

Cap X 33 Mile Transmission Line Bison Substation to Minnesota Border Final Inspection Report PU-07-759



Prepared for:
North Dakota Public Service Commission

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Exceptional outcomes.

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1.0 Executive Summary

The North Dakota Public Service Commission (PSC) retained Wenck Associates, Inc. (Wenck) to complete a construction inspection of the 345 kV Transmission Line from Fargo, ND, to the North Dakota/Minnesota border (project), owned and operated by Northern States Power. Construction of the Project was completed in April, 2015. Wenck reviewed all Project documents to identify those aspects that required compliance and visually inspected the Project area on 1 June 2015.

During the inspection, Wenck observed that the Project appears to have generally been installed at the locations described in the Project Application. Much of the site has been restored to its previous use for agricultural production. Significant vegetation has been established around the Bison Station. No significant issues were documented during the inspection.

There were several non-critical issues that may need to be resolved for the Project to be considered complete and in full compliance, including 1) verify compliance with National Electric Safety Code, 2) completion of a 10-year plan, 3) Completion of Tree and Shrub Survival Reports. Wenck expects follow-up actions taken by Northern States Power to address these particular issues can be corroborated in writing or photos and will not require a subsequent site visit.

In this Environmental Site Assessment (ESA), we have performed all appropriate inquiry in conformance with the standards and practices set forth in 40 CFR Part 312 – Standards for Conducting All Appropriate Inquiry. Moreover, in keeping with the rule, we have adhered to the general recommendations for format and used the industry-accepted definitions articulated in the American Society for Testing and Materials Phase I Environmental Site Assessment Process, Designation E-1527-05 (the Practice). Wenck recommends the PSC take the following steps to resolve these issues.

Recommended Action Steps:

- **Review Internally, Clarify, Then Request if Needed**
 - Verification of compliance with the National Electric Safety Code
 - Ten-Year Plan
 - Associated GIS files and maps of approved corridor.
 - Conservation Plan for the Project as recommended by USFWS.

- **Expect Later, Request if Necessary**
 - 2015 Tree and Shrub Survival Report
 - 2016 Tree and Shrub Survival Report

2.0 Background and Scope

2.1 Introduction

The 345 kV Transmission Line (Project) is located between Fargo, North Dakota, and St. Cloud, Minnesota. The Project consisted of construction of approximately 33 miles of transmission line. The project is owned and operated by Northern States Power (NSP). The Project is under the jurisdiction of the North Dakota Public Service Commission (PSC), which issued its Order in Case No. PU-07-759 on 30 December 2010, granting a Certificate of Corridor Compatibility for a Transmission Facility and No. 139 and Route Permit No. 152.

2.2 Purpose

The North Dakota Energy Conversion and Transmission Facility Act (North Dakota Century Code Chapter 49-22) authorizes the PSC to determine that the location, construction, and operation of jurisdictional energy conversion and transmission facilities will produce minimal adverse effects on the environment and the welfare of citizens of North Dakota. Post-construction inspections ensure that such projects are constructed in compliance with the siting laws (North Dakota Century Code Chapter 49-22) and rules (North Dakota Administrative Code Article 69-06) and the applicable Commission Findings of Fact, Conclusions of Law, and Order (Order). The North Dakota PSC retained Wenck to complete a construction inspection of the Project.

2.3 Methods & Scope of Inspection

2.3.1 Project Compliance Items Identified

Wenck identified a list of "Project Specifications" which NSP was obligated or responsible to follow and that can be verified either in written documentation or by an on-site inspection. These items were taken from 1) siting laws and rules, 2) Project activities or specifications proposed in the Application for a Certificate of Corridor Compatibility (Application), 3) Orders, and 4) recommendations by other agencies. These Project Specifications are listed in Table 2.1 under 7 categories: Siting & Location; Project Design & Engineering; Pre-Construction; Cultural Resources; Natural Resources; Construction, Reclamation & Soils; and Operation.

2.3.2 Document Review

Wenck staff reviewed publicly-available Project documents in the PSC Online Case Search (ND PSC 2015) to find written verification of compliance for the Project Specifications listed in Table 2.1. If written verification was filed, the findings are described in Section 3 and the source and name of the documentation is listed in Table 2.1, Column 3 (Written Verification). Green boxes in the table represent Project Specifications that are potentially non-compliant because they have no written verification.

2.3.3 On-Site Inspection

Jeffery Lorsung, a Wenck Environmental Scientist, visited the Project site on 1 June 2015 and was accompanied by Jacob Thompson of Barr Engineering, Inc. The site was inspected visually by driving the transmission line route and examining several points of interest within the corridor. Points of interest included new transmission line structures, connections to existing structures, and wetlands. Digital photographs (Fujifilm FinePix JX580, 16 megapixel) were taken showing typical Project infrastructure and documenting problem areas (see Appendix A). Geographic coordinates were recorded at observation points or

potential problem areas using a handheld Global Positioning System (GPS) (Garmin GMSMAP 60CSx; <10m accuracy; NAD83 datum).

If Project specifications were verified during the site inspection, the findings are described in Section 3. In Table 2.1, Column 4 (Site Verification), green boxes represent Project specifications that are potentially non-compliant because they could not be verified during the site inspection.

Table 2-1 : Project Specifications with Written or Site Verification Information

| Source of Project Specification | Description of Project Specification | Written Verification* | Site Verification* |
|--|--|---|--------------------|
| SITING & LOCATION | | | |
| App.pp. 4-1, 4-2, 4-3; Findings of Fact 2,6; Amendment to App. p. 4-1 | The proposed North Dakota portion of the Project will originate at a point along the North Dakota-Minnesota border and terminate at the proposed Bison Switching Station and consist of approximately 33 miles of 345 kV transmission line. | None | Section 3.1.1 |
| Findings of Fact 8 | The proposed route extends west from the North-Dakota-Minnesota border in Pleasant township, near Oxbow, until turning north in Normanna Township and continuing north for a short distance across Warren Township. In Warren Township, the proposed route diverges west, and then turns north in Addison Township, and continues north until terminating at the proposed Bison Switching Station siting area in Harmony Township. | None | Section 3.1.1 |
| ND Admin. Code Article 69-06-08; Findings of Fact 20, 21; App. pp. 4-1, 4-2, 4-3 | Siting Criteria analysis – exclusion, avoidance, selection, policy. Avoidance areas: historical resources, woodlands, wetlands. | Docket #117 Conclusions of Law 3, 5, 8 | Section 3.1.1 |
| Findings of Fact 31 | There is one rural residence within 500 feet of the proposed route. The owners of this residence have consented to the location of the Fargo Project within 500 feet of the residence and have executed a waiver of this routing avoidance area criteria. | Docket #93 Exhibit 31 | Section 3.1.2 |
| PROJECT DESIGN & ENGINEERING | | | |
| Order 33 | Provide the PSC with both an electronic (able to be uploaded into ESRI GIS mapping software) and a paper copy of the corridor approved by the PSC within 3 months of the PSC approving the corridor. | Docket #145, Design Plan and Profile Drawings for Segment 2 | N/A |
| Findings of Fact 12, 13 | Constructed using self-weathering or galvanized steel poles, typically 130-175ft in height. Poles will typically have a 36-48in-diameter base with a 6-12ft-diameter foundation. Three-phase-transmission line composed of two 954 Aluminum Conductor Steel Supported (ACSS) conductors. Single-circuit installation with structures capable of supporting a second circuit. The typical spans between structures will be between 600 and 1000 feet. | None | Section 3.2.1 |

| Source of Project Specification | Description of Project Specification | Written Verification* | Site Verification* |
|--|--|--|--------------------|
| Findings of Fact 15 | The Bison Substation will be a 345 kV switching station to provide in and out interconnections to the Jamestown to Maple River 345 kV transmission line. | None | Section 3.1.1 |
| Findings of Fact 16; ND Century Code 49-22-24 | Compliance with National Electric Safety Code. | None | N/A |
| PRE-CONSTRUCTION | | | |
| ND Century Code Ch. 49-22-07.1; ND Admin. Code Article 69-06-03 | Letter of Intent. | Docket #1, Letter of Intent | N/A |
| ND Century Code Ch. 49-22-08; ND Admin. Code Article 69-06-04; Order 1 | Application for a Certificate of Site or Corridor Compatibility. | Docket #1, Letter of Intent; Docket #7, Application | N/A |
| ND Century Code Ch. 49-22-07 | Certificate of Site Compatibility or Route Permit. | Docket #117, 173 | N/A |
| ND Century Code Ch. 49-22-04; ND Admin. Code Article 69-06-02 | Ten-year plan. | None | N/A |
| ND Admin Code Article 69-06-01-02; ND Century Code Ch. 49-22-13 | Conduct Public Hearing in each County through which the site, corridor, or route is proposed to be located. | Docket #62, Record of Formal Hearing; Docket #101, Hearing Attendance Sheet; Docket #50, Notice of Filing, Notice of Hearing | N/A |
| Order 2 | Conduct pre-construction conference. Provide notice of intent to start construction. | Docket #147, Notes from Pre-Construction Conference | N/A |
| Order 4 | Obtain permits and approvals from other/local agencies and provide copies to the Public Service Commission prior to construction activity. | Docket #104, Local Permits | N/A |

| Source of Project Specification | Description of Project Specification | Written Verification* | Site Verification* |
|---------------------------------|---|--|---------------------------------|
| CULTURAL RESOURCES | | | |
| Order 11, 12 | All cultural resource mitigation plans must be submitted to the North Dakota State Historic Preservation Office and approved before any construction activity takes place. NSP must report discovery of cultural, archeological, historic, or grave sites. Construction stopped, SHPO consulted and clearance required, report to Commission filed. | Docket #57, Class I Literature Search and Class II architectural Survey Letter | N/A |
| Findings of Fact Order #4 | NSP shall perform a Class III Cultural survey for portions of the proposed corridor it was unable to obtain access prior to the issuance of the Certificate of Corridor Compatibility and Route Permit | Docket #155, Compliance Filing (SHPO Letter) | N/A |
| NATURAL RESOURCES | | | |
| Findings of Fact 16 | Bird-safe designs used in accordance with Avian Power Line Interaction Committee recommendations. Flight diverters installed at Nelson Lake crossing. USFWS: Above-ground power lines marked; avoid construction during migratory bird breeding season (Feb 1- July 15). | Docket #7, Application; Docket #21, Amendment to Application | Section 3.5.1.1 |
| Siting Criteria 29 | Less than 1% of the proposed corridor contains wetlands, and the proposed route will impact acres of wetlands. If impacts to Clean Water Act jurisdictional waters are unavoidable and less than one-half acre, NSP will seek project authorization under a Section 404 US Army Corps of Engineers (USACE) Nationwide Permit application. Permanent impacts to jurisdictional waters will be mitigated according to USACE requirements. | Docket #251, As-Built Drawings | Section 3.4.1.1 |
| Findings of Fact 28; | Avoid disturbance to native prairie, wetland, threatened and endangered species. | Docket #29, Supplement to Application | Section 3.5.2, 3.5.3, and 3.5.4 |
| Order 10 | Report presence of T+E species, bald or golden eagles during construction and operation. A Wildlife Response Reporting System would be implemented. | None filed to date | N/A |
| Order 17, 18 | Reclamation, fertilization, and reseeding done in accordance with NRCS or USFWS unless specified by landowner and approved by Commission; Maintenance of roadways and associated transmission facilities will continue through the life of the facility. | Docket #61, Certification Relating to Order Provisions | Section 3.5.5 |
| Order 20 | Compliance with "Tree and Shrub Mitigation Specifications". | Docket #61, Certification Relating to Order Provisions; | Section 3.5.6 |

| Source of Project Specification | Description of Project Specification | Written Verification* | Site Verification* |
|---------------------------------|--|---|--------------------|
| | | Docket #241, Tree and Shrub Mitigation Plan; PU-07-759 | |
| | CONSTRUCTION, RECLAMATION & SOILS | | |
| Order 15 | Construction must be suspended when weather conditions are such that construction activities will cause irreparable damage to roads or land, unless adequate protection measures approved by the Commission are taken. Pre-existing roads shall be restored to satisfactory condition following construction activities. | Docket #61; Docket #171, 174-196, 198, 199-248, 250-252 | N/A |
| Order 25 | All waste generated as result of construction, operation, restoration, and maintenance of the Project shall be removed and properly disposed of on a regular basis. | Docket #61, Certification Relating to Order Provisions | N/A |
| Order 27 | Traffic Control shall be provided as necessary and appropriate safety measures implemented. | Docket #61, Certification Relating to Order Provisions | N/A |
| Order 28, 29 | All extraordinary events (including injuries to any person or the death of any threatened or endangered species) shall be reported within five business days of the event, including the discovery of a large number of dead birds or bats. | Docket #61 Certification Relating to Order Provisions | N/A |
| Order 16, 26 | Topsoil (up to 12 inches or depth of cultivation, whichever is greater) shall be separated from subsoil and re-applied as final grade over replaced subsoil, and restored to its prior condition as soon as practicable. | Docket #61, Certification Relating to Order Provisions | N/A |
| Order 21, 22, 23 | If as a result of construction activity any Landowner and resident experiences radio and/or television interference, it will be mitigated appropriately; damaged fences and gates will be repaired or replaced; damaged drainage tile will be replaced. | Docket #61, Certification Relating to Order Provisions | N/A |
| Order 37 | If any damage occurs to underground facilities as a result of construction activities, the PSC shall be notified, and construction shall be suspended in the vicinity of the damage until compliance with One-Call Excavation Notice System requirements have given clearance to proceed. | Docket #61, Certification Relating to Order Provisions | N/A |
| Order 5, 7, 15 | Provide weekly construction reports. Construction suspended during adverse weather conditions. | Docket #171, 174-196, 198, 199-248, 250-252 | N/A |
| Amendment To App. pp. 133-134 | The ND Department of Health (NDDH) requested that the Project minimize fugitive dust, degradation of waterways, manage stormwater, and noise. | Docket #34, Letter Comments on Environmental Impact of Proposed Project | N/A |

| Source of Project Specification | Description of Project Specification | Written Verification* | Site Verification* |
|---------------------------------|--|--|--------------------|
| | OPERATION | | |
| Order 8, 9, 18 | Construct and operate in accordance with Application and safety requirements. Obligations for reclamation and maintenance of the right-of-way continue throughout the life of the transmission system. | Docket #7, Application; Docket #21, Amendment to Application | <i>Section 3.7</i> |
| Order 21 | Mitigation of TV and radio interference that results from the Project. Work with landowners to determine and implement appropriate damage mitigation measures. | Docket #7, Application; Docket #21, Amendment to Application | <i>Section 3.7</i> |

***Note: Green shaded boxes represent non-compliance or potential non-compliance issues.**

3.0 Findings

3.1 Siting & Location of Facility

3.1.1 Siting Criteria

The Project is located within the proposed corridor and extends west from the North Dakota/Minnesota border in Pleasant Township, near Oxbow, until turning north in Normanna Township and continuing north for a short distance across Warren Township. In Warren Township, the project diverges west, and then turns north in Addison Township and continues north until terminating at the 345kV Bison Switching Station siting area in Harmony Township. The project route is of such design that it will have minimal adverse effects to the environment, at no point does an exclusion or avoidance area encompass more than 50% of the corridor width.

3.1.2 Setbacks

The agreed corridor width is 300 ft. There was one occupied dwelling within 500 ft. of the authorized right-of-way. Documented consent from the landowner was obtained for construction (Docket #93).

3.2 Project Design & Engineering

3.2.1 Length & Infrastructure

The North Dakota portion of the transmission line is approximately 33 miles in length. Constructed using self-weathering or galvanized steel poles which were typically 130-175ft in height, 36-48in in diameter and a typical span length of between 600-1000ft.

3.2.2 Right-of-Way Corridor

According to the design specifications, typical spans between structures are between 600 and 1,000 feet. Their right-of-way is mostly 150 feet wide. In some limited instances, where specialty structures are required for long spans, poor soil conditions, or in environmentally sensitive areas, additional feet of right-of-way were needed. These areas can be seen on the submitted as-built drawings (Docket #251).

3.2.3 Engineering Design Drawings

Engineering design drawings were submitted to the PSC prior to construction as part of the Design Plan and Profile Drawings for Segment 2 (Docket #145), which also includes drawings of Segment 1.

3.2.4 Codes & Specifications

According to the Project design, the Project was constructed in accordance with the Avian Power Line Interaction Committee standards for raptor-safe design (Docket #7, 21). Wenck was unable to confirm the design according to the National Electric Safety Code.

3.2.5 As-Built Drawings & GIS Files

As-built alignment drawings without associated CAD files were uploaded on 22 May 2015 (Docket #259), within three months after construction was completed. The as-built drawings were inspected in relation to the on-the-ground infrastructure of the facility and appeared to coincide.

3.3 Pre-Construction

A Letter of Intent was received on 14 November 2007 (Docket #1). The PSC moved that the one-year waiting period between filing the Letter of Intent and the Application be shortened to one day (Docket #2, Commission Motion acknowledging Letter of Intent) by a motion dated 14 December 2007. The PSC accepted the Letter of Intent and assessed a filing fee. An Application for a Certificate of Corridor Compatibility and Route Permit was subsequently submitted on 30 December 2010 (Docket #7, Application). A Certificate of Corridor Compatibility No.139 and Route Permit No. 152 were issued on 12 September 2012, in accordance with the Order and Certification Relating to Order Provisions signed by Northern States Power Company (NSP) in January 2012 (Docket #61, Certification Relating to Order Provisions). There was no written verification of a Ten-Year Plan having been submitted for the Project.

3.3.1 Pre-Construction Conference/Notice of Intent to Start Construction

Record of the pre-construction conference (12 December 2012) was on file and notice was provided during the meeting of intent to start construction on 11 January 2013 (Docket #147, Notice to commence construction, preconstruction meeting minutes, permits).

3.3.2 PSC Approval of Modification

Several modifications were done in regards to the siting criteria of the project. Dockets #156 and 157 explain the proposed corridor expansions and changes and provide detailed maps on the areas. All changes involve relocation or elimination of poles to accommodate landowner/township requests for route modifications. The PSC approved the modified route on 25 September 2013 (Docket #173).

3.3.3 Permits & Approvals from Other Agencies

Several permits and licenses were required and obtained for the Project (Docket #104, Local Permits; Docket #147, Notice to commence construction, preconstruction minutes, permits).

Federal agency permits and licenses obtained for the Project included:

- USACE- Permit for crossing Red River (Docket #170)

State agency permits and licenses obtained for the Project included:

- ND Department of Health – NDPDES General Permit for Stormwater Discharges from Construction Activity – 12/12/2012

Local permits and licenses obtained for the Project included:

- Warren Township – Permit for Conditional Use (1/2012) - 2/7/2012
- Harmony Township – Conditional Use Permit (001) - 8/18/2011, 10/26/2012
- City of Mapleton – Conditional Use Permit - 6/19/2012
- Durbin Township – Conditional Use Permit – 12/20/2011
- Addison Township – Conditional Use Permit – 1/24/2012
- Normanna Township – Conditional Use Permit (1/2012) – 1/26/2012
- Pleasant Township – Conditional Use Permit – 3/20/2012
- City of Horace – Conditional Use Permit (10-12) – 3/5/2012
- Cass County – Highway Access and Utility Permit – 1/3/2012

These permits and licenses were filed with the PSC as required.

3.3.4 North Dakota One-Call Participation

There was no written documentation that NSP participated in North Dakota One-Call.

3.4 Cultural Resources

3.4.1 Cultural Site Avoidance

Docket #21, the Amended Application, lists on page 6-2, that three National Register of Historic Places (NRHP) sites, one state monument (Champion Tree), four parks, and seven previously recorded archeological sites occur within the Proposed Corridor. This document also lists that 1,183 known residences occur within the Proposed Corridor, along with 1,481 acres of wetland (less than 1% of the total Proposed Corridor), and 1,504 acres of woodlands. No areas of critical endangered/threatened animal or plant species, or designated or registered national historic districts, wildlife areas, refuges, grasslands or other managed wild areas are located within the Proposed Corridor.

Northern States Power Company provided the PSC with the letter of concurrence of the North Dakota State Historical Preservation Office in the Company's "Class I Literature Search and Class II Architectural Survey, Cass County, North Dakota" as Docket #57, which concurs with the "No Historical Properties Affected" and "No Significant Sites Affected" determinations for the surveyed portions of the visual APE of the project.

Docket #47 is another letter of concurrence from the North Dakota State Historical Preservation Society regarding the "Class I Literature Search" and "Class III Intensive Archeological Investigation" with the determination being "No Historical Properties Affected" and "No Significant Sites Affected".

3.4.2 Mitigation Plans & Reporting

No cultural resource mitigation plans have been submitted by NSP to the PSC to date. No new discoveries of cultural, archeological, or historic sites have been reported to the PSC to date and no discoveries were recorded on the weekly construction reports for the Project. Presumably no new sites were encountered during construction of the Project.

3.5 Natural Resources

3.5.1 Wildlife & Avian Protection

Avian protection in the form of "bird diverters", strung along the top line, were added in areas crossing major bodies of water and in areas considered to be in fly-way zones. (Appendix A, Photos 5, 6, and 8).

In general, it appeared that NSP attempted to minimize impacts to wildlife and habitat. As part of Docket #29, Letters from the United States Department of the Interior, North Dakota Department of Game and Fish (NDDGF), and the Department of the Army, regarding placement of the Project Corridor in regards to Natural Resources and other sensitive areas as acceptable.

The NDDGF proposed that wetlands areas be protected when they cannot be avoided, as well as utilizing the publication of "Migrating Bird Collisions with Power Lines: the State of the Art in 1994" as a reference for options to reduce avian collisions. The NDDGF stated that they do not believe the project will have any significant adverse effects on wildlife or wildlife habitat.

The US Fish and Wildlife Service (USFWS) proposed that the Highway 94 alternative plan be avoided, as protected areas would not allow for the development of Right-of-Ways (ROW) for a project of this nature.

3.5.2 Wetlands

Wetland areas were avoided as much as possible during this project, with the exception of a few areas where crossings occurred. In these areas, pole placement occurred on either side of the wetland areas and not in them.

Few wetland areas were located within the Project corridor. Wetlands were avoided in both structure placement and in the creation of access ways. Vehicles were not driven through wetland areas.

3.5.3 Native Prairie

No areas of Native Prairie were included in the Proposed Corridor or observed to be disturbed during the construction of the observed Fargo, North Dakota, portion of the Project.

3.5.4 Reporting

Weekly construction reports indicated that no environmental incidents or issues occurred during construction (Docket #171, 174-196, 198, 199-248, 250-252, Weekly Construction Reports). There were no reports filed documenting the presence of threatened or endangered species or bald or golden eagles during construction or operation to date.

3.5.5 Reclamation & Reseeding

Areas of reclamation and reseeded were well established with vegetation meeting or exceeding the 70% of original coverage dictated by State requirements. Areas of disturbed agricultural land have all been returned to production, with responsibility for erosion occurring in these areas becoming the landowner's responsibility.

At the time of the site inspection, all structures were complete and actively transmitting power, soils had been re-contoured, reseeded had been completed, and vegetation was established in nearly all areas (Appendix A, Photos 4-8). Wenck recommends the PSC request documentation from NSP regarding the vegetation present once vegetation has fully established in the grassland area.

3.5.6 Tree & Shrub Mitigation

The tree and shrub mitigation plans necessitate an inventorying of all plants, including invasive and noxious weeds, before cutting. This includes: areas considered to be wind breaks, shelterbelts, or other planted areas; areas of native growth where trees are 1 inch in diameter at breast height or greater; and shrubs. The tree and shrub mitigation plan dictates that two 2-year-old saplings must be planted for every one tree removed and two shrubs cut to ground level - leaving root structure in place. Landowners were given the option of having replacement of trees and shrubs planted in other areas of their property (on or off the ROW). Finally, the plan dictates that tree and shrub replacements must be inspected annually, in September, for three years; and, if after the third annual report the survival rate is less than 75%, the Commission may order additional plantings.

The tree and shrub mitigation plan mentions that, at the Doug Trom property, the landowner insisted on planting the trees in an unstable river bank area. Wenck did not observe any trees planted in this area during the final inspection, and this area represents a potential future issue regarding the survival of the trees planted in this area.

3.6 Construction, Reclamation & Soils

3.6.1 Erosion & Sedimentation

The Project Applications state BMPs would be used during and after construction to minimize soil erosion and protect surface water. No major erosional concerns were seen during the inspection. However, Wenck observed areas of erosion in the ROW along the edges of cultivated farm fields, but these areas did not necessarily correlate with areas of project traffic or disturbance. At the time of the final inspection, the region had received heavy rainfall events creating ponding water in several areas within the ROW. Wenck recommends that these areas of natural drainage be observed for future vegetative growth (Appendix A, Photo 5).

3.6.2 Soil Staging Areas

In general it appeared that measures were taken to minimize the overall impact of the Project and the extent of land and soil disturbance. Wenck observed that topsoil appeared to be replaced to the required depth. Wenck observed that all disturbed areas had been restored to their prior condition. In general, very little disturbance took place, except near field entrances, as the majority of the project took place in cultivated farmland. Given the time of the final inspection (spring), the condition of crops could not be used as an indicator of proper soil replacement in this case; however, evidence of small plants were visible in most areas. Wenck was informed by Mr. Thompson that erosion control issues in areas put back into crop production would be the responsibility of the landowner.

Though Project plans included several staging areas, Wenck did not observe any impacts present in these areas (except for Bison Substation). Staging areas and entrances generally occurred in agricultural fields and utilized existing or constructed field approaches.

3.6.3 Roads & Repairs

The project utilized several minimum maintenance roads and other county roads during construction. Wenck did not observe any signs of uncontrolled tracking issues or road damage cause by construction traffic (Appendix A, Photo 6).

3.6.4 Reclamation

Weekly construction reports indicated that cleanup and reclamation had occurred concurrently with construction activities (Docket Items - Weekly Construction Reports). At the time of the inspection all reclamation activities had been completed. Wenck recommends that the PSC request documentation from NSP when vegetation has fully established. All roads within the Project area appeared to be in good condition and properly maintained.

3.6.5 Fencing, Repairs & Waste

Temporary fence was installed in certain areas along the Project ROW to prevent livestock from grazing on the disturbed land. There was no waste or debris observed within the Project corridor.

3.6.6 Underground Facilities

No reports of damage to underground facilities were reported to the PSC. No reports of damage to drainage tile were noted in the construction reports.

3.7 Operation

No concerns were identified during the site review that would indicate that Project operation was out of compliance with the Application or safety regulations. Wenck recommends documentation that all constructed structures are in compliance with National Electric Safety Code. No reports of extraordinary events were filed to date with the PSC.

3.7.1 Safe Operation & Maintenance

Mr. Thompson indicated that the transmission line is regularly inspected and maintained to provide safe and efficient operation. There was no waste, debris, or abandoned equipment observed during the inspection. The Project appeared to be regularly maintained and well reclaimed.

3.7.2 Public Relations

Several docket items correspond to public relations. A formal Notice of Hearing was given and published (Docket #52) and an attendance sheet from the 30 January 2012 meeting was submitted as Docket #101. Additional Docket items provide evidence of further communication and Notice given of any modifications made to the project.

4.0 Issues to Resolve and Recommendations

4.1 Project Specifications Needing Written Verification

A few components of the Project were asserted in the Application or proposed construction and weren't present on the PSC database. Listed below are items that should be requested or can expect to be requested. Wenck suggests they be on file with the PSC to confirm compliance. Wenck recommends the PSC request from NSP the following list of "Necessary" items, and if the PSC deems appropriate, the list of "Potential" items could also be requested.

Necessary Items

- Associated GIS files and maps of approved corridor. If approved corridor differs from the as-built drawings, this discrepancy should be reconciled.
- Ten-Year Plan - No documentation could be found of the Ten-Year Plan in the online database.

Potential Items

- Conservation Plan for the Project as recommended by USFWS.
- Tree and Shrub Mitigation Plan Survival Reports

4.2 Soil Replacement, Revegetation, & Crop Production

The majority of the project had an excellent establishment of vegetation. Agricultural fields that were planted this year (spring 2015) following the completion of construction showed no signs of distress or insufficiencies due to poor soil quality or soil mixing. Wenck observed minor erosion issues along the edges of agricultural fields; however, Mr. Thompson stated that once agricultural lands are put back into production, the landowner accepts responsibility for erosion issues in the agricultural fields. Soil removal (from conveyance systems) and re-seeding may be necessary in areas following heavy rains (spring 2015) and flooding issues in the area.

Wenck observed that most of the project structures were constructed with consideration to avoid drainage ways and other water conveyances. Wenck observed one area of potential concern regarding erosion between poles 104 and 106; a drainage system (stream) through an agricultural field with no established bank/shoreline vegetation. This issue is not related to Project construction; however, the stream does cross into/through the permitted Project corridor. Landowner education may be necessary to prevent erosion from increasing and encroaching on Project structures in the future. Wenck recommends the PSC request monitoring and documentation of this area, as well as the edges of fields where erosion is occurring in areas of crop production (areas where responsibility has been transferred back to landowners) within the previous Project corridor.

4.3 Tree & Shrub Mitigation

Mr. Thompson noted that annual tree and shrub mitigation inspections would be completed by "a qualified Contractor" (Docket #249) starting in 2015. Docket item #249 also identifies the total amounts of trees and shrubs removed during construction and the total amount of trees and shrubs to be replanted, along with the locations of the plantings and the number and variety of each species in the planting. Documentation as to the replanting contractor could not be verified on the PSC website. The PSC should expect survival reports as part of the tree and shrub mitigation plan.

Visual inspection of the planting areas during Wenck's Final inspection showed that some of the proposed planting areas were overgrown by other species, or were not discoverable at the location, and will most likely need to be replanted in years to come.

5.0 Conclusions

Overall, the Project appeared to have been constructed as designed with minimal impacts to the surrounding natural or human environment. The Project corridor was well maintained and in good condition. However, Wenck noted a few items missing that may need to be requested before the Project is considered complete and in full compliance. These included: 1) written documentation of compliance with the National Electric Safety Code and submission of permits that are not currently on file; 2) continued monitoring of tree and shrub survival and replanting where necessary; 3) Submission of Ten-Year Plan. These issues could be necessary for Project compliance, but the PSC should determine which are required for the company to comply with and then notify the company what actions are required on their part.

6.0 References

Avian Power Line Interaction Committee (APLIC). 2012. Reducing Avian Collisions with Power Lines: The State of the Art in 2012. Edison Electric Institute and APLIC. Washington, D.C.


North Dakota Public Service Commission (ND PSC). 2015. Online Case Search. Available from: <http://psc.nd.gov/public/casearch/index.php> accessed 2015.

Thompson, Jacob. 2015. BARR Engineering, Inc. Personal Communication: discussion during site visit.

7.0 Signatures

The services performed by Wenck scientists for this project have been conducted in a manner consistent with the degree of care and technical skill appropriate exercised by professionals currently practicing in this area under similar time and budget constraints. Recommendations and findings contained in this report represent our professional judgment and are based upon available information and technically accepted practices at the present time and location. Other than this, no warranty is implied or expressed.

Lead Project Manager, Kevin Magstadt, and Secondary Project Manager, Luke Nelson, prepared the report.


Kevin Magstadt, P.E., Principal/Regional Manager

10/23/15
Date


Luke Nelson, Project Engineer

10/23/15
Date

1. Site Map



Legend

- Proposed Route
- Proposed Bison Switching Station Site
- Preliminary MN Alignment
- MN Permitted Route
- North Dakota Diversion Project Alignments**
- DEIS Diversion Alignment
- LPP Diversion Alignment
- Sponsor Proposed Diversion Alignment
- Diversion Alignment Tieback Levee
- Substations
- Existing Transmission Lines**
- Voltage (kV)
- 400
- 345
- 250
- 230
- 115
- 69
- Roads**
- Interstate
- US Highway
- State Highway
- County Road / Secondary Road
- Railroad
- River / Stream
- Lake
- State Boundary
- County Boundary
- Municipal Boundary
- Township Boundary



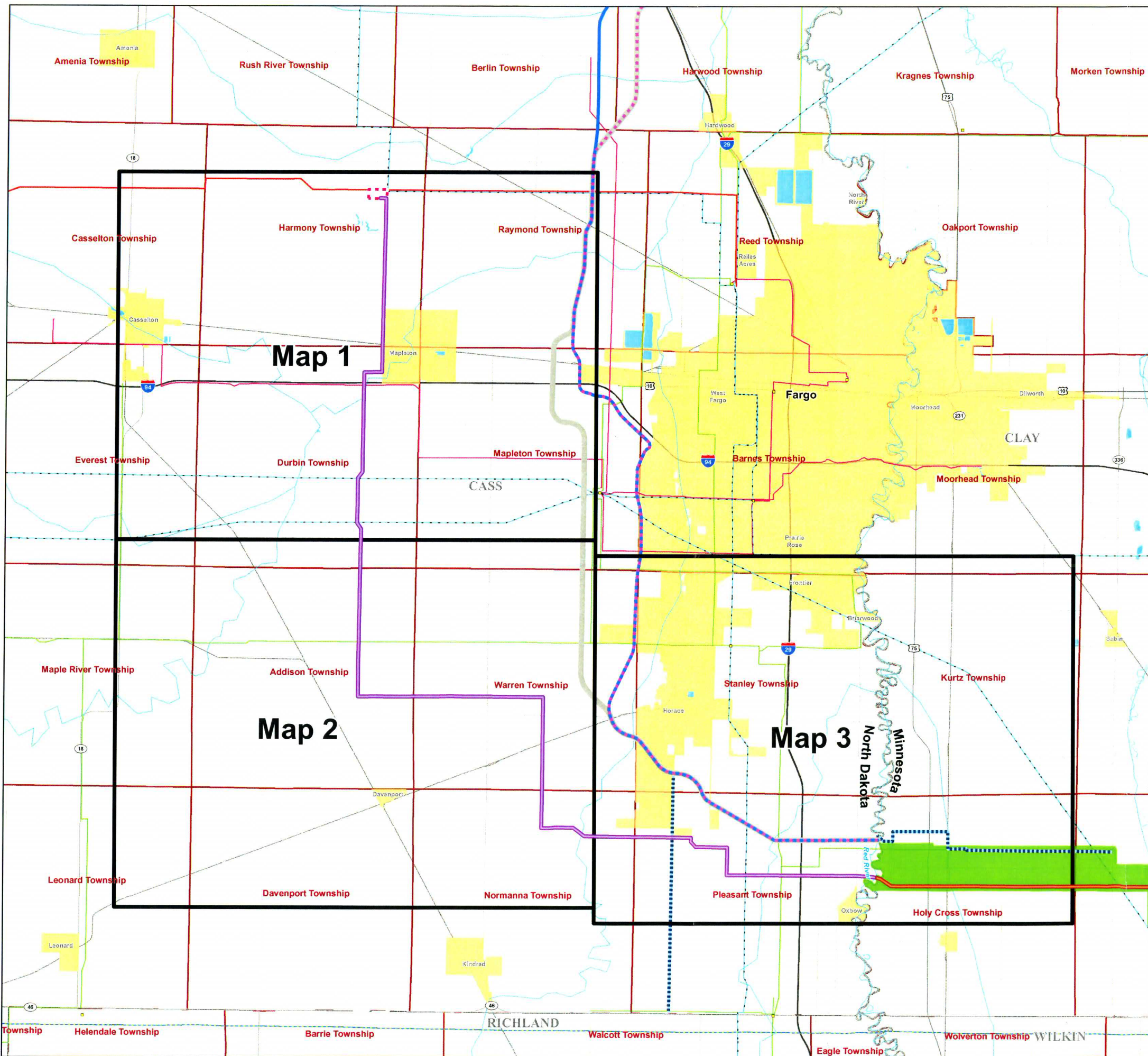
0 0.5 1 2 3 4 Miles

**FARGO TO ST. CLOUD
345 kV TRANSMISSION
LINE PROJECT
Proposed Alignment**

Date: 01/18/12

Drawn by: MLTEICHERT

EXHIBIT
3



Photographs



Above: Photo 1 – Bison switching station access road.

Below: Photo 2 – Bison switching station pond.





Above: Photo 3 – Transmission line leaving bison station.

Below: Photo 4 – Verification of vegetation establishment.





Above: Photo 5 – Transmission line through farm field.

Below: Photo 6 – Transmission line road crossing.





Above: Photo 7 – Transmission line through farm field.

Below: Photo 8 – Transmission line tower structure.





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