation	State Agency Title	Title	First Name	Last Name	Job Title	Address	City	State	Zip
Indian Affairs Commission	North Dakota Indian Affairs Commission	Ms.	Cheryl	Kulas	Executive Director	600 East Boulevard Ave. 1st Floor - Judicial Wing	Bismarck	ND	58505-0300
Job Service ND	Job Service North Dakota	Ms.	Maren	Daley	Executive Director	P.O. Box 5507	Bismarck	ND	58506-5507
Land Department	North Dakota State Land Department	Mr.	Gary	Preszler	Land Commissioner	P.O. Box 5523	Bismarck	ND	58506-5523
Parks and Rec Department	North Dakota Parks and Recreation Department	Ms.	Chris	Dirk		1600 E. Century Avenue, Suite 3	Bismarck	ND	58503-0649
State Planning Division - office of intergovernmental assistance- office of management and budget	North Dakota Department of Commerce Division of Community Services	Mr.	Paul	Govig	Director	1600 East Century Avenue, Suite 2 P.O. Box 2057	Bismarck	ND	58502-2057
State Planning Division - office of intergovernmental assistance- office of management and budget	North Dakota Department of Commerce Division of Community Services	Ms.	Kim	Christianson	Program Manager	1601 East Century Avenue, Suite 2 P.O. Box 2057	Bismarck	ND	58502-2058
State Planning Division - office of intergovernmental assistance- office of management and budget	Office of Management and Budget	Ms.	Pam	Sharp	Director	600 East Boulevard Ave., Dept. 110	Bismarck	ND	58505-0400
Soil Conservation Committee	NDSU Extension Service - North Dakota State Soil Conservation Committee	Mr.	Scott	Hochhalter		ND State Soil Conservation Committee 2718 Gateway Avenue, Unit #104	Bismarck	ND	58503
State Water Commission	North Dakota State Water Commission	Mr.	Dale	Frink	State Engineer	900 East Boulevard, Dept. 770	Bismarck	ND	58505-0850
Federal Agencies									
U.S. Fish and Wildlife Service	U.S. Fish and Wildlife Service	Mr.	Jeff	Towner	Project Leader	North Dakota Field Office 3425 Miriam Avenue	Bismarck	ND	58501-7926
U.S. Corps of Engineers	U.S. Corps of Engineers	Mr.	Dan	Cimarosti	Regulatory Program Manager	1513 S 12th St.	Bismarck	ND	58504

Otter Tail Power Company
Gen-Tie Project

Project Notice Distribution List

02-08-2008

Agency by Regulation	State Agency Title	Title	First Name	Last Name	Job Title	Address	City	State	Zip
Local Agencies (County Chairmen/ Auditors, Township/City Officers)									
Barnes County	Barnes County Board of Commissioners	Ms.	Cindy	Schwehr	Chair	11442 23R ST SE	Rogers	ND	58479
Barnes County	Barnes County	Mr.	Ed	McGough	Auditor	230 4th Street NW	Valley City	ND	58072
Cass County	Cass County Commission	Mr.	Ken	Pawluk	Chair	PO Box 2806	Fargo	ND	58108-2806
Cass County	Cass County	Mr.	Michael	Montplaisir	Auditor	PO Box 2806	Fargo	ND	58108
Steele County	Steele County Commission	Mr.	Lance	Fugleberg	Chair	RR 1 Box 49	Portland	ND	58274-9616
Steele County	Steele County	Ms.	Linda S.	Leadbeter	Auditor	PO Box 275	Finley	ND	58230-0275
City of Pillsbury	City of Pillsbury	Mayor	Darrel	Brudevold		Box 6	Pillsbury	ND	58065
City of Page	City of Page	Mayor	Richard	Pederson		PO Box 62	Page	ND	58064
City of Fargo	City of Fargo	Mayor	Dennis	Walaker		200 3rd St. N	Fargo	ND	58102
City of Fargo	City of Fargo	Mr.	Pat	Zavoral	City Administrator	200 3rd St. N	Fargo	ND	58102
City of West Fargo	City of West Fargo	Mayor	Rich	Mattern		800 4 Ave E	West Fargo	ND	58078
City of West Fargo	City of West Fargo	Mr.	Jim	Brownlee	City Administrator	800 4 Ave E	West Fargo	ND	58078
Amenia	City of Amenia	Mayor	Donna	Myers		PO Box 35	Amenia	ND	58004-0035
Reiles Acres	City of Reiles Acres	Mayor	Scott	Anderson		4635 35th Avenue North	Reile's Acres	ND	58102-5413
Steele County	Carpenter Township	Mr.	Mike	Steinke	Chair	Rt. 2 Box 8	Hope	ND	58046
Steele County	Willow Lake Township	Mr.	Tom	Breckheimer	Chair	Box 142	LuVerne	ND	58056
Barnes County	Minnie Lake Township	Mr.	Mike	Abraham	Chair	1840 103th Ave SE	Page	ND	58064
Barnes County	Ellsbury Township	Mr.	Jim	Gray	Chair	13106 17 St SE	Page	ND	58064
Barnes County	Baldwin Township	Mr.	Rodd	Svenningsen	Chair	12160 14th St SE	LuVerne	ND	58056
Barnes County	Sibley Trail Township	Mr.	Robert	Fus	Chair	11837 15th St SE	Dazey	ND	58429
Cass County	Page Township	Mr.	Steve	Johnson	Chair	1710 141 Avenue SE	Page	ND	58064-9779
Cass County	Raymond Township	Mr.	Ross	Warner	Chair	16365 33 St SE	Mapelton	ND	58059-9748
Cass County	Reed Township	Mr.	Curt	Vanek	Chair	PO Box 912	West Fargo	ND	58078
Cass County	Rich Township	Mr.	Mike	Anderson	Chair	2264 140 Ave SE	Page	ND	58064-9794
Cass County	Rochester Township	Mr.	Mike	Whitmore	Chair	13498 12 St SE	Hope	ND	58046-9305
Cass County	Rush River Township	Mr.	Donald	Cramer	Chair	15879 26 St SE	Amenia	ND	58004-9707
State Legislators (Senators and Representatives of districts in the corridor location)									
District 20	Senator	Mr.	Elroy	Lindaas		735 153rd Avenue NE	Mayville	ND	58257-9673
District 20	Representative	Mr.	Ole	Aarsvold		709 155th Avenue SE	Blanchard	ND	58009-9513
District 20	Representative	Mr.	Lee	Kaldor		P.O. Box 215	Mayville	ND	58257-0215
District 22	Senator	Mr.	Gary A.	Lee		P.O. Box 3	Casselton	ND	58012-0003
District 22	Representative	Mr.	Wesley R.	Belter		15287 47th Street SE	Leonard	ND	58052-9763
District 22	Representative	Ms.	Vonnie	Pietsch		P.O. Box 651	Casselton	ND	58012-0651
District 45	Senator	Mr.	Tom	Fiebiger		6432 North 13th Street	Fargo	ND	58102-6011
District 45	Representative	Mr.	Rick	Berg		P.O. Box 3024	Fargo	ND	58108-3024
District 45	Representative	Mr.	Edmund	Gruchalla		3256 Evergreen Circle	Fargo	ND	58102-1213

February 15, 2008

Mr. J. R. Flores, State Conservationist
U.S. Department of Agriculture
Natural Resources Conservation Service
P.O. Box 1458
Bismarck, ND 58502-1458

RE: Proposed construction of a high-voltage transmission facility from near Luverne, North Dakota, to the Maple River Substation, northwest of Fargo, in Barnes and Cass Counties

Dear Mr. Flores:

On behalf of Otter Tail Power Company (OTP) and planned joint partner Minnkota Power Cooperative, HDR Engineering, Inc. (HDR) is notifying you of the project described above. The proposed project is a generation outlet, sometimes called a gen tie line, which would transmit power from proposed area wind projects to the regional transmission grid. HDR is preparing an application for a Certificate of Corridor Compatibility and Route Permit to the North Dakota Public Services Commission (PSC). This notice is provided to the parties identified by NDAC 69-06-01-05 and other parties identified by the PSC staff.

We request that you review the proposed project and then provide comments and/or information about applicable permits that may be required from your office. Otter Tail Power Company anticipates submitting the application to the PSC by mid-March to allow construction to start early in the summer of 2008. You will receive notice when the PSC application is filed.

As the cross-hatched area of the enclosed map shows, the corridor study area is located primarily in Cass and Barnes Counties and it encompasses a small portion of Steele County, North Dakota. The study area is about six-miles wide centered on an existing railroad corridor. Legal descriptions (townships, ranges, and sections) are identified on the attached table. The proposed generation outlet includes approximately 60 miles of high-voltage 230-kV transmission line that would extend from a new substation near Pillsbury, ND (southeast of Luverne, ND) to the existing Maple River Substation, northwest of Fargo, ND.

Comments received will be included in the Certificate of Corridor Compatibility and Route Permit application. If you have questions or concerns contact me as soon as possible at the address, phone number or email provided. You may also contact Otter Tail Power Company Project Manager Al Koeckeritz at 218-739-8416 or akoeckeritz@otpco.com. Other project team leaders and I are happy to meet with you at your convenience.

HDR Engineering, Inc.

701 Xenia Avenue South
Minneapolis, MN 55416-3636

Phone (763) 591-5400
Fax (763) 591-5413
www.hdrinc.com

In addition, the project sponsors are planning to hold open house meetings in the project area near the end of this February to gather public input. Notice of those meetings will be published in local newspapers and run on local radio stations. Your attendance and participation will be welcome.

Thank you for your assistance.

Sincerely,

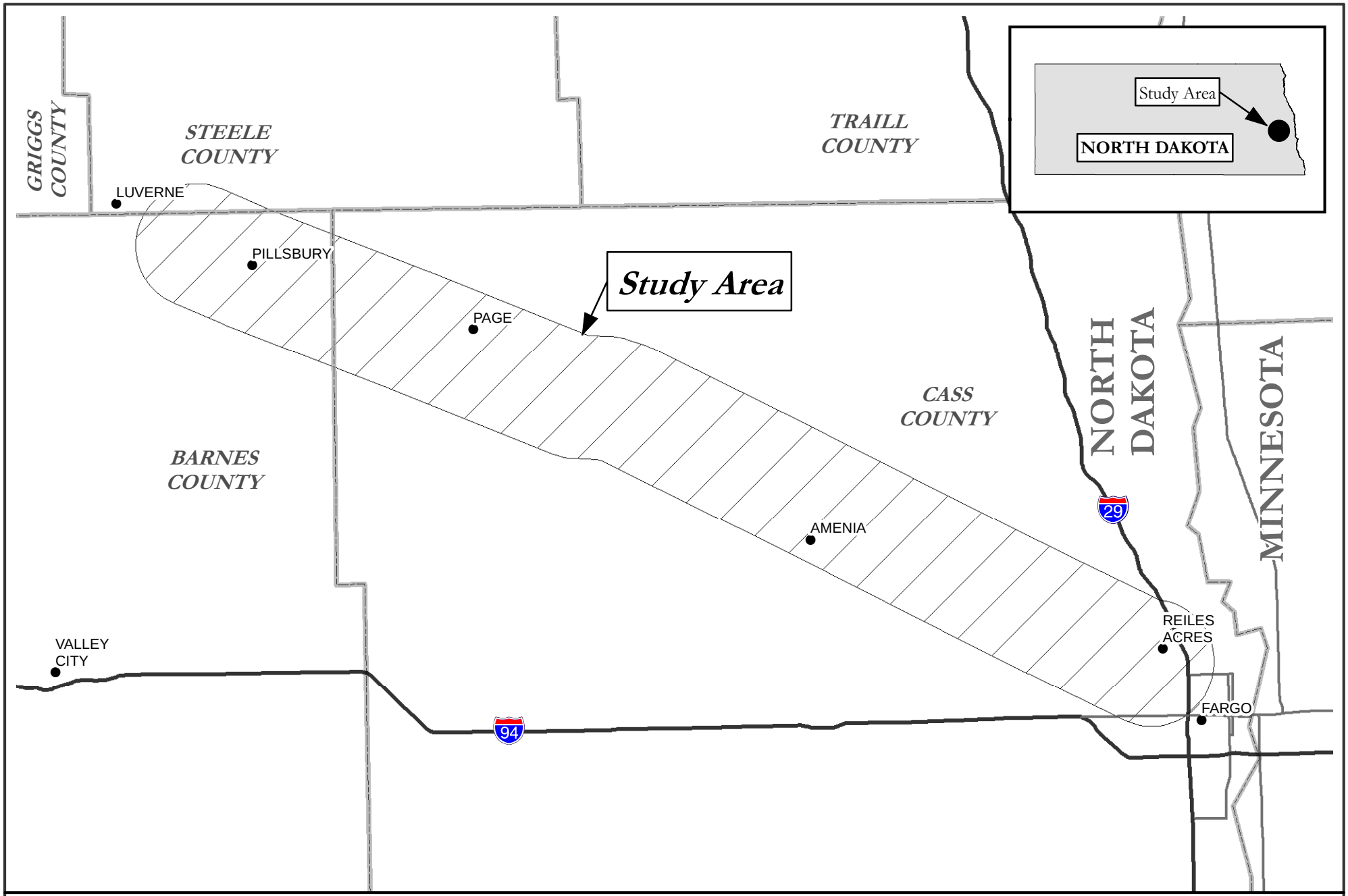
HDR Engineering, Inc.

Mitchell Shields
Project Manager
Phone: 763-591-5427

mitchell.shields@hdrinc.com

Enclosures: Project Study Area Map
Table of Study Area Locations

cc: Al Koeckeritz, Otter Tail Power Company



OTTER TAIL POWER COMPANY

Otter Tail Power Company

Gen-Tie Project Study Area

Barnes and Cass Counties, North Dakota

N

0 5 10 Miles

Otter Tail Power Company
Gen-Tie Project
Table of Study Area Locations

County	Township Name	Township	Range	Sections
Cass	Barnes	139	49	2 - 10
Cass	Mapleton	139	50	1; 2
Cass	Reed	140	49	4 - 11; 13 - 36
Cass	Raymond	140	50	1 - 30; 33 - 36
Cass	Harmony	140	51	1 - 6; 8 - 15; 23; 24
Cass	Casselton	140	52	1
Cass	Harwood	141	49	31; 32
Cass	Berlin	141	50	17 - 22; 25 - 36
Cass	Rush River	141	51	3 - 36
Cass	Amenia	141	52	1 - 28; 35; 36
Cass	Empire	141	53	1 - 6; 9 - 14
Cass	Gunkel	142	51	31; 32
Cass	Arthur	142	52	17 - 22; 25 - 36
Cass	Erie	142	53	2 - 36
Cass	Rich	142	54	1 - 30; 33 - 36
Cass	Lake	142	55	1 - 17; 23; 24
Barnes	Minnie Lake	142	56	1 - 4; 12
Cass	Dows	143	53	31; 32
Cass	Page	143	54	19; 20; 26 - 36
Cass	Rochester	143	55	6 - 9; 13 - 36
Barnes	Ellsbury	143	56	1 - 36
Barnes	Baldwin	143	57	1 - 27
Barnes	Sibley Trail	143	58	1; 12
Steele	Carpenter	144	56	29 - 34
Steele	Willow Lake	144	57	20 - 36

"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

RECEIVED
MAR 0 3 2008
HDR Engineering, Inc.

February 28, 2008

Mitchell Shields
Project Manager
HDR Engineering, Inc.
701 Xenia Avenue South
Minneapolis, MN 55416-3636

Dear Mr. Shields:

RE: Proposed High-Voltage Transmission Facility
Luverne to Maple River Substation, North Dakota

The North Dakota Game and Fish Department has reviewed this project for wildlife concerns.

The National Wetland Inventory indicates various wetlands within the proposed project corridor. We recommend that steps be taken to protect wetlands that cannot be avoided, above-ground appurtenances not be placed in wetland areas, and existing drainage patterns be maintained.

The project will cross the Sheyenne and Maple Rivers, both classified as fishery resources. If construction is necessary within either waterway, work should not take place between April 15 and June 1 to protect the resource during the primary spawning season.

We also ask that controls be implemented to minimize erosion and sedimentation into streams, every effort be made to avoid destruction of woody vegetation, and disturbed areas be seeded with suitable native grass and forb species where appropriate.

Sincerely,

Steve Dyke

(for) Michael G. McKenna
Chief
Conservation & Communication Division

js

ND Game and Fish Department – PLOTS Data Correspondence

From: Zimmerman-Lutz, Laura R.
Sent: Thursday, March 06, 2008 12:50 PM
To: Hosek, Brian M.
Subject: RE: Request for PLOTS data

Brian - Thank you for getting me this data. I am going through it now. Laura

---

From: Hosek, Brian M. [mailto:bhosek@nd.gov]
Sent: Wednesday, March 05, 2008 12:46 PM
To: Zimmerman-Lutz, Laura R.
Subject: RE: Request for PLOTS data

Included are Wildlife Management Areas. They are indicated in the unit_type field as WMA. If you have any questions you can contact me directly at 701-328-6369.

From: Zimmerman-Lutz, Laura R. [mailto:Laura.Lutz-Zimmerman@hdrinc.com]
Sent: Tuesday, March 04, 2008 1:07 PM
To: Hosek, Brian M.
Subject: Request for PLOTS data

Hi Brian - Thank you for your assistance. As we discussed on the phone, attached you will find the shape file for the 6 mile (ignore that the file name says 3mi, its 6mi) study corridor the for proposed transmission line in Cass, Barnes, and Steele Counties. For your convenience, I have also included a table with all of the township, range, and sections for the corridor. Call me if you have any questions.

Regards,
Laura

Laura R. Lutz-Zimmerman
HDR|ONE COMPANY - *Many Solutions*
303 East 17th Avenue|Suite 700|Denver, CO 80203
Phone: (303) 318-6344| Fax: (303) 860-7139
laura.lutz-zimmerman@hdrinc.com

See attached files:
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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
3425 Miriam Avenue
Bismarck, North Dakota 58501

FEB 20 2008

RECEIVED
FEB 26 2008
HDR Engineering, Inc.

Mr. Mitchell Shields
Project Manager
HDR Engineering, Inc.
701 Xenia Avenue South
Minneapolis, Minnesota 55416-3636

Re: High-voltage transmission facility from near Luverne, ND, to Maple River Substation, northwest of Fargo, in Barnes and Cass Counties

Dear Mr. Shields:

This letter is regarding the Otter Tail Power Company and Minnkota Power Cooperative planned partnership to provide a generation outlet to transmit power from proposed area wind projects to the regional transmission grid, from near Luverne, ND, to the Maple River Substation northwest of Fargo, in Barnes and Cass Counties. We offer the following comments under the authority of and in accordance with the Migratory Bird Treaty Act (16 U.S.C. 703 et seq.) and the Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.).

The U.S. Fish and Wildlife Service (Service) administers fee title and easement lands throughout North Dakota. A review of our county plat maps indicate that the proposed project crosses several Service easements as shown on the enclosed maps. Special Use or right-of-way permits will be necessary for any construction resulting in impacts to Service administered easements or fee title lands. The issuance of Special Use or right-of-way permits is subject to the final determination of a refuge compatibility review process. For specific information on Service property interests and to determine the need for permits, contact Ed Meendering, Valley City Wetland Management District, 11515 River Road, Valley City, North Dakota 58072 (701-845-3466).

To minimize disturbance to fish and wildlife resources in the project area, the Service provides the following recommendations:

- Defer the timing of construction to late summer (after July 15) or fall so as not to disrupt waterfowl or other wildlife during the nesting season and to avoid high water conditions.

- Locate construction to avoid placement of fill in wetlands along the route.
- Replace unavoidable loss of wetland habitat with functionally equivalent wetlands.
- Install and maintain appropriate erosion control measures to reduce sediment transport to adjacent wetlands and stream channels.
- Reseed disturbed areas with a mixture of native grass and forb species.
- Replant trees/shrubs at a ratio of two planted for each one removed from riparian areas.

A list of federally endangered and threatened species that may be present within the proposed project's area of influence is enclosed. This list fulfills requirements of the Service under Section 7 of the Endangered Species Act.

If a Federal agency authorizes, funds, or carries out a proposed action, the responsible Federal agency, or its delegated agent, is required to evaluate whether the action "may affect" listed species. If the Federal agency determines the action "may affect" listed species, then the responsible Federal agency shall request formal section 7 consultation with this office. If the evaluation shows a "no effect" determination on listed species, further consultation is not necessary. If a private entity receives Federal funding for a construction project, or if any Federal permit is required, the Federal agency may designate the fund recipient or permittee as its agent for purposes of section 7 consultation.

Although there have been historical sightings in Cass and Barnes counties, the project is outside of the major migratory path for the whooping crane and the Service considers the likelihood of the project impacting whooping cranes discountable. To further reduce the potential of a whooping crane striking a line, Otter Tail Power Company and Minnkota Power Cooperative may opt to bury the new transmission lines underground, or mark the overhead lines with state-of-the art line marking devices proactively within one mile of wetlands along the project route. Some of the available marking devices include: aerial marker spheres, swinging plates, spiral vibration dampers, and bird flight diverters.

To minimize the electrocution hazard to birds, including whooping cranes, the Service, with support from the Rural Utilities Service, recommends that new or updated overhead power lines be constructed in accordance with the current guidelines for preventing bird electrocutions. The recommended guidelines can be found in "2006 Suggested Practices for Avian Protection on Power Lines". To increase power line visibility and reduce bird fatalities resulting from collisions with power lines, the Service recommends power lines in the major whooping crane migration zone as well as power lines that cross or run adjacent to rivers or large wetlands be modified according to "Mitigating Bird Collisions with Power Lines: The State of the Art in 1994". Both publications can be obtained by

writing or calling the Edison Electric Institute, P.O. Box 266, Waldorf, Maryland 20604-0266, (1-800-334-5453) or visiting their website at www.eei.org.

Potential habitat for the Dakota skipper is located near the proposed project area. In 1995, the Dakota skipper was listed as a candidate species under the Endangered Species Act (ESA). No legal requirement exists to protect candidate species; however, it is within the spirit of the Endangered Species Act to consider these species as having significant value and worth protecting.

The Dakota skipper, a small to medium-sized hesperiine butterfly, has been recorded on native prairie in Barnes and Griggs Counties. I have enclosed a description of the site and maps where skippers have historically been found, (Valley City Site – Barnes Co., T. 140 N., R. 58 W., Section 17, and Binford Site – Griggs Co., T. 147 N., R. 60 W., NW ¼ Section 16). Dakota skippers are associated with high quality prairie ranging from wet-mesic tallgrass prairie to dry-mesic mixed grass prairie. Eastern North Dakota prairies inhabited by Dakota skippers are dominated by warm-season or bluestem grasses that almost always contain wood lilies, harebells, and camas (Royer and Marrone 1992) and that are generally associated with glacial lake margins with alkaline soils (McCabe 1981). If at all possible, we recommend the proposed project avoid native prairie habitat. If the proposed project will impact this type of habitat along the construction right-of-way, we recommend a qualified biologist conduct surveys of these areas for the presence of Dakota skippers. If Dakota skippers are present along the proposed route, please notify the Service and advise us on how you intend to avoid impacts to skipper habitat.

Thank you for the opportunity to comment on this project. If you require further information or the project plans change, please contact Carol Aron of my staff at (701) 250-4481, or at the letterhead address above.

Sincerely,

Jeffrey K. Towner

Jeffrey K. Towner
Field Supervisor
North Dakota Field Office

Enclosures

References

McCabe, T.L. 1981. The Dakota skipper, *Hesperis dacotae* (Skinner): range and biology, with special reference to North Dakota. Journal of the Lepidopterist' Society 35(3): 179-193.

Royer, R.A. and G.M. Marrone. 1992. Conservation status of the Dakota skipper (*Hesperis dacotae*) in North and South Dakota. Unpublished report, U.S. Fish and Wildlife Service, Denver, CO. 15 March 1992. 44+pp.

FEDERAL THREATENED, ENDANGERED, AND CANDIDATE SPECIES AND DESIGNATED CRITICAL HABITAT FOUND IN CASS COUNTY, NORTH DAKOTA

February 2008

No species present

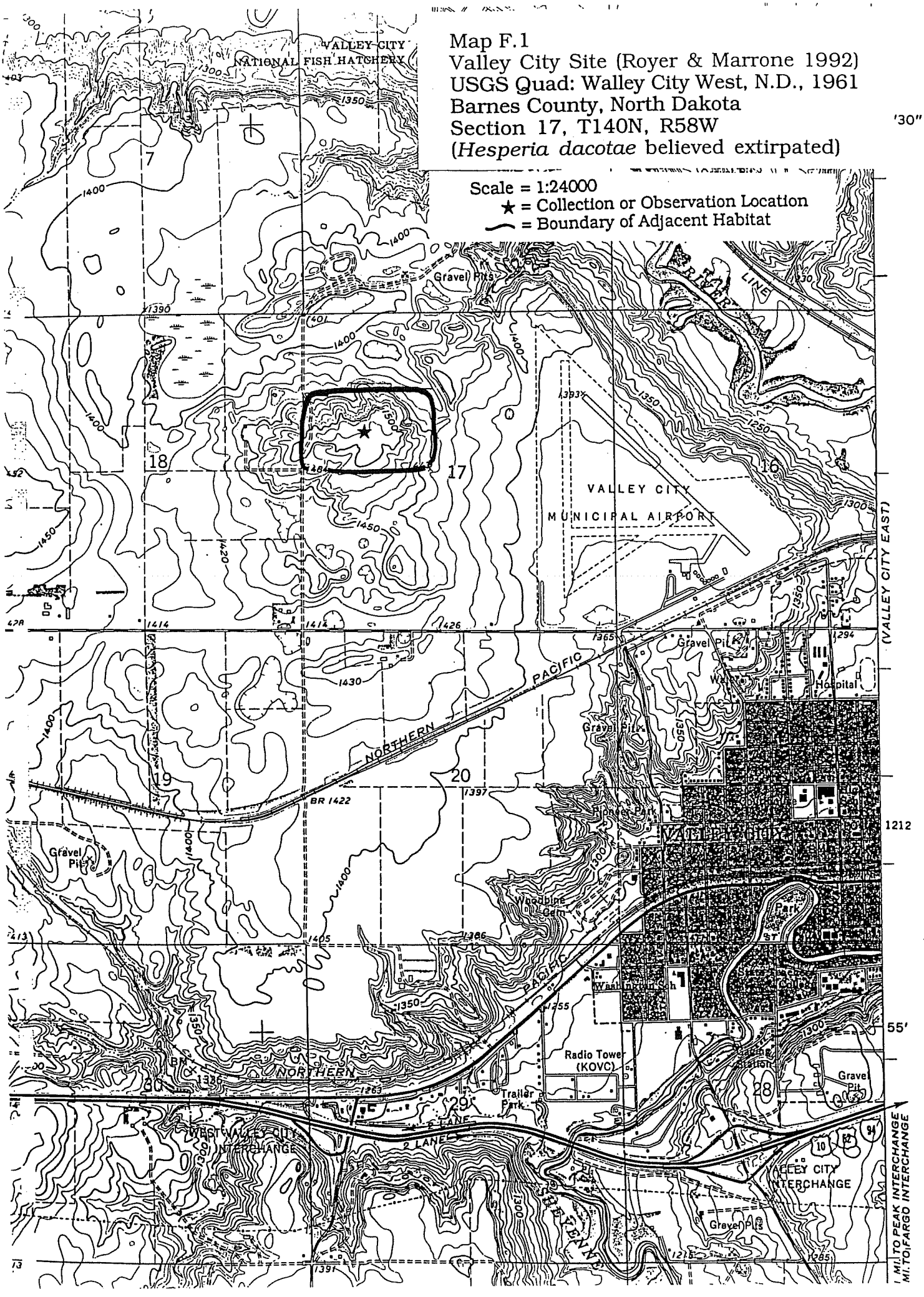
FEDERAL ENDANGERED SPECIES
FOUND IN BARNES COUNTY
NORTH DAKOTA
February 2008

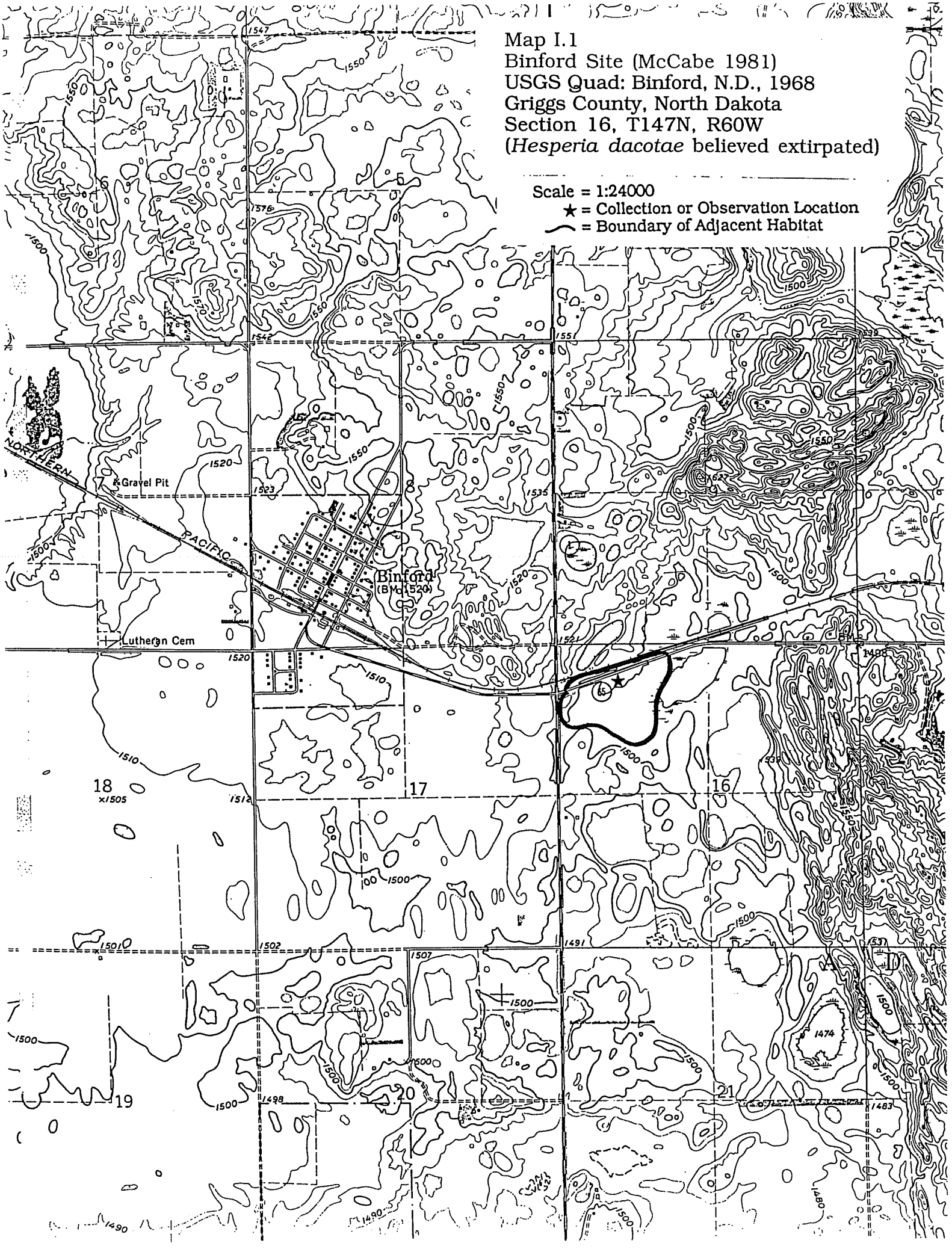
ENDANGERED SPECIES

Birds

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

Map F.1
Valley City Site (Royer & Marrone 1992)
USGS Quad: Walley City West, N.D., 1961
Barnes County, North Dakota
Section 17, T140N, R58W
(*Hesperia dacotae* believed extirpated)




Map I.1
Binford Site (McCabe 1981)
USGS Quad: Binford, N.D., 1968
Griggs County, North Dakota
Section 16, T147N, R60W
(*Hesperia dacotae* believed extirpated)
Scale = 1:24000
★ = Collection or Observation Location
= Boundary of Adjacent Habitat
NORTHERN PACIFIC
Gravel Pit
Binford
(BM 1520)
Lutheran Cem
BM
18
17
16
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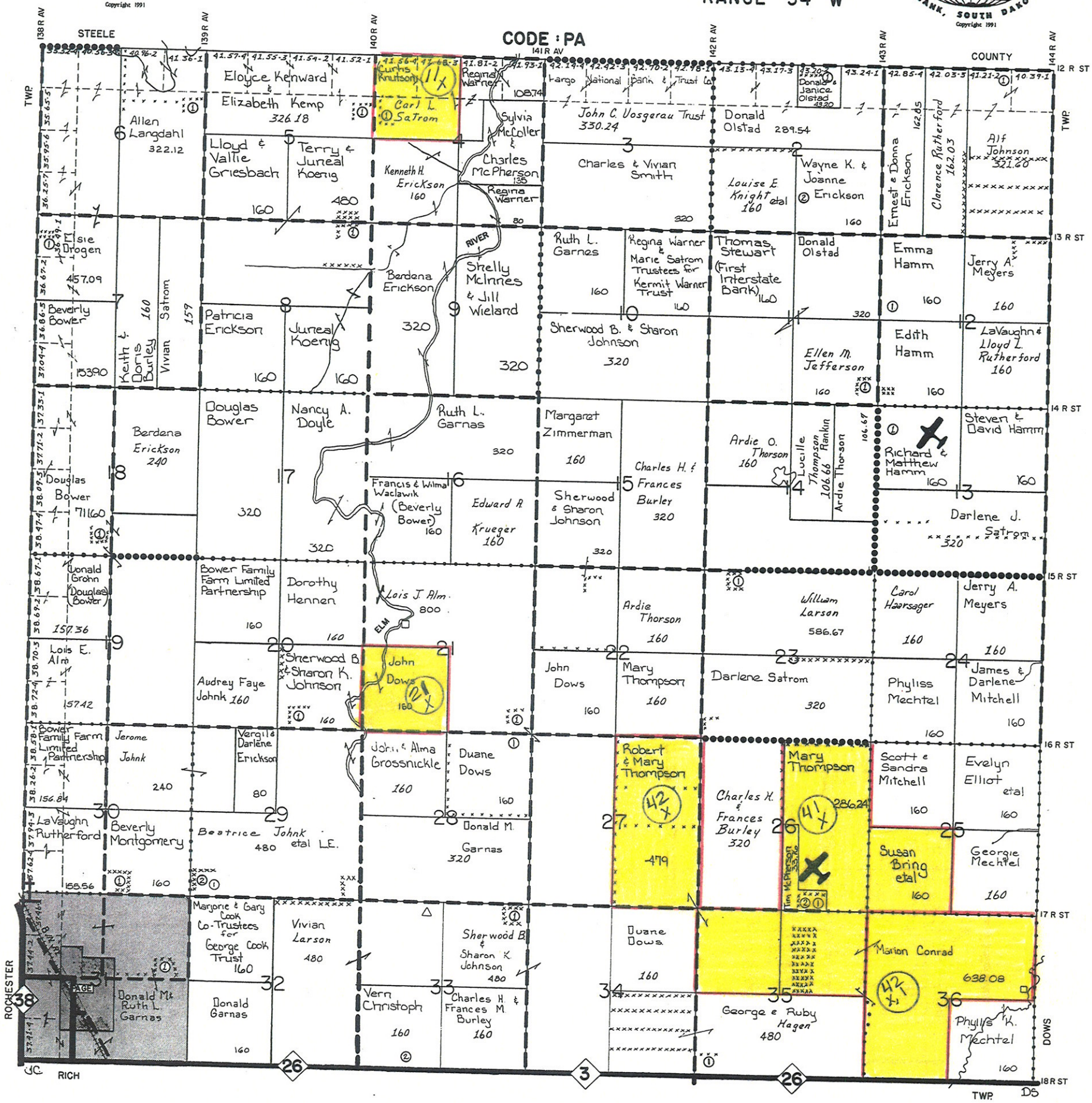
MAP OF PAGE

TOWNSHIP 143 N

RANGE 54 W

CODE : PA

COUNTY

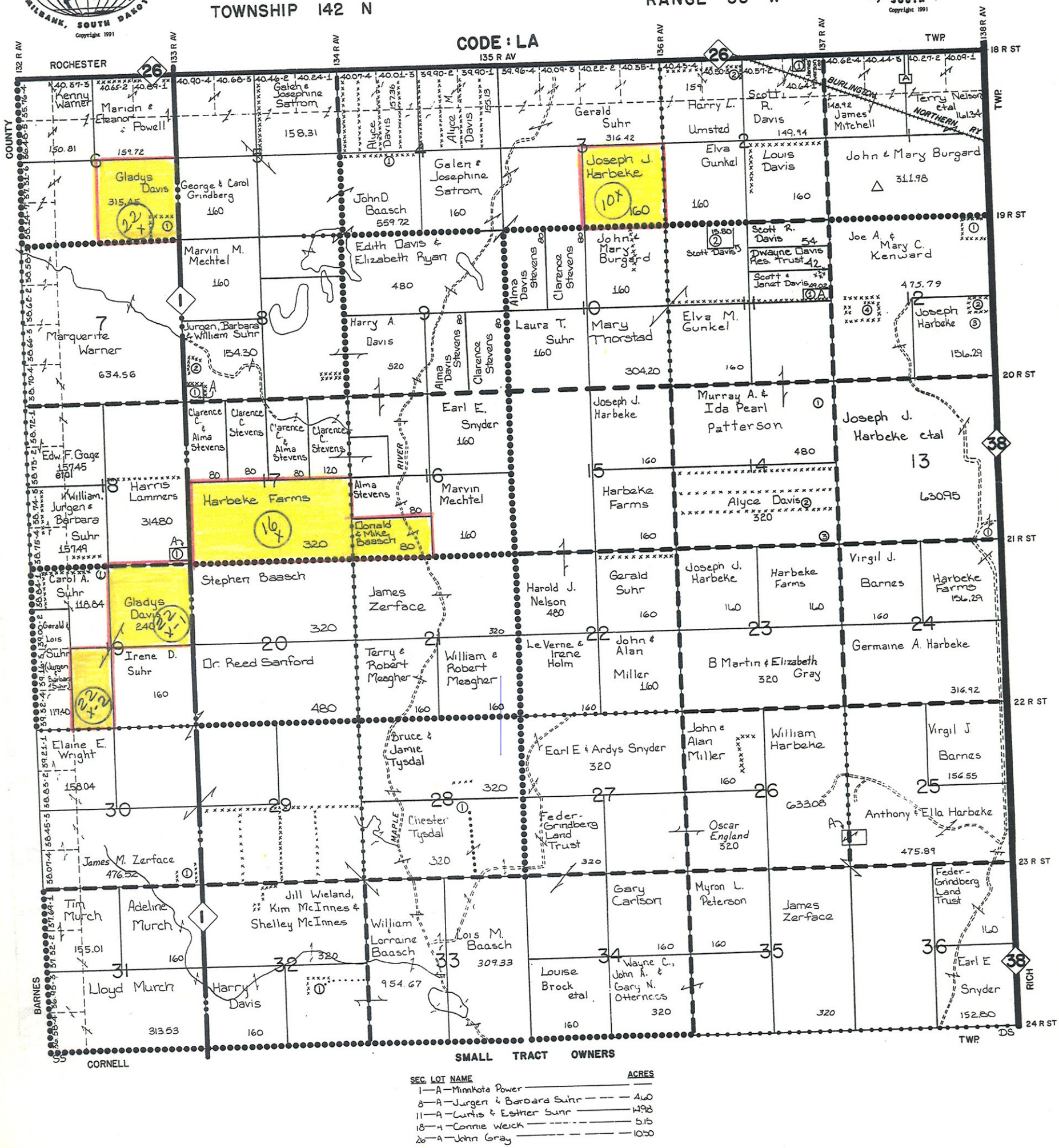


BRAATEN & QUALEY LAND COMPANY
2534 South University Drive
Fargo, North Dakota 58103
(701) 237-0059
Home: 232-7174
"Specializing in farmland sales and appraisals"

MAP OF LAKE

MIDLAND ATLAS CO. INC. MILBANK, SOUTH DAKOTA Copyright 1991

TOWNSHIP 142 N — RANGE 55 W — CODE : LA



SMALL TRACT OWNERS

SEC.	LOT	NAME	ACRES
1	A	Minnkota Power	
8	A	Jurgen & Barbara Suhr	4.60
11	A	Curtis & Esther Suhr	1.98
18	A	Connie Weick	5.15
26	A	John Gray	10.50

BRAATEN & QUALEY LAND COMPANY
2534 South University Drive
Fargo, North Dakota 58103
(701) 237-0059
Home: 232-7174
"Specializing in farmland sales and appraisals"

MIDLAND ATLAS CO. INC. MILBANK, SOUTH DAKOTA

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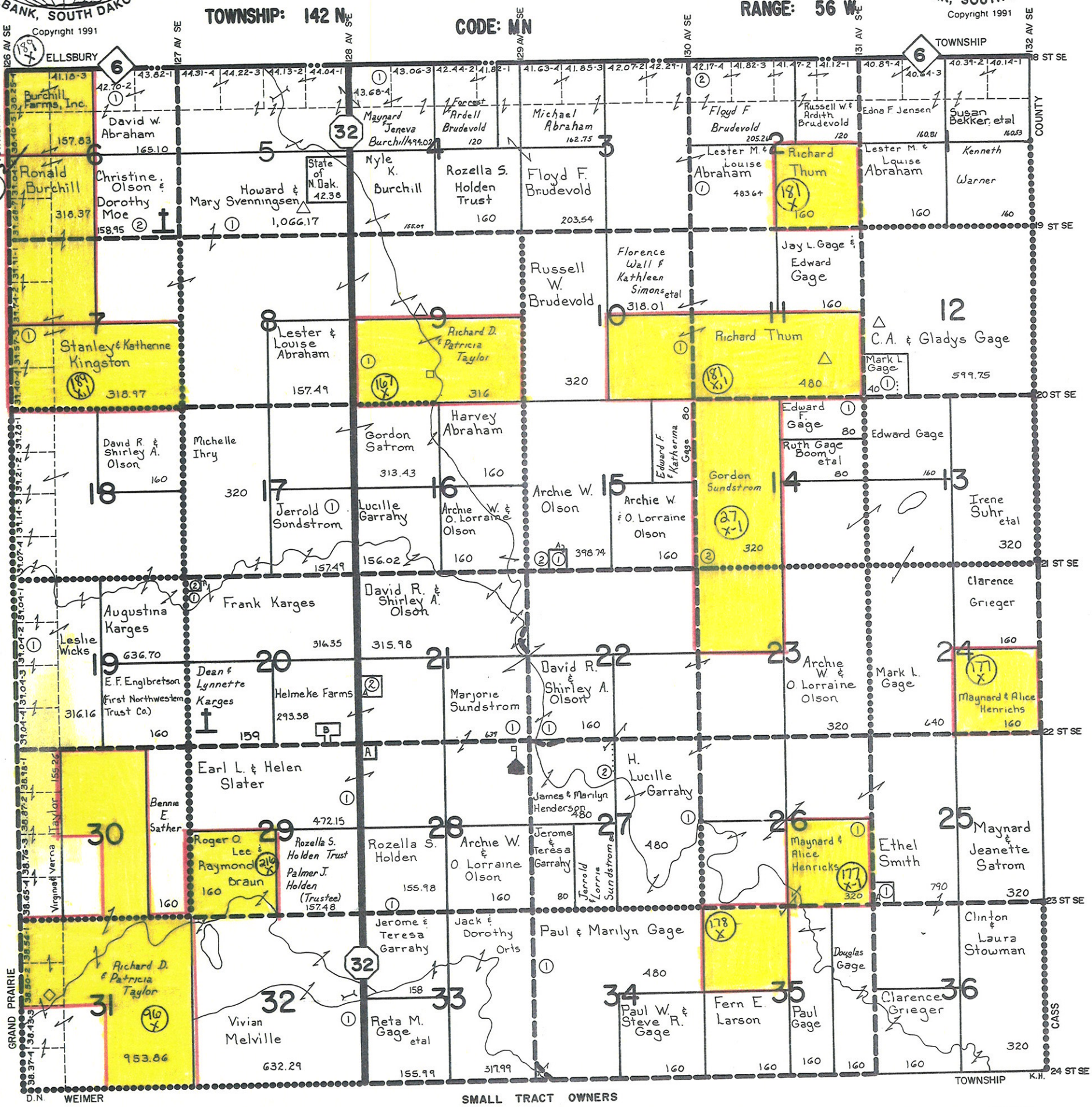
MAP OF MINNIE LAKE

TOWNSHIP: 142 N RANGE: 56 W CODE: MN



SMALL TRACT OWNERS

SEC.	LOT	NAME	ACRES
15	A	Glen & Jenine Lysne	1.26
20	A	Dean & Lynette Karges	1.13
20	B	USA	10.17
21	A	Debbie Spitzer	10.46
25	A	Bradley & Patty Olstad	10.00
28	A	Minnkota Power Coop Inc	1.61

PIERCE	LAKE TOWN	DAZEY	SIBLEY TRAIL	BALDWIN	ELLSBURY
UXBRIDGE	EDNA	ROGERS	ASHTABULA	GRAND PRAIRIE	
BRIMER	ANDERSON	STEWART	GETCHELL	NOLTIMIER	WEIMER

ECKELSON	POTTER	HOBART	VALLEY	ALTA	ORISKA
MANSFIELD	HEMEN	GREEN	MARSH	CUBA	SPRING-VALE
MEADOW LAKE	SVEA	SKANDIA	NELSON	NORMA	BINGHAM-TON
GREENLAND	ROSEBUD	SPRING CREEK	OAK HILL	THORDEN-SKJOLD	RARITAN

Real Estate • Farm Sales • Dynamic Homes • Appraising

LAWN REALTY INC.

Valley City, ND 58072

DAVID A. NELSON

Office: 845-0782 Home: 845-2074

"Specializing in Sales of Farms"

2425 W. Main, Box 387 • Located in Miller Office Building

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MILBANK, SOUTH DAKOTA

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MAP OF ELLSBURY

TOWNSHIP: 143 N

RANGE: 56 W

CODE: EL

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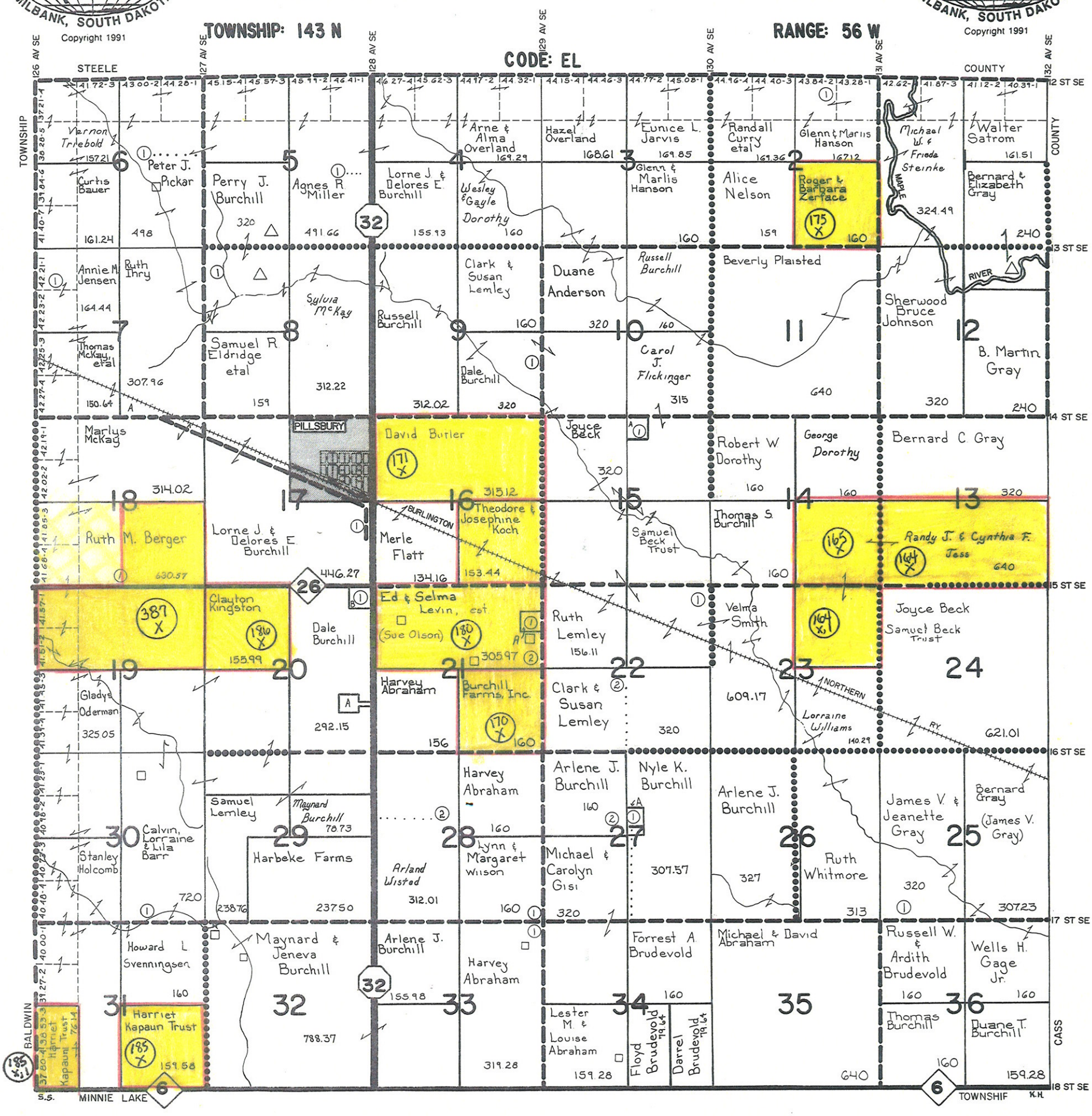

SEE SMALL TRACT OWNERS FOLLOWING TOWNSHIP MAPS

PIERCE	LAKE TOWN	DAZEY	SIBLEY TRAIL	BALDWIN	
UXBRIDGE	EDNA	ROGERS	ASHTABULA	GRAND PRAIRIE	MINNIE LAKE
BRIMER	ANDERSON	STEWART	GETCHELL	NOLTIMIER	WEIMER

ECKELSON	POTTER	HOBART	VALLEY	ALTA	ORISKA
MANSFIELD	HEMEN	GREEN	MARSH	CUBA	SPRING-VALE
MEADOW LAKE	SVEA	SKANDIA	NELSON	NORMA	BINGHAMPTON
GREENLAND	ROSEBUD	SPRING CREEK	OAK HILL	THORDEN-SKJOLD	RARITAN

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Valley City, ND 58072

DAVID A. NELSON

Office: 845-0782 Home: 845-2074

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MAP OF BALDWIN

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TOWNSHIP: 143 N. RANGE: 57 W.

CODE: BA

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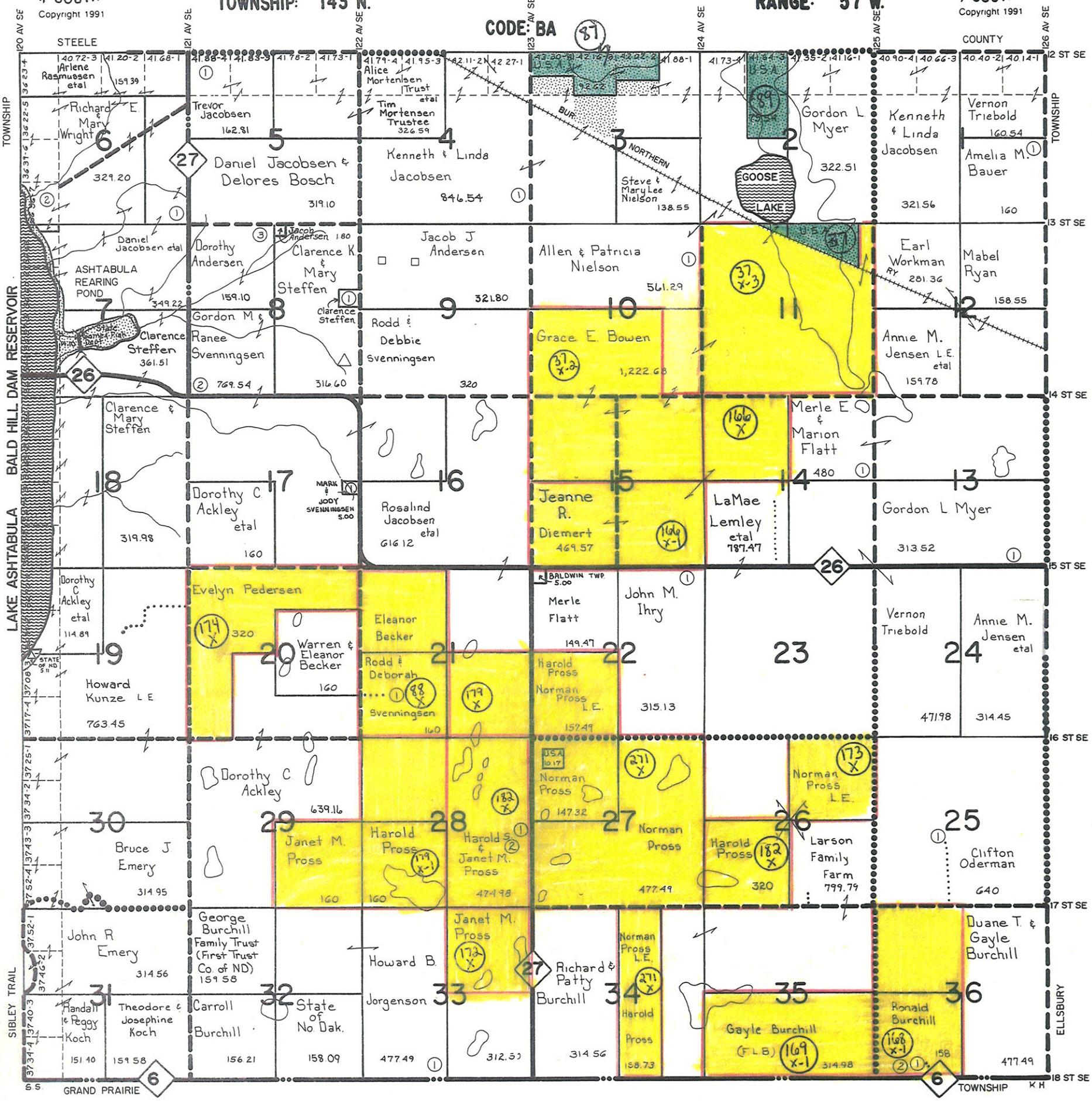

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LAWN REALTY INC.

Valley City, ND 58072

DAVID A. NELSON

Office: 845-0782 Home: 845-2074

"Specializing in Sales of Farms"

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PIERCE	LAKE TOWN	DAZEY	SIBLEY TRAIL	BALDWIN	ELLSBURY
UXBRIDGE	EDNA	ROGERS	ASHTABULA	GRAND PRAIRIE	MINNIE LAKE
BRIMER	ANDERSON	STEWART	GETCHELL	NOLTIMER	WEIMER

ECKELSON	POTTER	HOBART	VALLEY	ALTA	ORISKA
MANSFIELD	HEMEN	GREEN	MARSH	CUBA	SPRING-VALE
MEADOW LAKE	SVEA	SKANDIA	NELSON	NORMA	BINGHAM-TON
GREENLAND	ROSEBUD	SPRING CREEK	OAK HILL	THORDEN-SKJOLD	RARITAN

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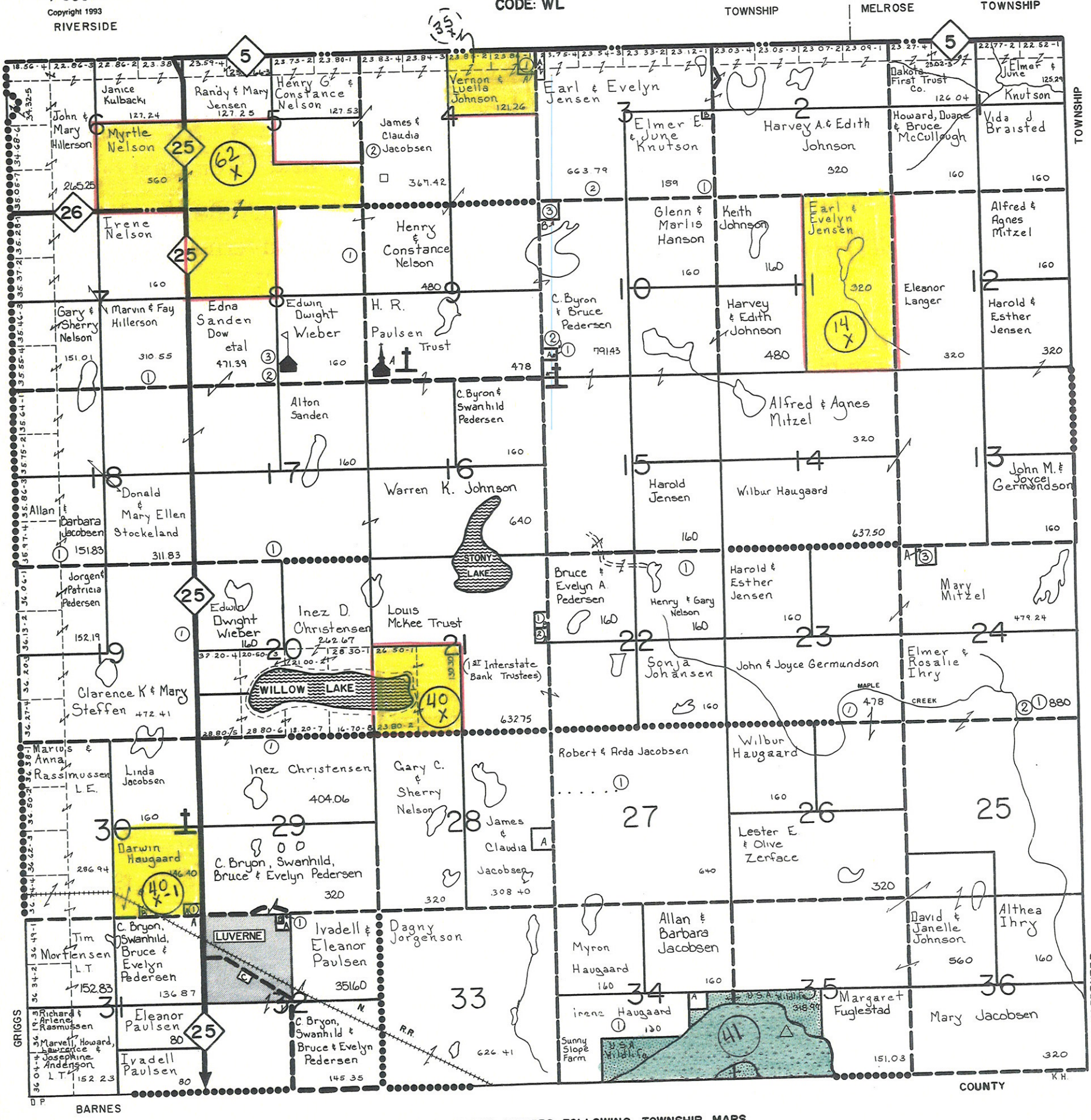
MAP OF WILLOW LAKE

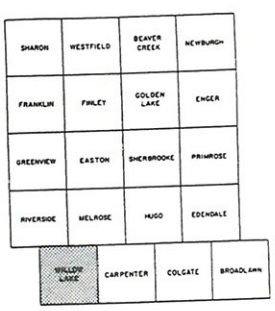
TOWNSHIP 144 N. RANGE 57 W.

CODE: WL



SEE SMALL TRACT OWNERS FOLLOWING TOWNSHIP MAPS

Botsford & Rice, Inc.
FARM REAL ESTATE
FARM MANAGEMENT
FARM APPRAISALS
REALTOR
Box 88 Grand Forks, ND 58206-0088
Telephone 701-775-0617



MIDLAND ATLAS CO. INC.
MILBANK, SOUTH DAKOTA

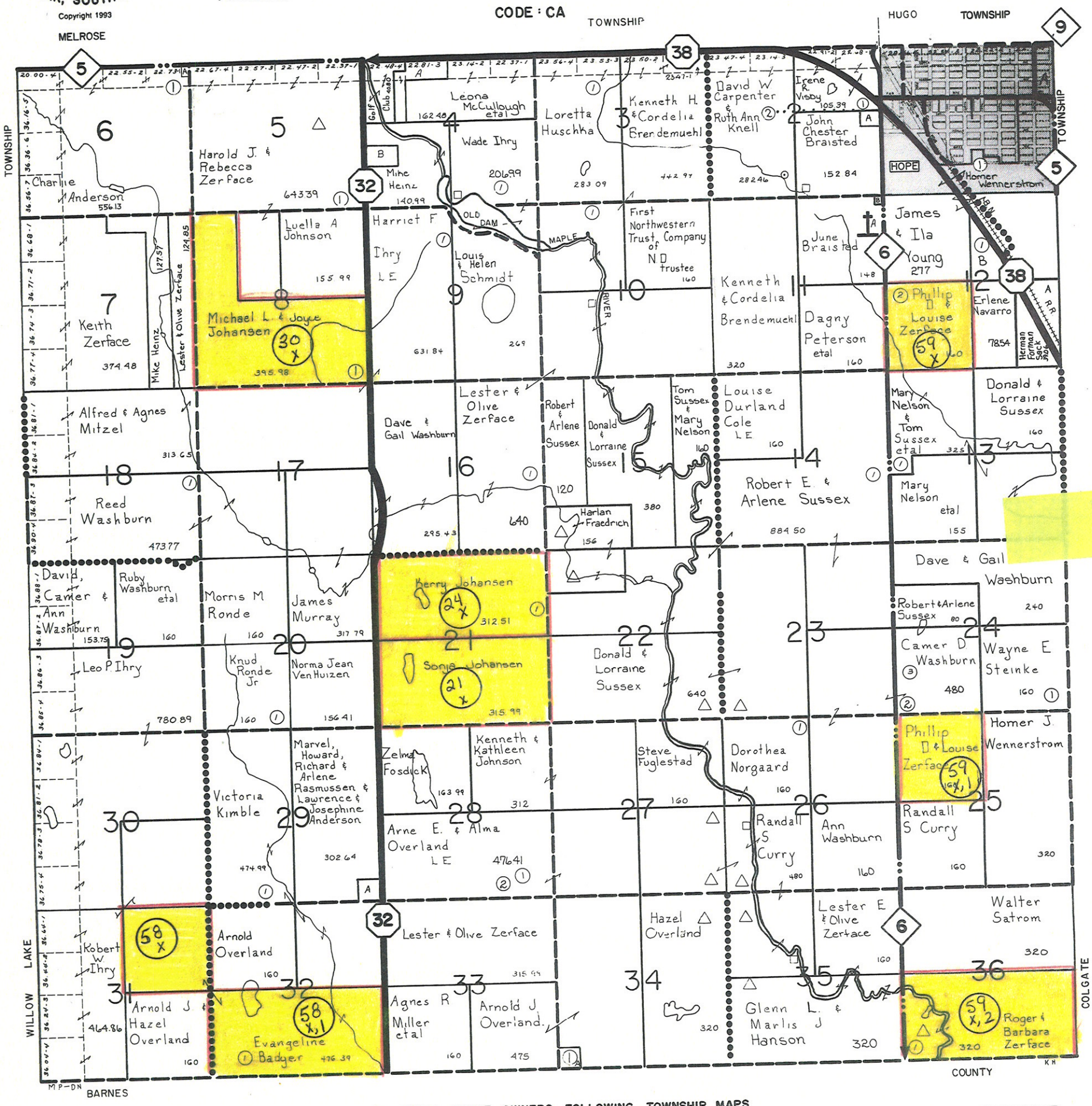
MAP OF CARPENTER

TOWNSHIP: 144 N.

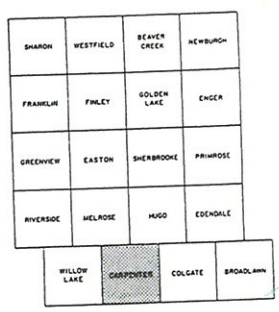
RANGE: 56 W.

Copyright 1993

CODE : CA



SEE SMALL TRACT OWNERS FOLLOWING TOWNSHIP MAPS



Botsford & Rice, Inc.
FARM REAL ESTATE
FARM MANAGEMENT
FARM APPRAISALS
REALTOR
Box 88 Grand Forks, ND 58206-0088
Telephone 701-775-0617

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

REPLY TO
ATTENTION OF

February 20, 2008

North Dakota Regulatory Office

[NWO-2008-00407-BIS]

RECEIVED
FEB 27 2008
HDR Engineering, Inc.

HDR Engineering, Inc.
Attn: Mitchell Shields, Project Manager
701 Xenia Avenue South
Minneapolis, MN 55416-3636

Dear Mr. Shields:

This is in response to your letter received **February 11, 2008**, requesting Department of the Army (DA), US Army Corps of Engineers (Corps) comments on proposed construction of a high-voltage transmission facility from near Luverne to the Maple River Substation, northwest of Fargo, in Barnes and Cass Counties, North Dakota.

Corps regulatory offices administer Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Section 10 of the Rivers and Harbors Act regulates work in or affecting navigable waters. Section 404 of the Clean Water Act regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material include, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in the waters of the United States.

If this project would require a Section 10 and/or Section 404 permit, please complete and submit the enclosed Corps of Engineers permit application to the U. S. Army Corps of Engineers, North Dakota Regulatory Office, 1513 South 12th Street, Bismarck, North Dakota 58504. If you are unsure if a permit is required, you may submit an application, or, a letter requesting a jurisdictional determination. Include a project location map, description of work, and construction methodology when submitting either.

If we can be of further assistance or should you have any questions regarding our program, please do not hesitate to contact this office by letter or phone at (701) 255-0015 and reference project number **NWO-2008-00407-BIS.**

Sincerely,

Daniel E. Cimarosti

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosure

Printed on Recycled Paper

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

RECEIVED
FEB 14 2008
HDR Engineering, Inc.

John Hoeven
Governor of North Dakota

North Dakota State Historical Board

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Grand Forks - President

Chester E. Nelson, Jr.
Bismarck - Vice President

Gereld Gerntholz
Valley City - Secretary

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Diane K. Larson
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Marvin L. Kaiser
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Sara Otte Coleman
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Tourism Division

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State Treasurer

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Secretary of State

Douglass Prchal
Director
Parks and Recreation Department

Francis Ziegler
Director
Department of Transportation

Merlan E. Paaverud, Jr.
Director

Accredited by the American Association of Museums

February 11, 2008

Mr. Mitchell Shields
Project Manager
HDR Engineering, Inc.
701 Xenia Avenue South Suite 600
Minneapolis, MN 55416-3636

NDSHPO: 08-0343 RUS/RDUP, PSC Otter Tail Power Company, 230kV Transmission Line, Luverne to Maple River Substation, North Dakota

Dear Mr. Shields:

We have received and reviewed correspondence for **08-0343: RUS/RDUP, PSC Otter Tail Power Company, "230kV Transmission Line, Luverne to Maple River Substation, North Dakota."** We recommend that a Class I CRI (file and records search) be completed for the project area. *Also, we recommend that investigation recommendations regarding areas warranting Class III CRI (pedestrian survey) for the area of potential effect, based on the results of the Class I and other pertinent information, be included in the report.*

If the project crosses lands administered by a federal agency or has federal permits or state monies or permits (e.g., PSC) needed, then we recommend and encourage that the agency(ies) be consulted regarding their recommendations on the project at the earliest feasible time.

We look forward to working with you as the project develops, and to reviewing the Class I CRI report along with recommendations for further work. Protocols for transmission lines, as they pertain to cultural resources, have been established and successfully implemented in North Dakota. Thank you for the opportunity to review the project. If you have questions please contact either Paul Picha at (701) 328-3574 or Susan Quinnell at (701) 328-3576.

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)
and
Director, State Historical Society of North Dakota
c: Susan E. Wefald, Commissioner, PSC

John Hoeven, Governor
Douglass A. Prchal, Director

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

RECEIVED
MAR 0 3 2008
HDR Engineering, Inc.

February 28, 2008

Mitchell Shields
HDR Engineering, Inc.
701 Xenia Avenue South
Minneapolis, MN 55416-3636

Re: Construction of a High-Voltage Transmission Facility From Near Luverne, ND to the Maple River Substation
Barnes and Cass Counties

Dear Mr. Shields:

The North Dakota Parks and Recreation Department (the Department) has reviewed the above referenced project proposal submitted by the Otter Tail Power Company to construct a high-voltage transmission facility from near Luverne, ND to the Maple River Substation located Barnes and Cass Counties.

Our agency scope of authority and expertise covers recreation and biological resources (in particular rare plants and ecological communities). The project as defined does not affect state park lands that we manage. We do have some concerns regarding Land and Water Conservation Fund sites within the project area. Several parks in Page and Reille's Acres have received assistance from the federal Land and Water Conservation Funds and are under protection of section 6(f) of the LWCF Act including project numbers: 38-00693, 38-00945, and 38-00726. Any property taken from within the 6f boundaries of these areas must be replaced with property of equal market value. Should any public or private utilities need to be added or relocated on the LWCF recreational lands, the NDPRD must be consulted prior to any action taken. Please contact Michelle Vetter (701-328-5364 or mvetter@nd.gov) if additional LWCF information is needed.

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, several occurrences have been identified within or adjacent to the project area including: *Fusconaia flava* (Wabash pigtoe mussel), *Ligumia recta* (black sandshell mussel), *Potamilus alatus* (pink heelsplitter mussel), *Quadrula quadrula* (mapleleaf mussel), *Ameiurus natalis* (yellow bullhead), *Eleocharis wolfii* (Wolf's spikerush), *Eumeces septentrionalis* (prairie skink), *Phoxinus eos* (Northern redbelly dace), and *Spartina pectinata – Calamagrostis stricta – Carex spp. herbaceous vegetation* (wet prairie). Please see attached spreadsheet and map for more specific information on these species. We defer further comments regarding animal species to the North Dakota Game and Fish Department and the United States Fish and Wildlife Service.

Because this information is not based on a comprehensive inventory, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database. The lack of data for any project area cannot be construed to mean that no significant features are present. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources.

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

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

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

Sincerely,

Jesse Hanson

Jesse Hanson, Coordinator
Planning and Natural Resources Division

R.USNDNHI*1931

ND Parks and Recreation Department

ND Natural Heritage Inventory
1600 East Century Ave., Suite 3
Bismarck, ND 58503-0649
(701) 328-5370 FAX: (701) 328-5363

INVOICE

INVOICE NO: 0072
DATE: 2/29/2008

To: Mitchell Shields
HDR Engineering, Inc.
701 Xenia Avenue South
Minneapolis, MN 55416-3636

CONTACT	REFERENCE NO.	DATE SHIPPED	SHIPPED VIA	F.O.B. POINT	TERMS
K.Duttenhefner	R.USNDNHI*1931	2/29/2008			

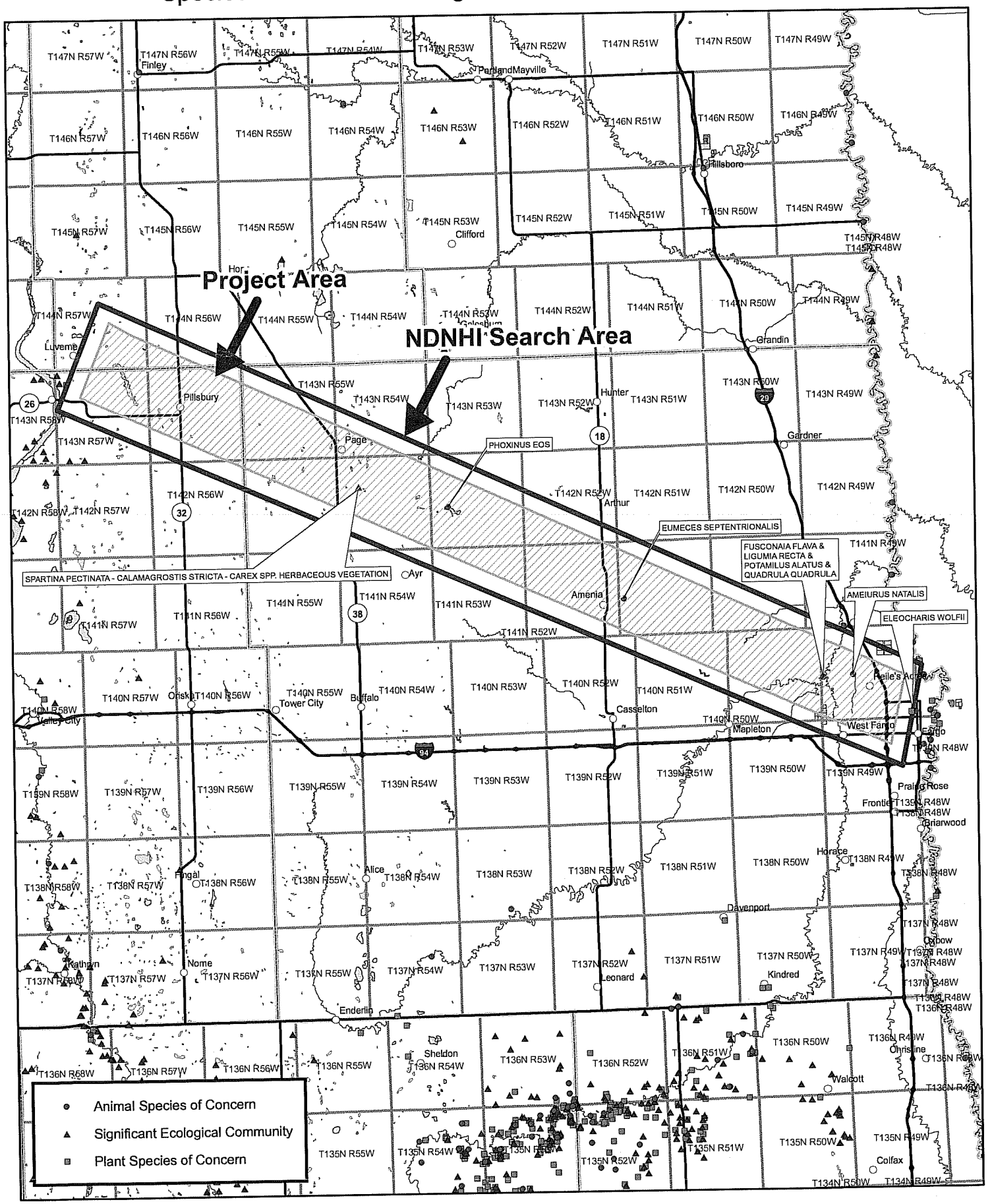
QUANTITY	DESCRIPTION	UNIT PRICE	AMOUNT
1	Computer data search, data retrieval , spreadsheet and map creation.	$ 60.00	$ 60.00
		SUBTOTAL	$ 60.00
		SALES TAX	
		SHIPPING & HANDLING	
		TOTAL DUE	$ 60.00

Make all checks payable to: ND Parks and Recreation Department
If you have any questions concerning this invoice, call: Kathy Duttenhefner, (701) 328-5370

THANK YOU FOR YOUR INTEREST IN RARE SPECIES CONSERVATION.

DEPT ID	FUND	ENTRY
1508	398	463021

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



North Dakota Parks & Recreation Department
North Dakota Natural Heritage Inventory
February 2008

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

State Scientific Name	State Common Name	Township & Range	Section	TRS Notes	State Rank	Global Rank	Federal Status	Last Observation
FUSCONAIA FLAVA	WABASH PIGTOE MUSSEL	140N049W	19	NW4NW4	S4	G5		1974
LIGUMIA RECTA	BLACK SANDSHELL MUSSEL	140N049W	19	NW4NW4	S4	G5		1974
POTAMILUS ALATUS	PINK HEELSPLITTER MUSSEL	140N049W	19	NW4NW4	S4	G5		1974
QUADRULA QUADRULA	MAPLELEAF MUSSEL	140N049W	19	NW4NW4	S3	G5		1974
AMEIURUS NATALIS	YELLOW BULLHEAD	140N049W	19		SX	G5		1959-10-05
ELEOCHARIS WOLFII	WOLF'S SPIKERUSH	140N049W	36		SH	G3?		1901-05-29
EUMECES SEPTENTRIONALIS	PRAIRIE SKINK	141N051W	19		S2S3	G5		
PHOXINUS EOS	NORTHERN REDBELLY DACE	142N053W	20		S4	G5		1972-06-20
SPARTINA PECTINATA - CALAMAGROSTIS STRICTA - CAREX SPP. HERBACEOUS VEGETATION	WET PRAIRIE	142N054W	8	SE4SW4	S2S3			1983-07-14

North Dakota Natural Heritage Inventory Biological and Conservation Data Disclaimer

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

ND Parks and Recreation Department – LWCF Data Correspondence

From: Zimmerman-Lutz, Laura R.
Sent: Wednesday, March 05, 2008 11:07 AM
To: mvetter@nd.gov
Subject: LWCF parcels

Attachments: lawcon.pdf

Hi Michelle - I have scanned the pages with LWCF parcels in Cass County. I have highlighted the parcels that I am pretty sure are in the 6 mile corridor and crossed off the parcels that are not in the corridor. The parcels with the x on the side are the parcels that I am not sure if they are in the corridor or not. Thanks for your help. Below you will find my contact information.

Laura

Laura R. Lutz-Zimmerman
HDR|ONE COMPANY - *Many Solutions*
303 East 17th Avenue|Suite 700|Denver, CO 80203
Phone: (303) 318-6344| Fax: (303) 860-7139
laura.lutz-zimmerman@hdrinc.com

STATE OF NORTH DAKOTA
OFFICE OF ATTORNEY GENERAL
STATE CAPITOL
600 E BOULEVARD AVE DEPT 125
BISMARCK, ND 58505-0040
(701) 328-2210 FAX (701) 328-2226
www.ag.state.nd.us

Wayne Stenehjem
ATTORNEY GENERAL

RECEIVED
FEB 14 2008
HDR Engineering, Inc.

February 11, 2008

Mitchell Shields
Project Manager
HDR Engineering
701 Xenia Avenue South
Minneapolis MN 55416

Dear Mr. Shields:

I am responding on behalf of the Attorney General to your letter regarding the proposed construction of a high-voltage transmission facility in North Dakota. You ask that this office review the proposed project and provide comments and/or information about applicable permits.

The Attorney General and members of his staff are prohibited by statute from giving legal advice, opinions, or assistance to private businesses. We may only serve as legal advisors to state officials, state's attorneys, and certain city officials.

Accordingly, we cannot review your information or provide the assistance you requested. For legal assistance and to ensure compliance with all ND laws and permit requirements you should consult an attorney in private practice licensed in this state. If you need assistance finding an attorney, you can contact the State Bar Association at (701) 255-1404.

You may wish to note our response for your file, to avoid making similar requests to this office in the future.

Sincerely,

Liz Brocker

Liz Brocker
Executive Assistant

North Dakota
DEPARTMENT OF COMMERCE

Community Services Economic Development & Finance Tourism Workforce Development

RECEIVED
FEB 14 2008
HDR Engineering, Inc.

February 12, 2008

Mitchell Shields
Project Manager
HDR Engineering, Inc.
701 Xenia Ave. South
Minneapolis, MN 55416-3636

RE: Proposed Construction of a High-voltage Transmission Facility from Laverne, North Dakota to the Maple River Substation, Northwest of Fargo, in Barnes and Cass Counties.

Dear Mr. Shields:

This office supports the development of the above referenced transmission line supporting area wind energy projects.

While no permits are required from our office, we would defer to the North Dakota Game & Fish Dept., the ND Parks & Recreation Dept., the State Historical Society of North Dakota, and the North Dakota Health Dept. for their input on any environmental concerns or issues within the boundaries of the proposed project. According to your letter it appears you have already initiated this process.

The North Dakota Public Service Commission is the authority which issues permits for locating power plant and transmission lines within the state.

With regards to land use, approvals are granted by the local land use/zoning authorities.

Sincerely,

James R. Boyd
Acting Energy Program Manager
ND Division of Community Services

sk

NORTH DAKOTA
DEPARTMENT of HEALTH

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

February 14, 2008

RECEIVED
FEB 19 2008
HDR Engineering, Inc.

Mr. Mitchell Shields
Project Manager
HDR Engineering, Inc.
701 Xenia Avenue South
Minneapolis, MN 55416-3636

Re: High-Voltage Transmission Facility
From Near Luverne to Maple River Substation
Barnes, Cass and Steele Counties

Dear Mr. Shields:

This department has reviewed the information concerning the above-referenced project submitted under date of February 8, 2008, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.

2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.

3. Projects disturbing one or more acres are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Further information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701-328-5210). Also, cities may impose additional requirements and/or specific best management practices for construction affecting their storm drainage system. Check with the local officials to be sure any local storm water management considerations are addressed.

4. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

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

Sincerely,

L. David Glatt, P.E., Chief
Environmental Health Section

LDG:cc
Attach.

NORTH DAKOTA
DEPARTMENT *of* HEALTH

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

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

North Dakota Department of Transportation

Francis G. Ziegler, P.E.
Director

John Hoeven
Governor

RECEIVED
FEB 2 8 2008
HDR Engineering, Inc.

February 26, 2008

Mitchell Shield, Project Manager
HDR Engineering, Inc.
701 Xenia Avenue South
Minneapolis, MN 55415-3636

CONSTRUCT A HIGH VOLTAGE TRANSMISSION FACILITY, BARNES AND CASS COUNTIES, NEAR LUVERNE TO MAPLE RIVER SUBSTATION, NORTH DAKOTA

We have reviewed your February 8, 2008 letter.

The project referenced above will have no adverse effect on the North Dakota Department of Transportation highways.

However, if any work needs to be done on highway right-of-way, appropriate permits and risk management documents will need to be obtained from the Department of Transportation District Engineer, John Thompson at 701-845-8800 and District Acting District Engineer, Kevin Gorder, at 701-239-8974.

RONALD J. HENKE, P.E., DIRECTOR – OFFICE OF PROJECT DEVELOPMENT

57: rjh:js

c: John Thompson, Valley City District Engineer
Kevin Gorder, Acting Fargo District Engineer

State of North Dakota

Office of the State Engineer

900 EAST BOULEVARD AVE. • BISMARCK, ND 58505-0850
701-328-2750 • FAX 701-328-3696 • http://swc.nd.gov

RECEIVED
MAR 0 3 2008
HDR Engineering, Inc.

February 27, 2008

Mitchell Shields
Project Manager
HDR Engineering, Inc.
701 Xenia Avenue South
Minneapolis, MN 55416-3636

Re: Proposed construction of a high-voltage transmission facility from Luverne, North Dakota to the Maple River Substation, northwest of Fargo, in Barnes and Cass Counties.

Dear Mitchell Shields:

My staff has reviewed a copy of your letter to the Governor of North Dakota and has followed up with a telephone conversation with you. Staff has found that the Public Service Commission has not yet received an application for this project but that a Letter of Intent has been assigned the PSC designation PU-08-48. According to your letter, the application should be coming soon from the Ottertail Power Company. You assured my staff that the project would not result in adding any materials in wetlands or bodies of water but will in fact, span all water bodies along the route. The proposed route largely will follow a railroad track and will cross the Rush River near the towns of Erie and Amenia as well as cross the Sheyenne River near the Maple River confluence.

If your project does not result in material being placed in water bodies or riverbeds along the route, you should not need a Sovereign Lands or any other permit from the Office of the State Engineer.

If you have any questions, please call 701 328-4949 to speak with my staff.

Sincerely,

Dale Frink, PE
State Engineer

DLF,dc/1373, 1625

cc: Governor's Office, Public Service Commission

North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: http://swc.nd.gov

March 10, 2008

RECEIVED
MAR 12 2008
HDR Engineering, Inc.

Mitchell Shields
HDR
701 Xenia Avenue S
Minneapolis, MN 55416

Dear Mr. Shields:

This is in response to your request for review of environmental impacts associated with the proposed construction of a high-voltage transmission facility near Luverne, ND, to the Maple River Substation, northwest of Fargo, Barnes and Cass Counties.

The proposed project has been reviewed by State Water Commission staff and the following comments are provided:

- The proposed transmission line is planned for construction in the identified floodplain of Mapleton, Reed Raymond, Harwood and Berlin Townships. It is believed the construction of transmission line towers will have no impact on the floodplain. The attached Raymond Township Flood Insurance Rate Map dated January 4, 2002 depicts the regulatory floodway (cross-hatched area) along a portion of the Maple River and the City of West Fargo Flood Insurance Rate Map dated February 2, 1995 identified the Sheyenne River and County Drain 21 regulatory floodways.

If construction is planned within the regulatory floodway, the community responsible for permitting shall notify the state engineer of the proposed use prior to construction in the regulatory floodway. The state engineer shall determine whether a functioning hydraulic model is needed to measure the effect the proposed use. Section 61-16.2-14 of the North Dakota Century Code reads as follows.

State engineer review of development in regulatory floodways – Exceptions. Before issuing a permit or authorization to allow a use in a regulatory floodway, the community responsible for permitting or authorizing such use shall notify the state engineer of the proposed use. The state engineer shall determine whether a functioning hydraulic model is needed to measure the effect of the proposed use. Upon the request of the state engineer, the community shall submit to the state engineer for review all technical documentation, including a functioning hydraulic model and other technical information needed for the state engineer's review to analyze the proposed use and to identify its proposed impact. The state engineer shall complete the state engineer's review within thirty days after receiving the technical documentation. Upon completion of the state engineer's review, the state engineer shall notify the community whether the proposed use is in compliance with state and federal law. A community may apply to the state

engineer for an exemption on a case-by-case basis from this section. The state engineer may grant the exemption if the state engineer determines that the community, by using its own technical review, can determine if the proposed use is in compliance with state and federal law.

The Otter Tail Power Company must apply for a floodplain development permit prior to construction in the regulatory floodway to:

Ross Warner, Chairman
Raymond Township
16365 33 Street SE
Mapleton, ND 58059
701-282-5484

Barry Johnson, Public Works Director
City of West Fargo
810 12th Avenue NW
West Fargo, ND 58078
701-433-5410

- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.

- No sole-source aquifers have been designated in ND.

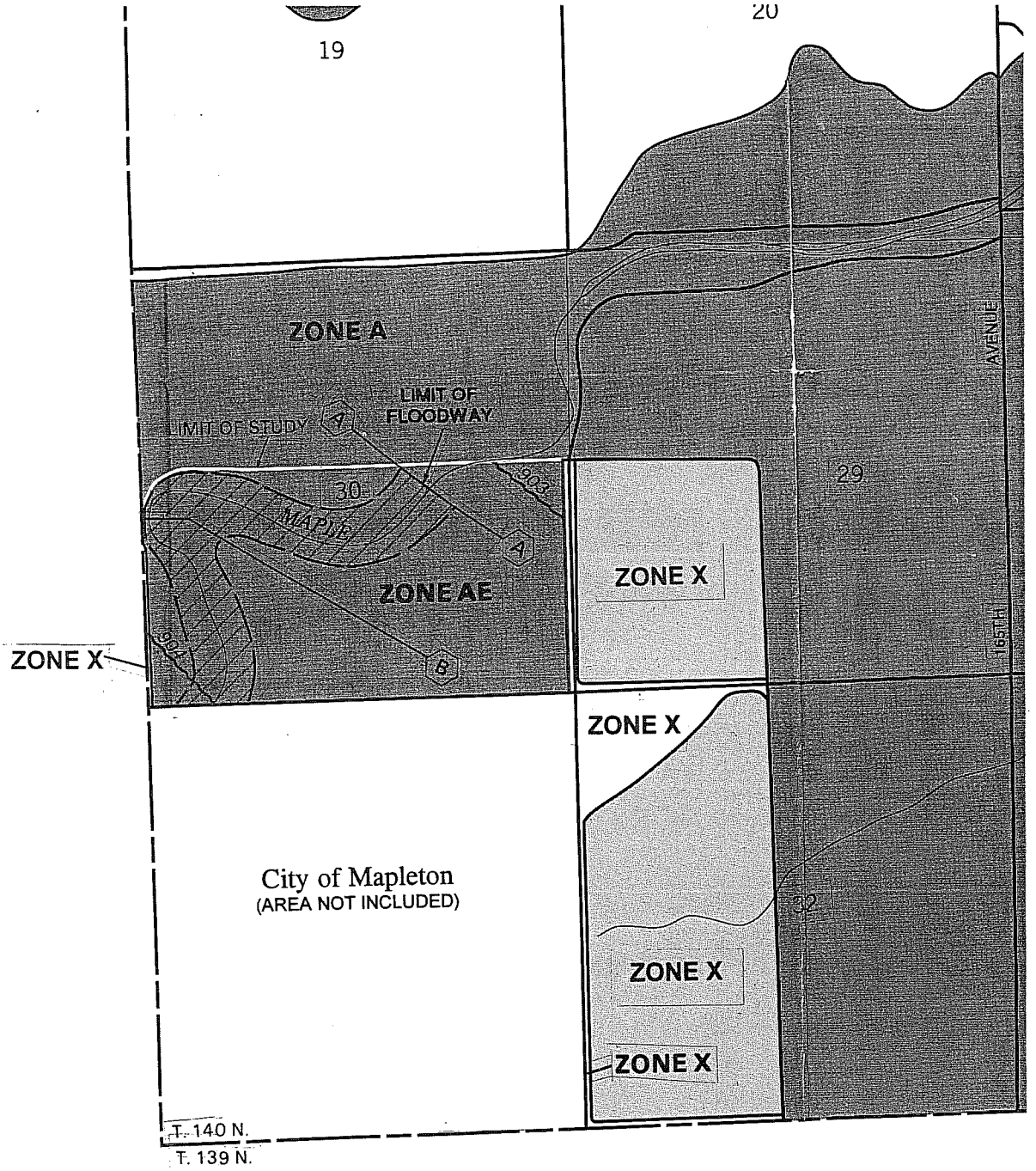
There are no other concerns associated with this project that affect State Water Commission or State Engineer regulatory responsibilities.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 328-4969.

Sincerely,

Larry Knudtson
Research Analyst

LJK:ds/1570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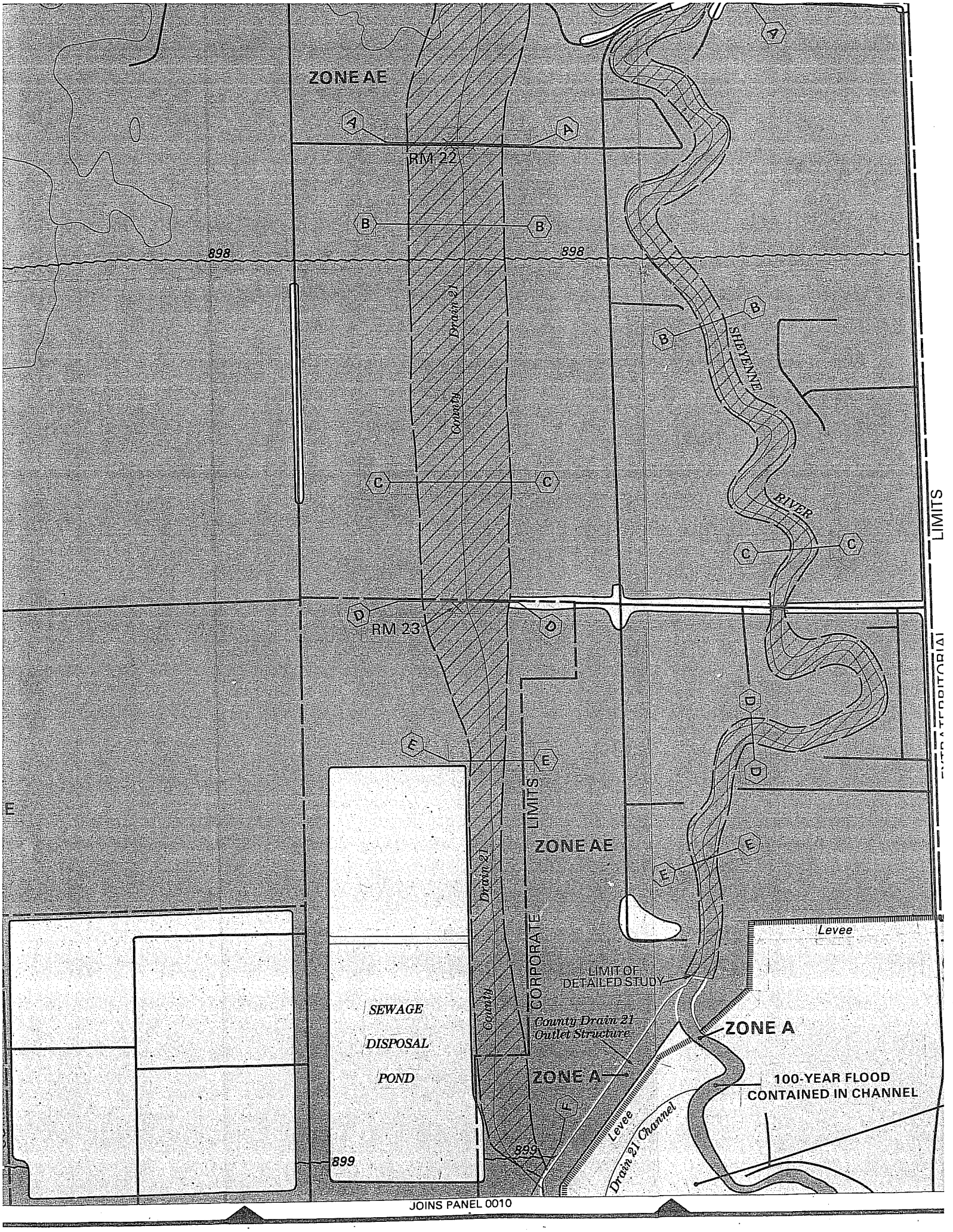
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RIVER
CORPORATE LIMITS
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LIMIT OF DETAILED STUDY
Levee
ZONE A
County Drain 21 Outlet Structure
ZONE A
100-YEAR FLOOD CONTAINED IN CHANNEL
Levee
Drain 21 Channel
SEWAGE DISPOSAL POND
JOINS PANEL 0010
LIMITS

ND State Water Commission - Data Request for Irrigation Permits Correspondence

From: Zimmerman-Lutz, Laura R.
Sent: Wednesday, February 27, 2008 3:09 PM
To: Rex Honeyman
Subject: RE: 6 Mile Route Buffer

Rex - Thank you for your assistance. I am having the data plotted now. I will get back to you if I have any additional questions. Thanks.

Laura

From: Rex Honeyman [mailto:rhoneyman@nd.gov]
Sent: Wednesday, February 27, 2008 3:03 PM
To: Zimmerman-Lutz, Laura R.
Subject: Re: 6 Mile Route Buffer

Laura,
I have attached a polygon shape file defining where the Eastern Dakota Irrigation District permits are located. The corridor you spoke about crosses the through the southern portion of the Irrigation District. Please note, the permits with the "Status" of "Perfected" and "Conditionally Approved" are the active irrigation permits. The active permits are also identified by circles or semi circles in the polygon shape file. If you have any questions let me know.

Rex

On 2/27/08 2:29 PM, "Zimmerman-Lutz, Laura R." <Laura.Lutz-Zimmerman@hdrinc.com> wrote:

Hi Rex - Thank you for your assistance. As we discussed on the phone, attached you will find the shape file for 6 mile (ignore that the file name says 3mi, its 6mi) study corridor the for proposed transmission line in Cass, Barnes, and Steele Counties. For your convenience, I have also included a table with all of the township, range, and sections for the corridor. Call me if you have any questions.

Regards,
Laura

Laura R. Lutz-Zimmerman
HDR|ONE COMPANY - *Many Solutions*
303 East 17th Avenue|Suite 700|Denver, CO 80203
Phone: (303) 318-6344| Fax: (303) 860-7139
laura.lutz-zimmerman@hdrinc.com <mailto:laura.lutz-zimmerman@hdrinc.com>

mholzer

From: mholzer [mholzer@nd.gov]
Sent: Friday, February 22, 2008 3:37 PM
To: 'akoeckeritz@otpco.com'
Cc: 'Gary Ness'
Subject: Gen-Tie Project Study Area-Barnes and Cass Counties

RECEIVED
FEB 27 2008
HDR Engineering, Inc.

Al
We received from the ND Governor's office a copy of the proposed transmission line corridor. In review of corridor, we identify three public airports at Arthur, Page and West Fargo. Your staff may go to the Aeronautics Commission Web site at www.nd.gov/ndaero and collect airport coordinates, photos and runway alignment under a state map layout search on AIRPORTS page.
ND Century Code defines that an obstruction to public airport not permissible. These airports have a runway approach slope of 20:1 ratio for example a 100' tall object times 20 should be beyond 2000' from a runway end. In order to study the impacts, FAA has a form called Notice of Proposed Construction Form 7460 found under there web site www.faa.gov. Your staff should also search for all airports including private airports. Many of the private airfields are a business base for aerial spray companies. Local townships and counties may have zoning authority in which the FAA study will address the impact of the safe and efficient use of airspace and airport.
Thus it appears that locating a powerline within the corridor will need to consider flight approaches to these three airports and once a location selected that FAA 7460 study the impacts. This study is free service by FAA and takes 45-60 days to complete. If you have any further questions on addressing the airports for this project, please feel free to contact our office.
Mark J Holzer, Aviation Planner
ND Aeronautics Commission
701-328-9653

JOB SERVICE North Dakota
www.jobsnd.com

John Hoeven, Governor • Maren L. Daley, Executive Director

PO Box 5507 • Bismarck, ND 58506-5507

February 11, 2008

RECEIVED
FEB 13 2008
HDR Engineering, Inc.

Mr. Mitchell Shields
Project Manager
HDR Engineering, Inc.
701 Xenia Avenue South
Minneapolis, Minnesota 55416-3636

RE: Proposed Construction of High-voltage Transmission Facility from Near Luverne, ND to the Maple Rive Substation, Northwest of Fargo, in Barnes and Cass Counties

Dear Mr. Shields:

Job Service North Dakota administers the employment service and unemployment insurance programs.

We have no comments regarding the proposed project and have no applicable permits that are required from Job Service North Dakota.

Sincerely,

Maren Daley
Executive Director

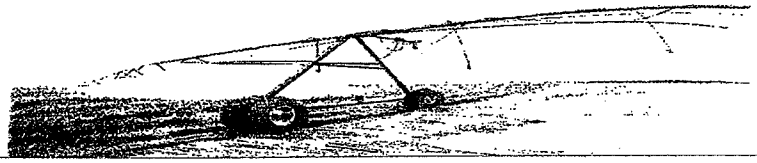
701.328.2825 (Voice) • 800.366.6888 (TTY Users - Relay ND) • 701.328.4000 (FAX)

Job Service North Dakota is an equal opportunity employer/program provider.
Auxiliary aids and services are available upon request to individuals with disabilities.

EASTERN DAKOTA IRRIGATION DISTRICT

EDID

14221 19th St SE
Page, ND 58064-9783



Feb. 20, 2008

Mr. Mitchell Shields
Project Manager
HDR Engineering, Inc.
701 Xeria Avenue South
Minneapolis, Minn. 55416-3636

Dear Mr. Shields,

It has come to our attention that you have failed to notify the Eastern Dakota Irrigation District of the proposed construction of a high-voltage 230-kV transmission line.

Rex Honeyman, Water Appropriations Hydrologist, North Dakota State Water Commission has the up-to-date information on quarters irrigated and lands intended for irrigation.

The Eastern Dakota Irrigation District and its member irrigators reserve the right to approve any route proposed through this district. Wind energy would not power the pumps because it is interruptive power.

We will cooperate in your endeavor to build a transmission line; however, our economy is very dependent on approximately 100 irrigation systems used to produce the crops in this area. The district is basically one maze of irrigation systems, pipelines, power lines, and transformers.

Thank you.

Sincerely,
Robert Thompson

Robert Thompson, President
Eastern Dakota Irrigation District
14221 19th St. SE
Page, North Dakota 58064
701-668-2760
tsi@ictc.com

CASS COUNTY
GOVERNMENT

Highway Department

Keith D. Berndt, P.E.
County Engineer

Richard S. Sieg
Superintendent

Thomas B. Soucy, P.E.
Design and Construction Supervisor

February 14, 2008

RECEIVED
FEB 25 2008
HDR Engineering, Inc.

Mitchell Shields
Project Manager
HDR Engineering, Inc.
701 Xenia Avenue South
Minneapolis, MN 55416-3638

SUBJECT: Comments as requested on the proposed construction of a high-voltage transmission facility from near Luverne, ND, to the Maple River Substation, northwest of Fargo, in Barnes and Cass County

Dear Mr. Shields,

We received a letter dated February 8, 2008 requesting comments in regards to the project described above. Cass County zoning regulations are administered at the most local level of government by the respective townships and incorporated cities concerned. Due to the large number of potentially affected townships and municipalities as you have listed in your letter I will direct you to the following web address to find contact information for all of the townships and incorporated cities of Cass County: http://www.casscountynd.gov/County_services/county_services.htm. I would suggest contacting the zoning administrator of each respective jurisdiction.

If you have any questions or require additional assistance please contact the Cass County Highway Department at 701-298-2370.

Sincerely,

Keith Berndt
County Engineer

kb/ts

cc: Cass County Commission

1201 Main Avenue West
West Fargo, North Dakota
58078-1301

701-298-2370
Fax 701-298-2395

Cass County Parks Correspondence

From: Solberg, Timothy [SolbergT@casscountynd.gov]
Sent: Wednesday, March 05, 2008 10:33 AM
To: Zimmerman-Lutz, Laura R.
Subject: RE: Parks information

<parksfromcasscounty.pdf>

Thank you for the opportunity to comment Laura.

The corridor goes through our one County Park located at Brewer Lake in Erie Township, I would suggest contacting Mike Montplasir who is the County Auditor if the line is to pass through this property, his phone number is 701-241-5627. There are no State parks that we know of in this corridor, and the 550 foot buffer from houses probably takes you away from any smaller city parks that would be located along this area, such as in Amenia and in Page. If the revised corridor comes near these cities I would recommend contacting them, you can find their contact info on our website at http://www.casscountynd.gov/cities/cities.htm.

I've attached a map with the location of Brewer Lake campground along your corridor. I also added a shapefile to this map that I found of Fargo Parks, but would again recommend you contact the Fargo Planning Department, probably Mark Williams whom I've also copied on this email, for more information on Fargo .

Let me know if you need further assistance.

Tim Solberg, County Planner
Cass County Highway Department
1201 Main Avenue West
West Fargo, ND 58078-1301

701.298.2375 (p)
701.298.2395 (f)
solbergt@casscountynd.gov

From: Zimmerman-Lutz, Laura R. [mailto:Laura.Lutz-Zimmerman@hdrinc.com]
Sent: Wednesday, March 05, 2008 9:47 AM
To: Solberg, Timothy
Subject: Parks information

Tim - Thank you for assistance related to park information in Cass County. As we discussed, I am attaching the 6 mile corridor shape file for the project for your use in reviewing the presence of parks in the area. Have a good day.

Laura

Laura R. Lutz-Zimmerman
HDR|ONE COMPANY - *Many Solutions*
303 East 17th Avenue|Suite 700|Denver, CO 80203

Phone: (303) 318-6344| Fax: (303) 860-7139
laura.lutz-zimmerman@hdrinc.com

Cass County Park Correspondence #2

From: Zimmerman-Lutz, Laura R.
Sent: Wednesday, March 05, 2008 11:39 AM
To: Solberg, Timothy
Cc: Shields, Mitchell
Subject: RE: Parks information

Tim - Thanks for checking into the park name for me. As far as airports, they are being considered. We have also been considering the private airfields. Again, thanks.

Laura

Laura R. Lutz-Zimmerman
HDR|ONE COMPANY - *Many Solutions*
303 East 17th Avenue|Suite 700|Denver, CO 80203
Phone: (303) 318-6344| Fax: (303) 860-7139
laura.lutz-zimmerman@hdrinc.com

From: Solberg, Timothy [mailto:SolbergT@casscountynd.gov]
Sent: Wednesday, March 05, 2008 11:30 AM
To: Zimmerman-Lutz, Laura R.
Subject: RE: Parks information

Hi Laura,

That is Madison Park.

I thought I should also ask if the airports have been contacted, I imagine Hector International has been contacted, but I am not sure if HDR is aware of the smaller West Fargo Airport, as well as the numerous private airfields in Cass County.

-Tim

From: Zimmerman-Lutz, Laura R. [mailto:Laura.Lutz-Zimmerman@hdrinc.com]
Sent: Wednesday, March 05, 2008 12:18 PM
To: Solberg, Timothy
Subject: RE: Parks information

Tim - Thank you for the prompt response. I noticed that there is one park parcel from the Fargo data layer that is inside the corridor just east of I-29. Would it be possible for you to identify the parcel from GIS and tell me the name? In the mean time, I checking to see if Al Koeckeritz has contacted Mark. Thanks.

Laura

From: Solberg, Timothy [mailto:SolbergT@casscountynd.gov]
Sent: Wednesday, March 05, 2008 10:33 AM

To: Zimmerman-Lutz, Laura R.
Subject: RE: Parks information

Thank you for the opportunity to comment Laura.

The corridor goes through our one County Park located at Brewer Lake in Erie Township, I would suggest contacting Mike Montplasir who is the County Auditor if the line is to pass through this property, his phone number is 701-241-5627. There are no State parks that we know of in this corridor, and the 550 foot buffer from houses probably takes you away from any smaller city parks that would be located along this area, such as in Amenia and in Page. If the revised corridor comes near these cities I would recommend contacting them, you can find their contact info on our website at http://www.casscountynd.gov/cities/cities.htm.

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Let me know if you need further assistance.

Tim Solberg, County Planner
Cass County Highway Department
1201 Main Avenue West
West Fargo, ND 58078-1301

701.298.2375 (p)
701.298.2395 (f)
solbergt@casscountynd.gov

From: Zimmerman-Lutz, Laura R. [mailto:Laura.Lutz-Zimmerman@hdrinc.com]
Sent: Wednesday, March 05, 2008 9:47 AM
To: Solberg, Timothy
Subject: Parks information

Tim - Thank you for assistance related to park information in Cass County. As we discussed, I am attaching the 6 mile corridor shape file for the project for your use in reviewing the presence of parks in the area. Have a good day.

Laura

Laura R. Lutz-Zimmerman
HDR|ONE COMPANY - *Many Solutions*
303 East 17th Avenue|Suite 700|Denver, CO 80203
Phone: (303) 318-6344| Fax: (303) 860-7139
laura.lutz-zimmerman@hdrinc.com

ND FSA – CRP Correspondence

From: Zimmerman-Lutz, Laura R.
Sent: Tuesday, March 04, 2008 2:08 PM
To: russell.bubach@nd.usda.gov; dan.janes@nd.usda.gov
Cc: jim.jost@nd.usda.gov; Shields, Mitchell
Subject: Request for CRP contract locations in Cass and Barnes County

Mr. Bubach and Mr. Janes -

On behalf of Otter Tail Power Company (OTP) and planned joint partner Minnkota Power Cooperative, HDR Engineering, Inc. (HDR) is requesting information regarding CRP contract locations in Cass and Barnes County. OTP is proposing to construct a generation outlet, which would transmit power from proposed area wind projects to the regional transmission grid. HDR is preparing an application for a Certificate of Corridor Compatibility and Route Permit to the North Dakota Public Services Commission (PSC).

Information regarding the CRP contract locations is requested to assist OTP in identifying those lands that have CRP contracts in place. Attached you will find a 6-mile study corridor in arc view shape file format. Per our discussions with Jim Jost in your office, FSA can provide contract locations back to us in a shape file format within the 6-mile study corridor. The study corridor is centered on the BNSF railroad corridor. Legal descriptions (townships, ranges, and sections) are identified on the attached table. The proposed generation outlet includes approximately 60 miles of high-voltage 230-kV transmission line that would extend from a new substation near Pillsbury, ND (southeast of Luverne, ND) to the existing Maple River Substation, northwest of Fargo, ND.

If you have any questions, please contact me at the contact information below. Thank you.

Laura

Laura R. Lutz-Zimmerman
HDR|ONE COMPANY - *Many Solutions*
303 East 17th Avenue|Suite 700|Denver, CO 80203
Phone: (303) 318-6344| Fax: (303) 860-7139
laura.lutz-zimmerman@hdrinc.com