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- **Minnesota Department of  
Commerce**

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# **Lake Marion to Hampton Advisory Task Force Report**

## **Brookings County – Hampton 345 kV Transmission Line Project**

**PUC Docket No. ET2/TL-08-1474**

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**June 10, 2009**

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# Introduction

On December 29, 2008, Great River Energy and Xcel Energy (“Applicants”) submitted a route permit application to the Minnesota Public Utilities Commission (Commission) for a 345 kilovolt (kV) transmission line from Brookings County, South Dakota, to Hampton, Minnesota (“project” or “transmission line project”). The proposed project is approximately 240 miles long and includes the development of four new substations and the expansion of four existing substations. The route permit application identified two proposed routes – the applicant’s preferred route and alternate route (See Appendix A).

On January 29, 2009, the Commission authorized the Department of Commerce, Office of Energy Security (OES) to establish and charge, as appropriate, advisory task forces to assist OES staff in determining the scope of the environmental impact statement (EIS) to be prepared for the proposed project. The OES established two geographically-based advisory task forces for the project, the Lake Marion to Hampton advisory task force (ATF) and the Minnesota River Crossings to New Prague ATF. The Lake Marion to Hampton ATF was charged with: (1) identifying impacts and issues to be evaluated in the EIS, and (2) identifying alternative transmission line routes and substations locations to be considered in the EIS, within the Lake Marion substation to Hampton substation area in Dakota, Rice, and Scott counties (See Appendix B).

On March 11, 2009, the OES appointed eighteen persons to the Lake Marion to Hampton ATF (See Appendix C).

# Methodology

The Lake Marion to Hampton task force met three times – March 25, April 15, and April 29, 2009. The task force, through a facilitated process, discussed the proposed project and the charge given to the task force. Task force meetings were open to the public and citizens contributed their ideas during a designated comment period at each meeting.

The first task of the ATF was to determine the impacts and issues, within the task force’s geographical bounds, that should be evaluated in the EIS for the project. This task was the focus for the first meeting. Task force members, through small and large group discussions, identified impacts and issues. Additionally, task force members submitted “homework” identifying specific impacts and issues that would be important to consider for the Lake Marion to Hampton section of the project.

At the second meeting, task force members reviewed and prioritized the impacts and issues identified at the first meeting. Task force members were asked to vote as to which impacts/issues were most important, very important, or important. Following this prioritization, task force members took up the second part of their charge – identifying alternative routes and substation locations. Task force members broke into small groups and brainstormed and identified alternative routes, route segments, and substation locations. The small groups reported back to the entire task force.

At the third meeting, the task force reviewed the alternatives identified at the second meeting and discussed the pros and cons of each alternative. Clarifications, corrections, variations within a route, and new alternative route segments were discussed. The task force then discussed if there was strong support for one or several route(s) or route segment(s), such that the task force wanted to indicate a preference or recommendation.

The task force's work was captured in meeting notes recorded on flip charts by the meeting facilitator. Meeting notes and supporting materials for all meetings are available on-line: <http://energyfacilities.puc.state.mn.us/resource.html?Id=20030>

## Impacts and Issues to Evaluate

Task force members identified impacts and issues by responding to the following question: "What impacts and issues should be considered in the EIS for evaluation of proposed transmission line routes and substation locations?" The task force identified and prioritized eleven impacts and issues to be evaluated in the EIS (See Appendix D).

Top priority impacts and issues to consider were:

- Coordination with existing comprehensive plans and other ongoing studies, and respect for cultural values of community,
- Health issues – concerns for humans and wildlife due to electromagnetic fields and static electricity,
- Negative impact on property values and loss of future property value for developed and undeveloped land.

Second priority impacts and issues to consider were:

- Fairness (collectiveness),
- Farming.

Third priority impacts and issues to consider were:

- Use existing rights-of-way, but not pipelines
- Wetland damage; during construction of the transmission line and ongoing.

Other important impacts and issues to consider were:

- Transmission line construction issues, e.g., damage of roads and rights-of-way, water flow and contamination,
- Rate increases,
- Emergency and safety issues,
- Affect on a unique cultural resource – Cambodian Buddhist Temple.

# Identification and Review of Alternative Routes, Route Segments, and Substation Locations

The task force identified twelve alternative routes or route segments (some with associated substation re-locations) for consideration in the EIS (See Appendix E). Some alternatives were additions to or variations on the applicant’s proposed routes; others were completely new routes. In addition to maps, OES staff provided task force members with tables that attempted to compare the alternatives with applicable sections of the applicant’s proposed routes (See Appendix F). The task force reviewed the alternatives and the applicant’s proposed routes, and identified pros and cons for each. Pros and cons for each alternative (keyed to map names and colors), as well as task force discussion, are noted here:

## **NE Alternative 2 (NE Alt 2, dark green)**

### Pros

- Avoids the City of Lonsdale
- Impacts less households

### Cons

- Does not use existing right-of-way
- Route likely still impacts Lonsdale planning; it needs to connect to the applicant’s alternate route further east.
- Line crosses two gas line venting stations
- Because of topography, line would be at eye level for a number of homes in Lonsdale area.

The task force discussed options to improve the route. Suggestions included:

- Explore using existing 69kV line north of NE\_Alt2 route
- If following the 69kV line, it could tie into the existing substation and drop south to catch the applicant’s alternate route.
- Another option, follow 69kV line and go further east of substation and then connect with applicant’s alternate route
- With these options – approximately 20 homes would be impacted in the Lonsdale area.

## **NE Alternative 3 (NE Alt 3, gold) and NW Alternative 1C (NW Alt 1C, purple dashed)**

Task force members corrected the map to note that there are two variations within this route: (1) the “right angle shaped” route shown on the map, and (2) a “diagonal route” which would follow County Rd. 47 and Lewiston Blvd. to the Hampton substation area (moving to Emery Ave. at 240<sup>th</sup> St.).

#### Pros

- Protects commercial land in the City of Hampton
- Avoids homes in the City of Hampton
- Fewer homes in general impacted

#### Cons

- Goes through a new area and townships that are not involved in this task force. It could impact homeowners and land owners who are not here.
- Karst topography in this area.

The task force discussed why the applicant's alternate route didn't stay on County Rd. 86 the whole way east of I-35. Could this be an option? Task force members suggested that there are homes and center pivot irrigation systems in this area.

#### **NW Alternative 1A (NW Alt 1A, red)**

#### Pros

- Impacts fewer homes
- Impacts fewer prime farmland acres
- Moves the line further south and closer to favorable wind generation sites (see Appendix B)

#### Cons

- Does not connect with Lake Marion substation
- Goes three miles out of right-of-way
- Crosses swamp area – Dutch Marsh
- Crosses farms and natural areas in Dakota County with conservation easements

The task force discussed options to improve the alternative. One option could be to run along the rail line prior to where the route currently turns north and follow that line up to the applicant's alternate route. Another option would be to drop the Lake Marion substation south such that it connects with this alternative.

#### **NW Alternative 1B (NW Alt 1B, light green; also known as “Modified South Route”)**

This alternative moves the Lake Marion substation south, i.e., instead of expanding the existing Lake Marion station, building a new station further south. This new substation and the Lake Marion substation would be connected by a transmission line of appropriate voltage. The new substation would be approached from the west by the applicant's alternate route or some task force alternative/variation. The new substation would connect to the Hampton substation by any of several task force alternatives/variations, including portions of the applicant's alternate route.

#### Pros

- Uses existing right-of-way with no removal of trees
- Impacts less homes than applicant's alternate route
- Follows I-35 noise corridor
- Provides redundancy
- Utilizes a substation plan that was identified as an option in an early draft of the applicant's proposal
- Reduces the impact of the applicant's alternate route at the intersection of County Road 2 and I-35.

#### Cons

- Likely does not meet the need of connecting to the Lake Marion substation unless an alternate substation is built south of Hwy 86 (57th St. and I-35 area)
- Impacts / limits future development of 57th St and I-35 interchange
- Conflicts with development on I-35

### **NW Alternative 2 (NW Alt 2, purple)**

#### Pros

- Uses a corridor in an area zoned industrial and commercial
- Favored by Eureka Township
- Follows a principal arterial that has an existing line along it
- Impacts less farmland
- Goes through more metropolitan area where electrical energy will be used

#### Cons

- Close to Airlake airport
- Crosses Vermillion River (all routes will cross the Vermillion River somewhere?)
- Impacts commercial area and additional homes
- Crosses school area – Lakeville School and the surrounding ball fields
- Adds additional miles to the route

### **NW Alternative 3 (NW Alt 3, maroon)**

It was noted by a task force member that the route follows more of 245<sup>th</sup> St. than is identified on the map.

#### Pros

- Avoids impacts on land owned by a widow. The applicant's preferred route jogs north along Highway 9; this jog impacts much of this person's land
- Avoids farmland that is farmed using GPS systems.
- Avoids a metal fabrication business
- House at 245th St and Dodd does not have to be relocated
- Is a shorter route and uses existing right-of-way
- Eliminates impact on nine people

Cons

- None identified

**SW Alternative 2 (SW Alt 2, salmon)**

Pros

- Shares right-of-way with Highway 13 and County Road 8

Cons

- Impacts a number of homes; homes not identified on the map
- Additional miles to the route
- Impacts on property values
- Crosses 13 public waters

**SE Alternative 2 (SE Alt2, yellow) and SE Alternative 3 (SE Alt 3, green dashed)**

These alternatives assume that the Hampton substation is moved south of the location proposed by the applicant. Additionally, they assume that the eastern terminus (I-35) is reached by the I-90 to I-35 alternative.

Pros

- Avoids Randolph using an area currently zoned industrial
- Uses an area zoned commercial and recently annexed by Northfield
- Impacts less cropland, less wetlands, and crosses fewer public waters.
- Follows existing rail corridor

Cons

- Alternative does not connect to a substation in Lake Marion area
- May not meet the need identified for the transmission line
- Impacts Cannon River viewshed
- Comes close to Stanton Airfield where there are a number of gliders
- Lot of cross country; does not follow an existing right-of-way
- Follows a state trail (Milltown Trail)
- Goes through an area with a number of center pivot irrigation systems (comment was made by task force member that the line was drawn to go around these system)

**I-90 to I-35 Alternative**

Pros

- Little impact on homes
- Uses existing right-of-way
- Easy to build poles
- Less noise impact
- Space to add more lines
- Goes through area with high wind generation potential
- Can easily head to LaCrosse

#### Cons

- Doesn't connect to any of the identified substations and therefore may not meet the identified need.
- May not provide the electrical performance identified in the need
- Longer line (adds about 56 miles)
- Because of extra length, the line would likely cost more

#### **Buddhist Temple Alternative**

A task force member suggested an alternative in the Hampton substation area that would lessen impacts to the Cambodian Buddhist Temple near Hampton. The member submitted the alternative as a public comment, directly to OES staff.

#### Pros

- Reduces the number of homes impacted
- Further from the City of Hampton
- Route goes around Buddhist Temple, approximately 1000 feet behind temple
- Route is also moved away from photo business, daycare, and a horse stud farm
- Less impacts to Hampton Woods nature area.

#### Cons

- Goes cross country
- Impacts on farm

#### **Applicant's Preferred Route**

#### Pros

- Doesn't go through City of Hampton
- Least number of miles of all the routes
- Crosses least prime farm land

#### Cons

- Impacts more homes than other routes (task force member had questions about home counts along the applicant's proposed routes)
- Impacts / reduces property values in the area
- Route goes cross-country through New Market township
- Utilizes only 60 percent right-of-way
- Impacts or crosses 40% farm land, approximately 77 acres
- Passes through Eureka Township; inconsistent with preservation plans and township values
- Impacts along 220th St.
- Can develop a better alternative that impacts less homes, cropland, wetlands, public waters, etc.
- Forces the impact of expanding energy use on the area; rationalizes substation expansion

## **Applicant's Alternative Route**

### Pros

- Can use shoulders on roadways for construction of power line poles
- 91% of existing right-of-way is followed from Hampton to Lake Marion
- Goes through less congested land
- Impacts fewer homes
- Highway 86 is a future arterial roadway and is a pretty straight shot from west to east
- Closer to wind generation areas
- Goes south of Eureka Township

### Cons

- Impacts/goes through City of Hampton commercial area
- Comes into City of Lonsdale city limits
- Crosses natural areas and conservation easements
- Crosses more farmland and wetlands
- Crosses an area of geological concern in Castle Rock area, sandstone issue
- Improvements of intersections for I-35 and major arterials would be impacted by double tracking of line; double tracking is ugly.
- Sky Harbor air park and crop dusting businesses that uses the airport will be impacted
- Impacts a historical route – County Road 47
- Some of the roadway right-of-way used by the route does not have a shoulder
- Concerns that home counts along the route are not correct

## **Preferences and Recommendations**

The task force expressed no preferences or recommendations with respect to specific route alternatives. Task force members, at the third meeting of the ATF, attempted to prioritize the alternatives, but found the process very difficult. Accordingly, the task force recommended that all alternatives be carried forward with the pros and cons identified by the task force.

Specific difficulties in prioritizing alternatives expressed by task force members included:

- Making decisions with incomplete data. Task force members noted that data layers used by the applicant in developing its route permit application, particularly the identification of houses and structures, included errors. Additionally, as the route alternatives identified by the task force are new, there is little data on these alternatives such that they can be compared and contrasted. OES staff noted that, at this point in the process, it is not uncommon to have areas of incomplete data. An important function of the EIS is to identify inaccuracies and gaps in the data so they can be corrected and supplemented.
- Not enough time to review the new route alternatives created. Several task force members expressed that there was not enough time at the final meeting to review the newly developed routes and to then make an informed decision on which new route alternatives would best suit the needs of all parties involved.

- Voting for an alternative was difficult to divorce from voting for a route. Task force members found it difficult to express support for an alternative that addressed a problematic area if the alternative was part of a larger route with which the task force member disagreed.

## Conclusions

- 1. Study all of the alternative routes identified by the task force.** A tremendous amount of effort and thought went into the creation of the task force's alternative routes and route segments. The task force could not find consensus around a particular route or route segment, or recommend a particular alternative. Thus, the task force recommends that all alternatives be carried forward in the EIS process with the pros and cons identified by the task force. Several task force members suggested that all the alternative routes identified by the ATF were better than what was proposed by the applicant.
- 2. All impacts and issues identified by the task force are important.** The impacts and issues identified by the task force are all important and should be evaluated in the EIS. The prioritization of impacts and issues performed by the task force may be helpful in guiding OES staff in the development of the EIS, but is not intended to diminish the importance of all impacts and issues raised and discussed by the task force.

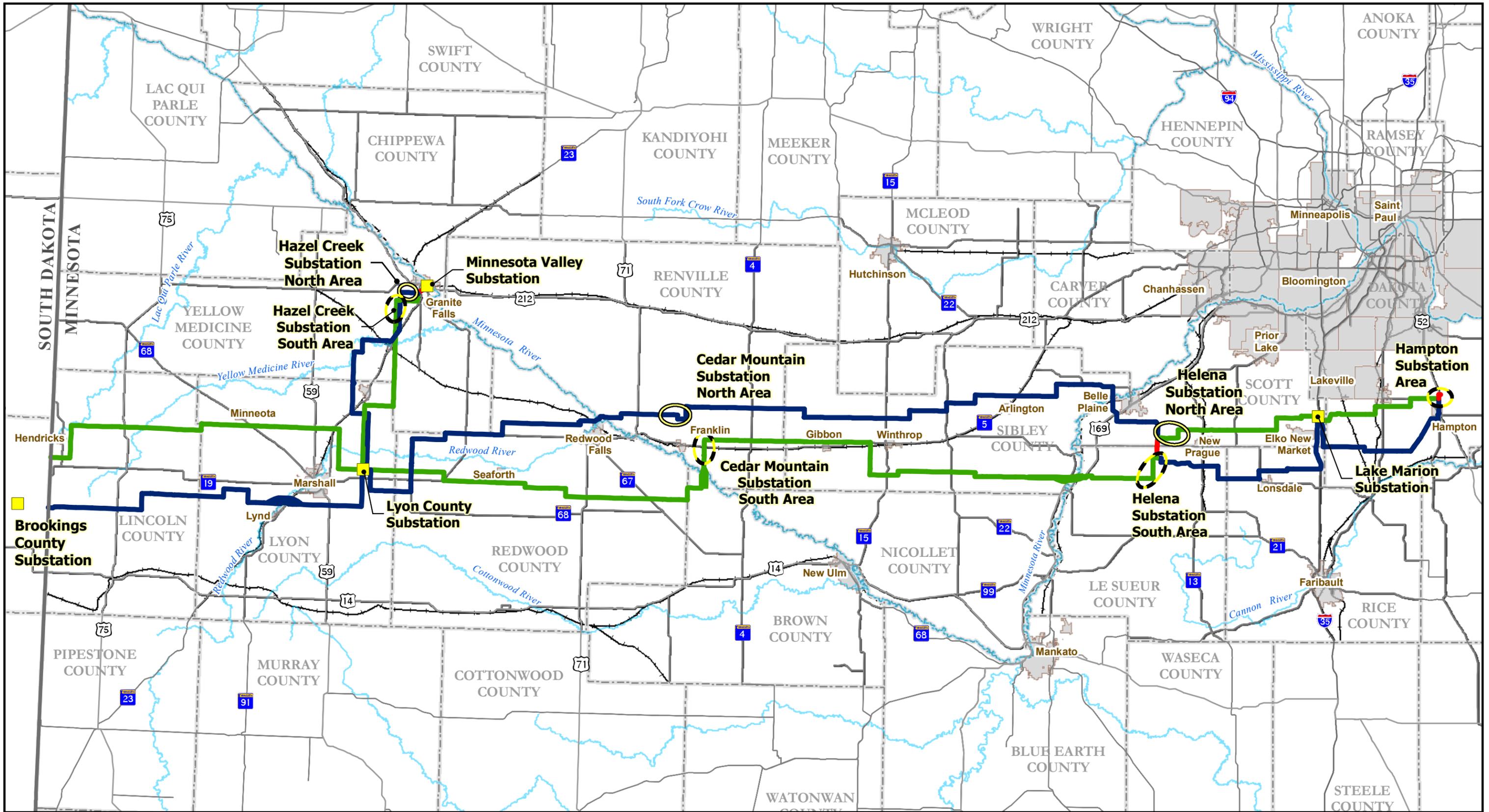
# Appendices

- A – Project Overview Map
- B – Advisory Task Force Charge
- C – Notice of Appointment
- D – Impacts and Issues to be Evaluated in the EIS
- E – Maps of Alternatives
- F – Impact Tables for Alternatives

## **Appendix A**

### **Applicant's Proposed Routes Project Overview Map**





		<b>Routes</b> Preferred Alternate Both Preferred & Alternate		Project Substations Preferred Substation Area Alternate Substation Area	
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**Project Overview Map**

Brookings County - Hampton  
345 kV Transmission Line



## **Appendix B**

### **Advisory Task Force Charge**





**In the Matter of the Route Permit Application  
for a 345 kV Transmission Line from  
Brookings County, South Dakota, to  
Hampton, Minnesota.**

**LAKE MARION TO HAMPTON  
ADVISORY TASK FORCE  
DECISION AND CHARGE  
PUC Docket ET2/TL-08-1474**

The above-entitled matter came before the Director of the Department of Commerce Office of Energy Security (OES) for a decision on the appointment of an advisory task force (ATF) to advise the Public Utilities Commission (Commission) on the application by Great River Energy and Xcel Energy for a route permit for the Brookings County – Hampton 345 kV transmission line project.

**WHEREAS**, the applicants submitted an application for a route permit for the Brookings County – Hampton 345 kV transmission line project on December 29, 2008; and

**WHEREAS**, Minn. Stat. 216E.08 provides for the establishment of an ATF to assist the Commission in carrying out its duties. Under the statute, the Commission shall provide guidance to the ATF in the form of a charge; and

**WHEREAS**, Minn. Stat. 216E.08 establishes that an ATF be comprised of at least one representative from each of the following: Regional development commissions, counties and municipal corporations, and one town board member from each county in which a route is proposed to be located. This rule further stipulates that no officer, agent, or employee of the applicant shall serve on the advisory task force; and

**WHEREAS**, on January 29, 2009, the Commission authorized the OES to establish an ATF(s) and develop a structure and charge for the ATF(s); and

**THEREFORE**, having reviewed this information, the OES makes the following determination with regard to the need for and charge to an ATF relating to this matter.

#### **Lake Marion to Hampton Advisory Task Force Authorization**

As authorized by the Commission, the OES establishes an ATF to assist in identifying impacts and route alternatives to be evaluated in the environmental impact statement (EIS) prepared by OES Energy Facilities Permitting (EFP) staff for the proposed Brookings County – Hampton transmission line project. The Lake Marion to Hampton ATF members will be solicited, as required by Minn. Stat. 216E.08, Subpart 1, from the following governmental units:

- Metropolitan Council
- Dakota County
- Rice County
- Scott County
- City of Elko New Market
- City of Hampton
- City of Lonsdale
- Castle Rock Township
- Cedar Lake Township
- Empire Township
- Eureka Township
- Greenvale Township
- Hampton Township
- New Market Township
- Sciota Township
- Vermillion Township
- Waterford Township
- Webster Township
- Wheatland Township

In addition, the ATF will include:

- Five private citizens, who live, work, or own property on or near the proposed project

The ATF will comprise no more than 20 members.

The OES charges the advisory task force as follows:

1. ATF members will assist the OES in identifying impacts and issues in the area of concern that should be evaluated in the EIS.
2. ATF members will assist the OES in identifying alternative transmission line routes or substation locations in Dakota, Rice, and Scott counties that may maximize positive impacts and minimize or avoid negative impacts of the project in the area of concern.

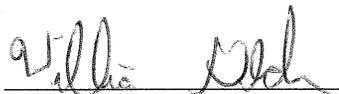
ATF members are expected to participate with OES staff in up to three meetings and to assist staff with the development of a summary of the task force's work including their preferences or recommendations, if any. Meetings will be facilitated by OES staff or a facilitator engaged by OES staff.

The Lake Marion to Hampton ATF will expire upon issuance of the EIS scoping decision.

OES EFP staff is directed to appoint, as appropriate, members of the ATF and to begin work on the above-noted charge.

Signed this 6<sup>th</sup> day of March, 2009

STATE OF MINNESOTA  
DEPARTMENT OF COMMERCE  
OFFICE OF ENERGY SECURITY

  
\_\_\_\_\_  
William Glahn, Director

## **Appendix C**

### **Notice of Appointment**





# STATE OF MINNESOTA Office of Energy Security



Issued: March 11, 2009

## NOTICE OF THE APPOINTMENT OF THE LAKE MARION TO HAMPTON ADVISORY TASK FORCE FOR THE BROOKINGS COUNTY - HAMPTON TRANSMISSION LINE PROJECT

**PUC Docket Number: ET2/TL-08-1474**

**PLEASE TAKE NOTICE** that the Minnesota Department of Commerce, Office of Energy Security (OES) has appointed the following individuals to serve as members of the Lake Marion to Hampton advisory task force (ATF) for the proposed Brookings County - Hampton transmission line project. Additional or replacement appointments may be made.

### Lake Marion to Hampton Advisory Task Force

Name	Affiliation
John Mertens	Dakota County
Jeff Docken	Rice County
Joe Wagner	Scott County
Mark Nagel	City of Elko New Market
Joel Erickson	City of Lonsdale
Bill Bray	City of Hampton
Russ Zellmer	Castle Rock Township
Carrie Jennings	Eureka Township
Robert Wintes	Greenvale Township
Ken M. Chlan	New Market Township
Ralph Stoffel	Vermillion Township
Lawrence McFadden	Webster Township
Clarence Salaba	Wheatland Township
Trish Johnson	Private Citizen
Ray Kaufenberg	Private Citizen
Merlin Dubbels	Private Citizen
Joel Helmberger	Private Citizen
Sandra Weber	Private Citizen

The ATF will assist in identifying impacts and route alternatives to be evaluated in the environmental impact statement (EIS) prepared by OES Energy Facilities Permitting staff for the proposed project.

Information about the proposed project can be found on the Minnesota Public Utilities Commission's website: <http://energyfacilities.puc.state.mn.us/Docket.html?Id=19860>. Questions about the ATF should be directed to Ray Kirsch (651-296-7588, [raymond.kirsch@state.mn.us](mailto:raymond.kirsch@state.mn.us)) or Scott Ek (651-296-8813, [scott.ek@state.mn.us](mailto:scott.ek@state.mn.us)), Department of Commerce, 85 7<sup>th</sup> Place East, Suite 500, St. Paul, MN 55101.



## **Appendix D**

### **Impacts and Issues to be Evaluated in the EIS**



## Identification of Impacts and Issues

*What impacts and issues need to be considered in the EIS for evaluation of proposed transmission line routes and substation locations?*

Fairness (collectiveness)	Farming	Use existing rights-of-way (but not pipeline)	Wetland damage – during construction and ongoing	Construction issues – damage of roads, R.O.W., water	Rate Increases	Coordination with existing comprehensive plans and other ongoing studies – future and existing land use with respect for cultural values of community	Emergency and safety issues	Health issues – concerns for humans and wildlife, electromagnetic fields and static electricity	Negative impact on property values and loss of future property value for developed and undeveloped land	Affect on unique cultural resource – Cambodian Buddhist Temple
2 <sup>nd</sup> Priority Very Important	2 <sup>nd</sup> Priority Very Important	3 <sup>rd</sup> Priority Important	3 <sup>rd</sup> Priority Important	*	*	1 <sup>st</sup> Priority Most Important	*	1 <sup>st</sup> Priority Most Important	1 <sup>st</sup> Priority Most Important	*
<ul style="list-style-type: none"> <li>• People, nobody wants it, but reality someone has to look at it</li> <li>• North versus South (nobody wants it in their front yard)</li> <li>• Process is not transparent, scientific or without bias</li> </ul>	<ul style="list-style-type: none"> <li>• Irrigation – easements interrupt</li> <li>• Farming around pole – limit crop dusting (Webster and Wheatland; Lonsdale &amp; Webster – high amount of canning crops)</li> </ul>	<ul style="list-style-type: none"> <li>• Location, best area</li> <li>• Use of existing R.O.W. and future planned source &amp; demand (hook into power source and future demand)</li> <li>• Co-location of other public uses in R.O.W.</li> </ul>	<ul style="list-style-type: none"> <li>• Wetland proximity to Big Sough (construction)</li> <li>• Wetland destruction; no control over easements on agriculture land. Personally viewed crews repairing transmission line: a) completely destroyed ag. field, b) destroyed waterway protecting wetland downstream, c) ruined top soil in field, d) compacted soils for future crop growth</li> </ul>	<ul style="list-style-type: none"> <li>• Roads: construction damage, who will pay for repair</li> <li>• Construction time line?</li> <li>• Road use during construction and maintenance of line</li> </ul>		<ul style="list-style-type: none"> <li>• Northwest corner of Lonsdale – proposed alternative route is in Lonsdale’s 2025 land use plan</li> <li>• Impact on future development areas as per city of Elko New Market’s 2030 Comp. Plan</li> <li>• Impact on interchange plans at CSAH 2 &amp; I-35 and future development in that surrounding area (New Market Township)</li> <li>• Local government loss of control (Comp. Plan 2035); area in route wanting to remain as open (green space or ag. use) space – Eureka</li> <li>• Ag land – Webster, township; keep it rural</li> <li>• Wetlands: Vermillion River Watershed Ordinance, restrictive</li> <li>• Road R.O.W. – current and future</li> </ul>	<ul style="list-style-type: none"> <li>• Natural pipeline – hazard to pipeline flyover. Gas line leakage and seepage to surface – gas fire (at least 3 locations: one in Wheatland Township – Sec. 22 &amp; 23)</li> <li>• Safety – living with the line for evermore</li> <li>• Sky Harbor Air Park – 70+ aircraft</li> </ul>	<ul style="list-style-type: none"> <li>• Electromagnetic fields – minimizing impact on human settlement (the World Health Organization’s review of EMF fields found a 200% increase in childhood leukemia with average exposure. The current ROW is not sufficient to protect against increased cancer risk</li> <li>• Health issues – EMF</li> <li>• Health issues not adequately addressed</li> <li>• Health issues (EMF, static electricity)</li> <li>• People living near the needed substation</li> </ul>	<ul style="list-style-type: none"> <li>• Negative impact on property values</li> <li>• Property value; loss of future property value</li> <li>• Substantial economic property loss (real estate values are 20 – 30% lower due to fear of EMF emissions and their associated health risks</li> <li>• Buffalo, elk, dairy and beef grazing under and near power lines. Products used for human consumption. What effect on humans and animals?</li> <li>• Property value</li> <li>• Aesthetics and noise</li> <li>• Property values – developed land &amp; undeveloped land</li> </ul>	<ul style="list-style-type: none"> <li>• One of the largest Buddhist Temples in U.S. – 5200 members with monastery on site for monks</li> </ul>

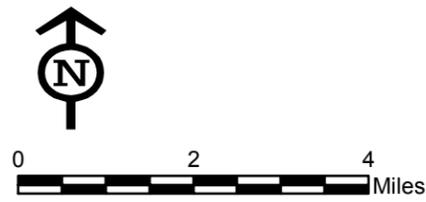
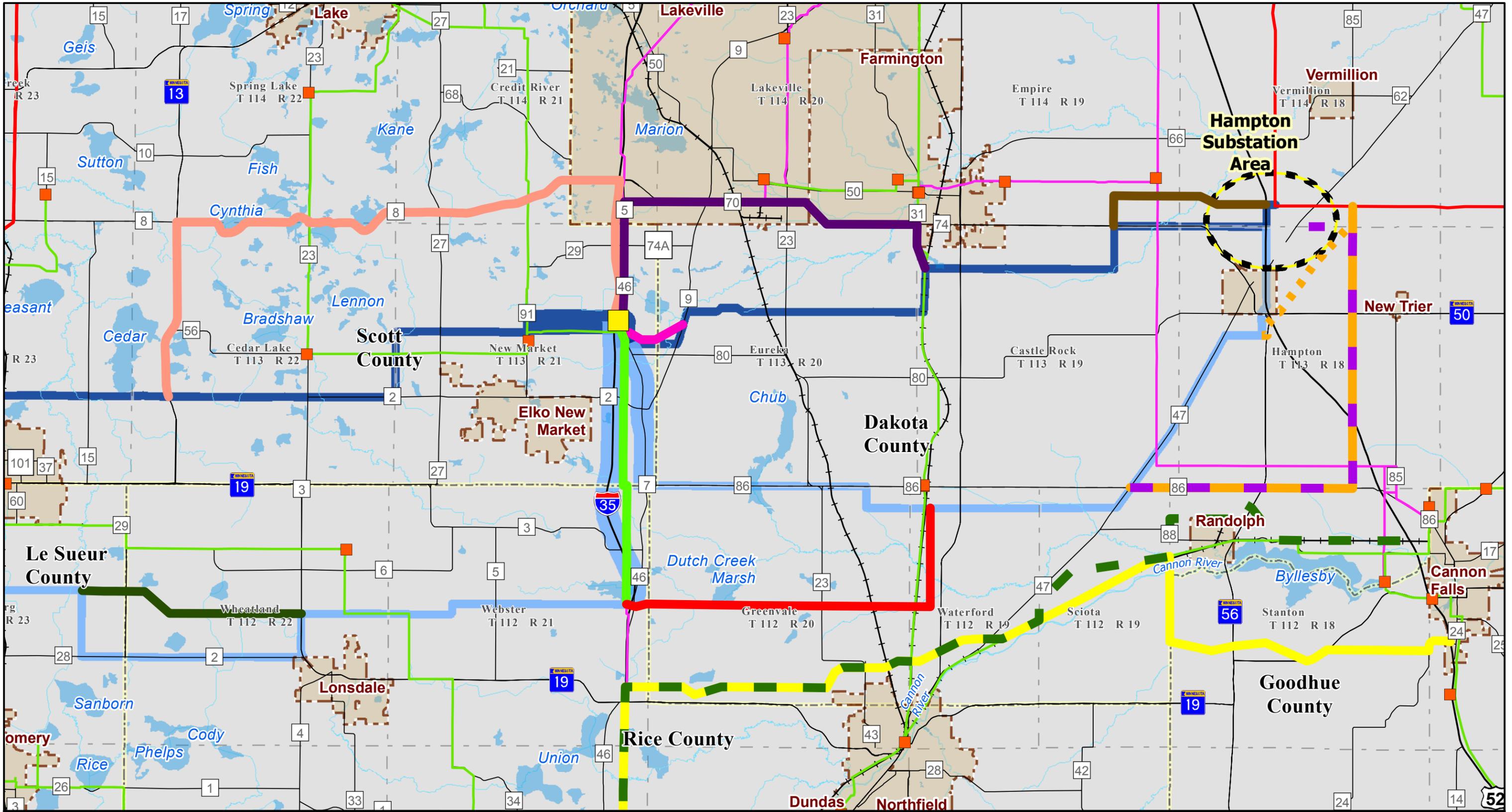
\* Not prioritized as “Important” but identified for evaluation in the EIS



## **Appendix E**

### **Maps of Alternatives**



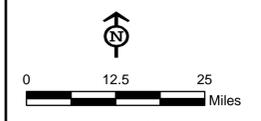
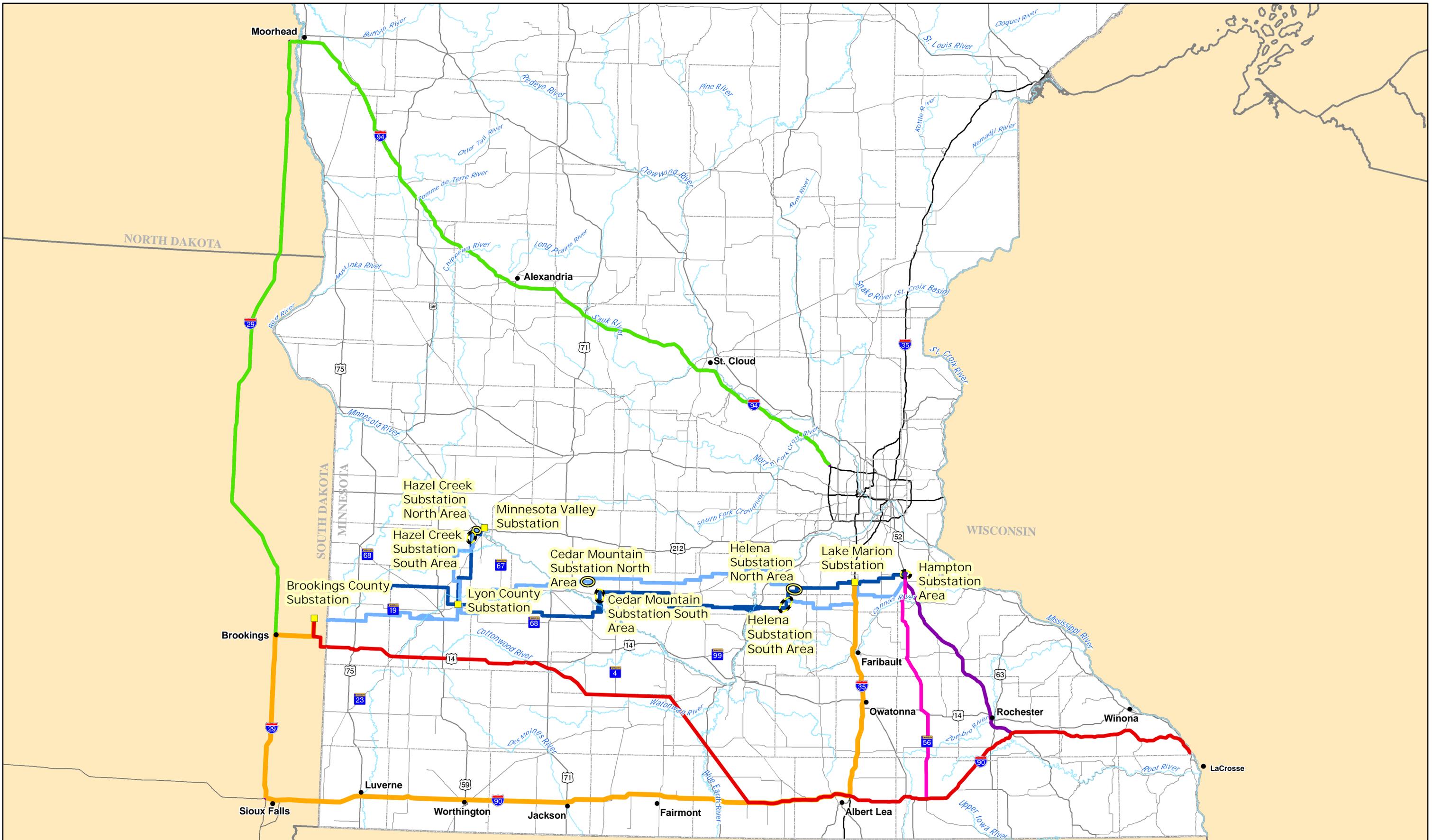


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|------------------------------------|----------|------------------------------------|--------|---|---------------------------|
| <b>Alternate Routes Identified</b> |          | <b>Existing Transmission Lines</b> |        | <b>Project Substations</b>              |                           |
| "Buddhist Temple"                  | NW_Alt1A | SE_Alt2                            | 69 kV  | Project Substations                     | Preferred Substation Area |
| NE_Alt2                            | NW_Alt1B | SE_Alt3                            | 115 kV | Alternate Substation Area               | Preferred Route           |
| NE_Alt3 "Diagonal"                 | NW_Alt1C | SW_Alt2                            | 230 kV | Applicant's Proposed Route Alternatives | Alternate Route           |
| NE_Alt3 "Right Angle"              | NW_Alt2  | NW_Alt3                            | 345 kV | Existing Substations                    |                           |

**Alternative Routes Identified**

**Lake Marion to Hampton  
Advisory Task Force**

Brookings County - Hampton  
345 kV Transmission Line



Legend	
<span style="color: yellow;">■</span> Project Substations	<span style="color: orange;">—</span> Suggested Alternate Route I-90 to I-35
<span style="border: 1px dashed black; padding: 2px;">■</span> Preferred Substation Area	<span style="color: green;">—</span> I-29 to I-94
<span style="border: 1px solid black; padding: 2px;">■</span> Alternate Substation Area	<span style="color: red;">—</span> US-14 to I-90
	<span style="color: purple;">—</span> I-90 to US-52
	<span style="color: pink;">—</span> I-90 to MN-56
	<span style="color: blue;">—</span> Applicant's Proposed Route Alternatives Preferred Route
	<span style="color: lightblue;">—</span> Alternate Route

Suggested Alternate Routes  
Advisory Task Force Meeting

## **Appendix F**

### **Impact Tables for Alternatives**



	Task Force	Lake Marion to Hampton							
	Suggested Alternate Route*	NE_Alt2	Preferred Route Section	NE_Alt3	Alternate Route Section	NW_Alt1A	Alternate Route Section	NW_Alt1B	Alternate Route Section
	Length (mi)	5.2	7.7	11.6	8.2	9.2	17.8	6.6	6.7
	Acres	633	917	1401	994	1119	2148	795	812
	Corridor ROW Sharing (mi)	2.4	7.7	7.8	6.9	3.8	17.2	6.6	6.7
	Percent of Corridor is ROW Sharing	46.0%	100.0%	67.4%	83.9%	41.1%	96.6%	100.0%	100.0%
Homes	Number of Homes in Route	13	19	44	33	14	92	30	18
	Number of Homes per Mile	2.5	2.5	3.8	4.0	1.5	5.2	4.6	2.7
Soils	Prime Farmland (acres)	235	282	829	821	237	651	130	131
	Percent of Prime Farmland	37.2%	30.8%	59.2%	82.6%	21.1%	30.3%	16.4%	16.2%
Crop and Grassland (GAP)	Crop Land (acres)	517	758	1173	698	828	1169	514	311
	Percent of Area Crop Land	81.7%	82.7%	83.7%	70.2%	74.0%	54.4%	64.6%	38.3%
	Grassland (acres)	64	122	179	227	211	553	169	285
	Percent of Area Grassland	10.1%	13.3%	12.8%	22.9%	18.8%	25.8%	21.3%	35.1%
Wetlands	Total Wetland (acres)	128	71	2	2	207	211	205	93
	Percent of Area Wetland	20.2%	7.8%	0.1%	0.2%	18.5%	9.8%	25.8%	11.5%
Environmental	Number of PWI crossed	1	0	0	0	1	15	10	8
	Number of Biodiversity (MCBS) Sites (all levels)	0	0	0	1	0	2	1	1
	Number of Biodiversity (MCBS) Sites (acres)	0	0	0	6.3	0	24.8	2.6	20.7

\* Route is 1000 foot corridor

\*\* Route is only calculated for displayed on maps

Preferred Route	Alternate Route	I-29 to I-94	US-14 to I-90	I-90 to I-35	I-90 to US52	I-90 to MN-56
237 mile	262 mile	419 mile	305 mile	306 mile	360 mile	331 mile

	Task Force	Lake Marion to Hampton									
	Suggested Alternate Route*	NW_Alt1C	Alternate Route Section	NW_Alt2	Prefered Route Section	NW_Alt3	Prefered Route Section	SE_Alt2**	SE_Alt3**	SW_Alt2	Prefered Route Section
	Length (mi)	12.1	8.2	10.7	9.0	1.5	1.9	28.3	26.7	18.2	12.0
	Acres	1466	994	1292	1080	181	220	3422	3234	2196	1450
	Corridor ROW Sharing (mi)	7.5	7.0	8.4	7.6	0.2	1.56	12.7	11.8	18.2	10.1
	Percent of Corridor is ROW Sharing	61.9%	84.8%	78.6%	84.4%	11.4%	83.2%	45.0%	44.0%	100.0%	83.7%
Homes	Number of Homes in Route	45	33	69	29	3	6	43	36	139	69
	Number of Homes per Mile	3.7	4.0	6.5	3.2	2.0	3.2	1.5	1.3	7.6	5.7
Soils	Prime Farmland (acres)	887	821	784	648	51	96	986	1134	551	318
	Percent of Prime Farmland	60.5%	82.6%	60.7%	60.0%	28.4%	43.6%	28.8%	35.1%	25.1%	21.9%
Crop and Grassland (GAP)	Crop Land (acres)	1234	698	782	842	102	140	2056	2475	1257	1106
	Percent of Area Crop Land	84.2%	70.2%	60.6%	78.0%	56.2%	63.9%	60.1%	76.5%	57.2%	76.3%
	Grassland (acres)	181	227	177	147	29	41	623	601	414	237
	Percent of Area Grassland	12.4%	22.9%	13.7%	13.6%	15.9%	18.8%	18.2%	18.6%	18.8%	16.4%
Wetlands	Total Wetland (acres)	1	2	122	157	66	44	144	127	233	210
	Percent of Area Wetland	0.1%	0.2%	9.4%	14.6%	36.3%	19.8%	4.2%	3.9%	10.6%	14.5%
Environmental	Number of PWI crossed	0	0	4	3	0	3	2	1	13	0
	Number of Biodiversity (MCBS) Sites (all levels)	0	1	0	0	0	0	7	3	1	0
	Number of Biodiversity (MCBS) Sites (acres)	0	6.3	0	0	0	0	89.2	13	4.9	0

\* Route is 1000 foot corridor

\*\* Route is only calculated for displayed on maps