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- **Minnesota Department of
Commerce**

**Freeport to St. Cloud Advisory
Task Force Report
Fargo to St. Cloud 345 kilovolt (kV)
Transmission Line**

PUC Docket No. ET2, E002/TL-09-1056

March 19, 2010

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Introduction

On October 1, 2009, Great River Energy and Xcel Energy (applicants) submitted a route permit application to the Minnesota Public Utilities Commission (Commission) for the Minnesota portion of a 345 kilovolt (kV) transmission line connecting a new Fargo, North Dakota area substation to the new Quarry Substation located west of St. Cloud, Minnesota (project). The proposed project is approximately 169 to 180 miles long, depending on the final route selection. The applicants have identified two potential routes and several route segment alternatives for the transmission line (See Appendix A for a map of the applicant-proposed alternatives).

On November 16, 2009, the Commission authorized the Department of Commerce, Office of Energy Security (OES) to establish and charge, as appropriate, an advisory task force (ATF) to assist OES staff in determining the scope of the environmental impact statement (EIS) to be prepared for the proposed project. The Freeport to St. Cloud ATF was charged with: (1) reviewing the route permit application, (2) identifying specific impacts and issues of local concern to be assessed in the EIS, and (3) identifying potential alternative transmission line routes to be assessed in the EIS (See Appendix B). The task force was asked to focus on the applicants' proposed deviation from the Hwy 94 Corridor between Freeport and St. Cloud.

On December 18, 2009, the OES appointed fifteen persons to the Freeport to St. Cloud ATF (See Appendix C).

Methodology

The Freeport to St. Cloud ATF met three times – January 22, February 4, and February 25, 2010. 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 additional people attended to listen to the discussion.

The first task of the ATF was to determine the impacts and issues 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 general impacts and issues and reviewed a detailed list of considerations based on Minnesota Rule 7850.4100 (see Appendix I for a copy of the rule).

At the second meeting, task force members reviewed and prioritized the general impacts and issues identified at the first meeting. Members were asked to vote as to which impacts and issues were most important. Task force members again reviewed the detailed list of considerations mentioned above. Task force members then took up the second part of their charge – identifying alternative routes for the transmission line. They broke into small “brainstorming” groups and identified alternative routes and route segments. The small groups then reported back to the entire task force.

At the third meeting, the task force reviewed the alternatives identified at the second meeting in context of the general impacts and issues and the more detailed considerations. The task force listed pros and cons of each alternative. Clarifications, corrections, and variations within a route were discussed.

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 online: <http://energyfacilities.puc.state.mn.us/resource.html?Id=25652>

Impacts and Issues to Evaluate

Task force members identified impacts and issues by responding to the following question: "What land use planning or other impacts and issues need to be considered in the evaluation of proposed transmission line routes?" The task force identified and prioritized seven impacts and issues to be evaluated in the EIS (See Appendix D).

Top priority impacts and issues to consider were:

- Design considerations (prioritization focused on using existing corridors or not adding new corridors)
- Impact on residents' public health and safety

Second priority impacts and issues to consider were:

- Environmental impacts
- Zoning impacts

Third priority impacts and issues to consider were:

- Economic impacts
- Historical implications

Other important impact and issues to consider were:

- Aesthetics
- Electronic interference

Identification and Review of Alternative Routes and Route Segments

The task force identified six alternative routes for consideration in the EIS. (See Appendix E for maps of the specific ATF generated alternatives). Detailed information on the alternative routes and route segments based on the list of considerations developed from Minnesota Rule 7850.4100 is available in Appendix F.

Task force members used their own unique knowledge of the area and other local documents in developing the alternative routes. A key document used was the Stearns County Comprehensive Plan. (See Appendix H, “Policy Areas” maps from Stearns County Comprehensive Plan Update, March 2008.)

The task force reviewed the alternatives generated by the ATF and the applicants’ proposed routes, and identified pros and cons for each. Additionally they discussed the pros and cons of each of the routes. This exercise was not intended to be a detailed analysis of each route but rather to determine if a route should be evaluated in the EIS. Pros and cons for each alternative (keyed to map names where appropriate), as well as task force discussion, are noted here:

Applicant preferred route

Pros

- Avoids the towns of Albany and Avon
- New routing area is separated from other existing lines and provides redundancy for electrical transmission

Cons

- Proliferation of new corridors, 42 percent of route uses new corridors
- Longest of three applicant routes, 48.3 miles; because of length, higher cost
[Note: Length of applicant routes: Preferred Route – 48 miles; Alternate Route A – 48 miles; Preferred Route Segment Alternative 1 – 44 miles. These routes are determined by applicant from the Quarry Substation area to where the Preferred Route and Alternate Route A converge west of Melrose and east of Sauk Center. This requires extending the Preferred Route Segment Alternative 1 west along the Preferred Route in order to make a true comparison.]
- Seventeen angle structures used at 90 degree turns of line; angle structures are three times the cost of tangent structures
- Long-term impact on St. Wendel tamarack bog (These include wetland fill impacts for footings and construction/maintenance access, as well as vegetation impacts from the removal of tamarack trees and other wetland vegetation.)
- Impact on native vegetation noted in Stearns County mapping; also lakes impacted
- Proliferation of environmental concerns including lakes, high value native vegetation, prairie grasses in area (Minnesota Department of Agriculture reseeding program – of native prairie grasses – in area along County Road 2). Long-term maintenance of the route corridor will require routine spraying of chemical defoliant to manage vegetation.
- Future development area for City of St. Joseph and Waite Park; land has been identified in comprehensive plan for development; land has been purchased and some infrastructure (sewer and water) has been put in place
- Impacts development area of Tressel Ridge in Albany Township
- Route crosses area of high rural population in St. Wendel Township; higher density on east side of township: people, small tract ownership of farms, and area plotted for development
- Route crosses orderly annexation area in St. Wendel Township west of St. Joseph and Waite Park

- Population growth potential area in St. Wendel Township west of St. Joseph and Waite Park; current homes within 1000 foot of center line for route – 75 identified by applicant with task force members noting some homes were missed or not counted; ATF member noted 105 homes identified as within 1000 foot center line for route in all of St. Wendel Township
- Area noted above in St. Wendel Township has a high concentration of prime farmland; ATF member noted that Stearns County Comprehensive Plan’s top priority is the preservation of prime farmland. ATF member noted that Brockway Township also had prime farmland but another member noted that prime farmland soils are primarily in the western half of Stearns County.
- Twenty-seven documented century farms are crossed by route
- Task force member noted that the townships of St. Wendel, St. Joseph, and Collegetown are the three most difficult areas to deal with because of all the demands on the area.

Applicant preferred route segment alternative

Pros

- Avoids towns of Avon and Albany (skirts southern border of Albany)
- New routing area is separated from other existing lines and provides redundancy for electrical transmission
- Shorter route than applicants’ preferred route
- Fewer homes impacted (within 1000 foot center line)

Cons

- Goes around and between many small lakes
- Crosses bog (This requires wetland fill impacts for footings and construction/maintenance access, as well as vegetation impacts from the removal of tamarack trees and other wetland vegetation.)
- Uses a number of angle structures, 90 degree turns of line; angle structures are three times the cost of tangent structures
- Proliferation of new corridors, 23 percent of route uses new corridors
- Higher number of residences per mile impacted; count identified at 224 residences
- Crosses 566 acres of NWI wetlands; 19 percent of these wetlands restorable (Long-term maintenance of the route corridor will require routine spraying of chemical defoliant in the wetland to manage vegetation.)

Applicant alternative route A

Pros

- Avoids town of Albany, Avon, Melrose and Freeport
- New routing area is separated from other existing lines and provides redundancy for electrical transmission
- Majority of route runs along County Road 17 (existing corridor)

Cons

- Skirts southern city limits of town of Holdingford, industrial area annexed to city
- Affects two center pivot irrigation systems, crosses Myers farm
- Affects two mile area west of County Road 3 by Holdingford; crosses ½ mile of lowland; crosses three farms in a one-mile run
- Proliferation of new corridors, 33 percent new right-of-way
- Ties into and follows area in St. Wendel Township north of St. Joseph and then between St. Joseph and Waite Park (high demand area with multiple land uses)
- Longest applicant route, 42 miles
- Skirts south side of Birch Lake state forest
- Impacts 24 documented century farms
- A number of corner structures needed to right-angle turns in line

ATF alternative route – Group 1, Alt 1 (Primarily I-94 corridor with partial underground)

Pros

- Follows existing right-of-way (Interstate 94) for much of route; ATF preferred route to be inside I-94 fence line
- Ten miles shorter than Applicant Preferred Route
- Underground through Avon (would be buried under Highway 54 approximately 2 miles)
- Would follow Highway 54 east of Avon
- Less environmental impact than applicant routes
- Follow Stearns County plan for economic development corridor
- Part of route would be underground to address issues in congested areas

Cons

- Contingent on ability and cost of going underground
- Length of underground line – up to 13 miles
- Concerns of being underground: ability to repair, cost of installation and repair, environmental impact of installation, right-of-way issues with installation
- Length of construction time to go underground
- Contingent on use of Interstate 94 corridor and approval from MnDOT and federal DOT

Suggestions for variations to ATF alternative route – Group 1, Alt. 1

- Ranking of underground locations discussed: through City of Avon; area close to St. Johns University as ATF alternative route rejoins I-94 corridor; and underground through Cities of Albany and Freeport.
 - ATF discussed the viability (primarily cost and disruption caused by installation) of placing up to 13 miles of transmission line underground. A member proposed prioritizing the critical areas where undergrounding would be most beneficial and studying the feasibility of these options. The ATF discussed the ranking of these locations to possibly limit the amount of miles the route would be underground but did not reach consensus on prioritization. In subsequent e-mail “discussions,” it was noted by an ATF member that several other members supported the ranking, but in that “discussion” on the topic another member opposed the ranking and noted others supported that position.

- ATF discussed following the existing 69 kV line where the ATF alternative route – Group 1, Alt. 1 veers from I-94 east of Avon into St. Joseph. This alteration would be above ground.

ATF alternative route – Group 1, Alt 2 (Line segment follows County Road 3 south from Applicant Alternative Route A in Holding Township into St. Joseph)

Pros

- Avoids St. Wendel bog (this statement was questioned)
- Avoids area in St. Wendel Township north of St. Joseph and then between St. Joseph and Waite Park (high demand area with multiple land uses)
- Shorter by one mile than Applicant Alternative Route A
- Avoids the towns of Albany, Avon and Freeport
- Less proliferation of new corridors, follows exist corridor for County Road 3

Cons

- Goes through areas of high population density than other routes
- Has many of the cons identified for the Applicant Alternative Route A (This route follows Applicant Alternative Route A until the eastern boundary of Holding Township and then follows County Road 3. It avoid the high demand area with multiple land uses in St. Wendel Township and between the city of St. Joseph and Waite Park)
- Skirts environment and/or scientific significant areas: Partch Woods, College of St. Benedict, and crosses St. Wendel bog system
- Environmental concerns when coming close to or crossing Calcareous Fen, Rich/Poor Fen, and Minerotrophic Tamarack Swamp

ATF alternative route – Group 2, Alt 1 (Line segment from Applicant Preferred Route Segment Alternative south of City of Albany, follows County Road 10 to Highway 12 east and then Highway 23 into St. Joseph and Waite Park)

Pros

- Avoids City of Albany
- Follows main trunk road systems, 99 percent follows existing right-of-way
- Crosses large open farm land with no or minimal impact on center pivot irrigation systems
- Follow Stearns County plan for economic development corridor
- Displaces less agriculture land than Applicant Preferred Route, approximately 500 acres less
- No overhead wires currently exist on County Road 10
- Fewer acres of wetlands impacted than Applicant Preferred Route, Applicant Preferred Route Segment Alternative, and Applicant Alternative Route A, less need to restore wetlands because fewer impacted

Cons

- Route length is longer by five miles (than Applicant Preferred Route Segment Alternative)
- No representation on ATF from some of the areas impacted by this alternative; specifically: Cities of Richmond, Cold Spring, and Rockwood (it was noted that some of these communities were invited to participate in this task force)
- Number of residents per mile is higher
- Lakes are skirted but none crossed
- Need to assess the impact on scientific areas east of Cold Spring

Suggestions for variations to ATF alternative route – Group 2, Alt. 1

- In the Cold Spring and Richmond areas: option for underground, short distance detours in this area to address concerns

ATF alternative route – Group 2, Alt 2

[ATF removed this route for consideration prior to any review]

ATF alternative route – Group 3, Alt 1 (Line segment from Applicant Preferred Route Segment Alternative south of Freeport following County Road 11 to County Road 23 then picking up County Road 42 to joining back up with the Applicant Preferred Routes Segments Alternative at County Road 9)

Pros

- Impact primarily large tract farmland
- Avoids town of Albany and Avon, goes around Farming
- Avoid a number of ecological systems, native plant areas, and wetlands

Cons

- Approximately 2 percent of line impact 50 acres of environmental areas consisting of biodiversity and native grasslands (from county biological survey)

ATF alternative route – Group 3, Alt 2 (Line from Applicant Preferred Route going south on County Road 237 which becomes County Road 12 to County Road 177 which goes into County Road 23 then follow County Road 42 into Applicant Preferred Route Segment Alternative just north of School Lake)

Pros

- Higher utilization of right-of-way of existing routes
- Impacts only large tract farms
- Impacts fewer wetlands, lakes and has less overall environmental impact
- Fewer residential areas impacted (need to develop option to avoid New Munich)

Cons

- Line goes through New Munich (need to develop option to avoid New Munich)

ATF alternative route – Group 4, Alt 1 (Line segment from Applicant Preferred Route going south on County Road 9 just north of Avon to Queens Road and following Queens Road to where it intersects with Interstate 94 and then following I-94 into St. Joseph)

Pros

- Shorter distance than Applicant Preferred Route
- High percentage of existing right-of-way used
- Fewer residents impacted than Applicant Preferred Route
- Fewer non-resident buildings impacted than Applicant Preferred Route
- Less agriculture land use and no center pivot irrigation systems impacted
- Less environmental impact specifically native plants and wetlands
- Fewer acres in 100 year flood plan than Applicant Preferred Route

Cons

- Crosses new site of Avon Township hall
- Interstate 94 concerns addressed earlier (density and approval from MnDOT and federal DOT)
- Skirts St. John’s University (goes on north side of highway)
 - Possible tweaks to place line underground or follow 69 kV line through this area (but 69 kV line route would impact bog and Collegeville town site)
- Crosses St. Benedicts woods
- Crosses Wobegon Trail
- Cons of Applicant Preferred Route west of where this alternative jogs south (County Road 9 north of Avon)
- Impacts Freeport Lake expansion area (along Applicant Preferred Route)

ATF Alternative Route - 400 kV DC transmission line

A task force member made a request of Xcel Energy to provide their rationale for not selecting as an alternative route the 400 kV DC transmission line. A letter, addressed to David Birkholz, Minnesota Office of Energy Security from Darrin Lahr, Xcel Energy, was provided to task force members explaining this rationale. The letter is attached in Appendix G.

Route Comparison

For the discussion on the various routes, alternative routes and/or route segments were considered in isolation. For a full comparison of these alternatives, they must be considered in the context of what they modify (usually an applicant-proposed route) and reviewed from where the alternative deviates from that route to where it rejoins the route. In this context, the pros and cons of route segments may need to be combined to get a complete review of the proposed segment.

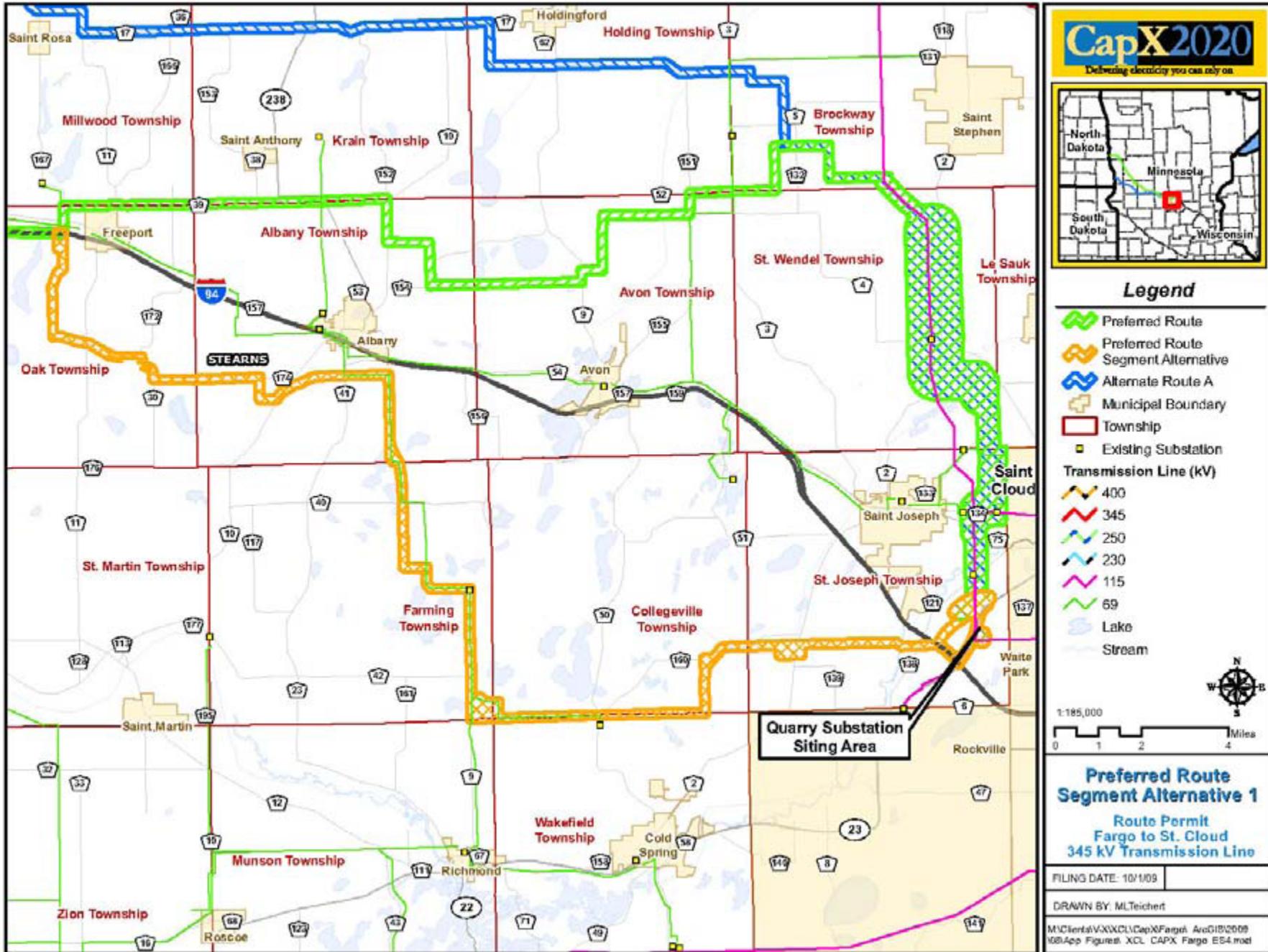
Conclusions

- 1. Study all of the alternative line route segments identified by the task force.** A good amount of effort and thought went into the creation of the task force's alternative transmission line route segments. The task force recommends that all alternatives be carried forward in the EIS process with the pros and cons identified by the task force.
- 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.

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Freeport to St. Cloud ATF - Project Overview Area





In the Matter of the Xcel Energy and Great River Energy Route Permit Application for a 345 kV Transmission Line Project from Fargo, ND to St. Cloud in Stearns County

FREERPORT TO ST. CLOUD ADVISORY TASK FORCE DECISION AND CHARGE PUC Docket E002, ET2/TL-09-1056

FREERPORT TO ST. CLOUD ADVISORY TASK FORCE AUTHORIZATION

The above-entitled matter has come before the Office of Energy Security (OES) Director for a decision on the appointment of an advisory task force (ATF) to advise the Public Utilities Commission (Commission) on the application by Xcel Energy and Great River Energy for a route permit for the Fargo to St. Cloud 345 kV Transmission Line Project (Project).

As authorized by the Commission, the OES Director is establishing an Advisory Task Force by this Order 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 Fargo to St. Cloud 345 kV Transmission Line Project. The particular area in question is where the Applicants' proposed routes deviate from the Hwy 94 corridor between Freeport and St. Cloud.

ATF members are being solicited, as required by Minn. Stat. 216E.08, Subpart 1, from the following affected governmental units:

- | | |
|----------|--------------|
| County | Stearns |
| City | Albany |
| City | Avon |
| City | Freeport |
| City | St. Anthony |
| City | St. Joseph |
| Township | Albany |
| Township | Avon |
| Township | Brockway |
| Township | Collegeville |
| Township | Farming |
| Township | Holding |
| Township | Krain |
| Township | Millwood |
| Township | Oak |
| Township | St. Joseph |
| Township | St. Martin |
| Township | St. Wendel |

The ATF will comprise no more than 12 local government members and up to three representatives of nongovernmental organizations.

OES herein charges the ATF members to:

1. Assist in determining specific impacts and issues of local concern that should be assessed in the EIS by adding detail to the draft Scoping Document;
2. Assist in determining potential route alternatives that should be assessed in the EIS.

ATF members will be 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 the Management Analysis Division of the Minnesota Management and Budget Office as engaged by OES staff.

The Freeport to St. Cloud ATF will expire upon issuance of the OES Director's EIS Scoping Decision.

THE DIRECTOR MAKES THE FOLLOWING ORDER

WHEREAS, the applicants submitted an application for a route permit for the Project on October 1, 2009; and

WHEREAS, Minn. Stat. 216E.08 provides for the establishment of an ATF to assist the Commission in carrying out its duties; and

WHEREAS, in its November 13, 2009, Order the Commission authorized OES to establish an ATF and develop a structure and charge for the ATF; and

WHEREAS, Minn. Stat. 216E.08 establishes that an ATF comprise at least one representative from each county and municipal corporation, and at least one town board member from each county in which a route is proposed to be located;

THEREFORE, The OES Director herein establishes the Freeport to St. Cloud Advisory Task Force, authorizes OES EFP to appoint members of the ATF and adopts the above determination with regard to its structure and charge.

Signed this 16th day of November, 2009

STATE OF MINNESOTA
DEPARTMENT OF COMMERCE
OFFICE OF ENERGY SECURITY


William Glahn, Director



Energy Facility Permitting

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December 18, 2009

The Minnesota Department of Commerce Office of Energy Security (OES) has selected the following individuals to serve as members on an Advisory Task Force (ATF) for the Fargo to St. Cloud 345 KV Transmission Line Project. The ATF will assist OES staff in developing the scope of the Environmental Impact Statement (EIS) and in determining specific impacts, issues of local concern and route alternatives that should be assessed in the EIS for the Freeport to St. Cloud segment of the project.

Freeport to St. Cloud Advisory Task Force

Member	Representing	eMail
Don Otte	Stearns County	don.otte@co.stearns.mn.us
John Greer	City of Albany	jgreer@hughesmathews.com
John Grutsch	City of Avon	johnyg@clearwire.net
Paul Hetland	City of Freeport	cityfrpt@albanytel.com
Ernie Schmit	City of Holdingford	mayor.eschmit@holdingfordmn.us
Dean Berckes	Albany Township	dberckes@albanytel.com
Richard Bresnahan	Avon Township	rbresnahan@csbsju.edu
William Otto	Farming Township	orchard@albanytel.com
Mark Stai	Holding Township	mstai@holdingford.k12.mn.us
Peter Welle	Oak Township	welldairy@hotmail.com
Matt Symalla	St. Joseph Township	mttsy@hotmail.com
Duane Scepaniak	St. Wendel Township	acornacres1@clearwire.net
Peter Dwyer	Avon Hills Initiative	pdwyer@osb.org
Scott Hylla	North Route Citizens	scott.hylla@sepracor.com

The ATF will meet three times, beginning January 22, 2010. The ATF will, through a facilitated process, discuss and make recommendations to the Director of the OES in accordance with its charge. The meetings are open for viewing to the public; however, participation in the discussions is limited to members of the ATF.

The ATF will expire upon completing the above charge or upon designation by the Director of the OES of the Scoping Decision for the EIS, whichever occurs first.

To learn more about the proposed project visit the project webpage at:

<http://www.energyfacilities.puc.state.mn.us/Docket.html?Id=25053>

Questions about the ATF should be directed to David Birkholz (david.birkholz@state.mn.us, 651.296.2878) or Raymond Kirsch (raymond.kirsch@state.mn.us, 651.296.7588), Department of Commerce, Office of Energy Security, 85 7th Place East, Suite 500, St. Paul, MN 55101. Facsimile 651.297.7891 (TTY relay service 800.627.3529).

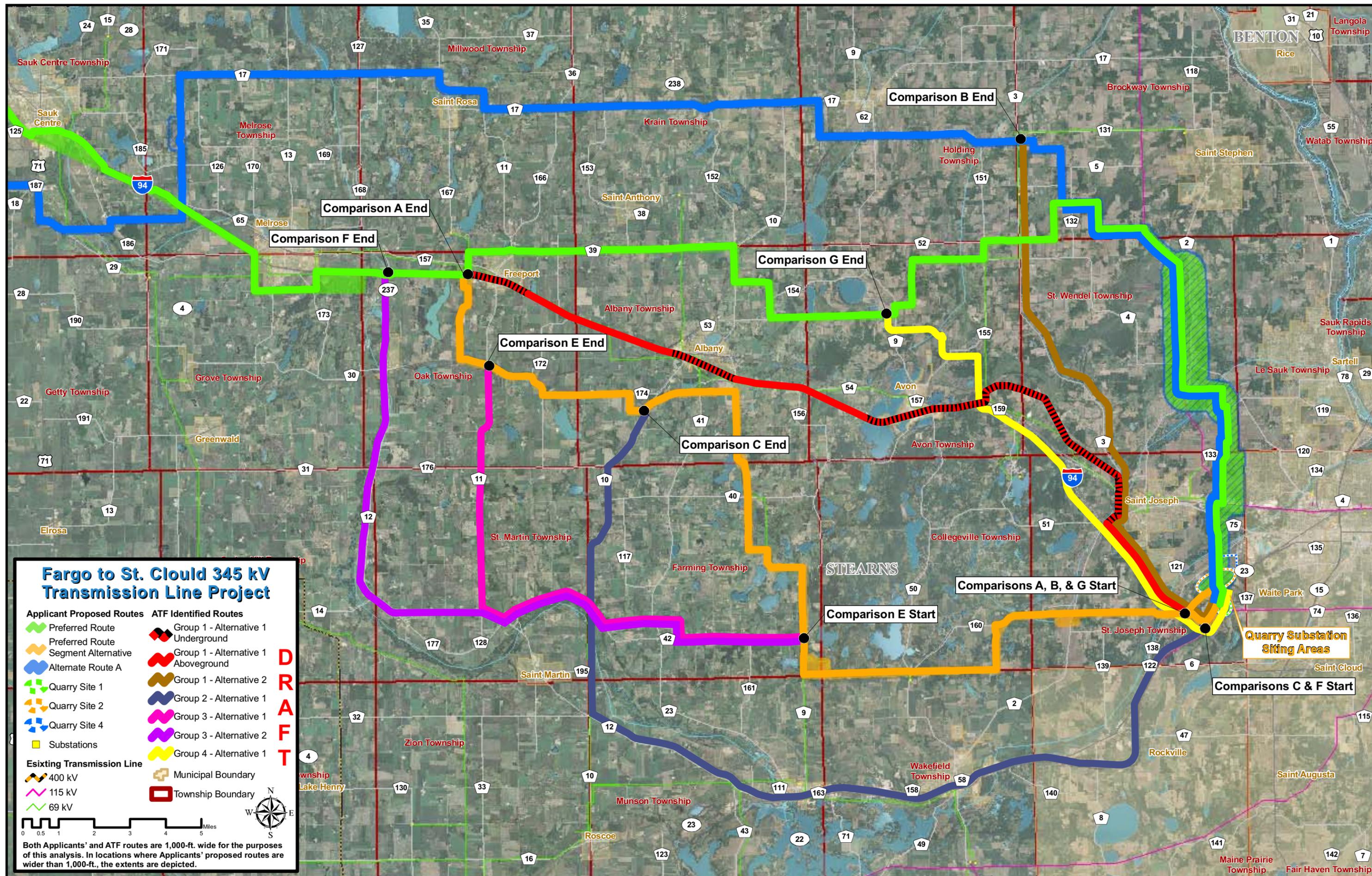
Appendix D

Freeport to St. Cloud Advisory Task Force

January 22 and February 4, 2010

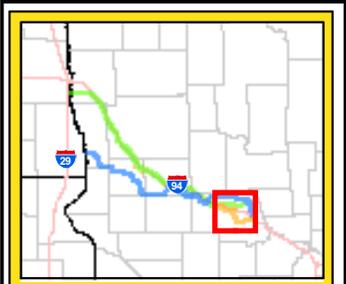
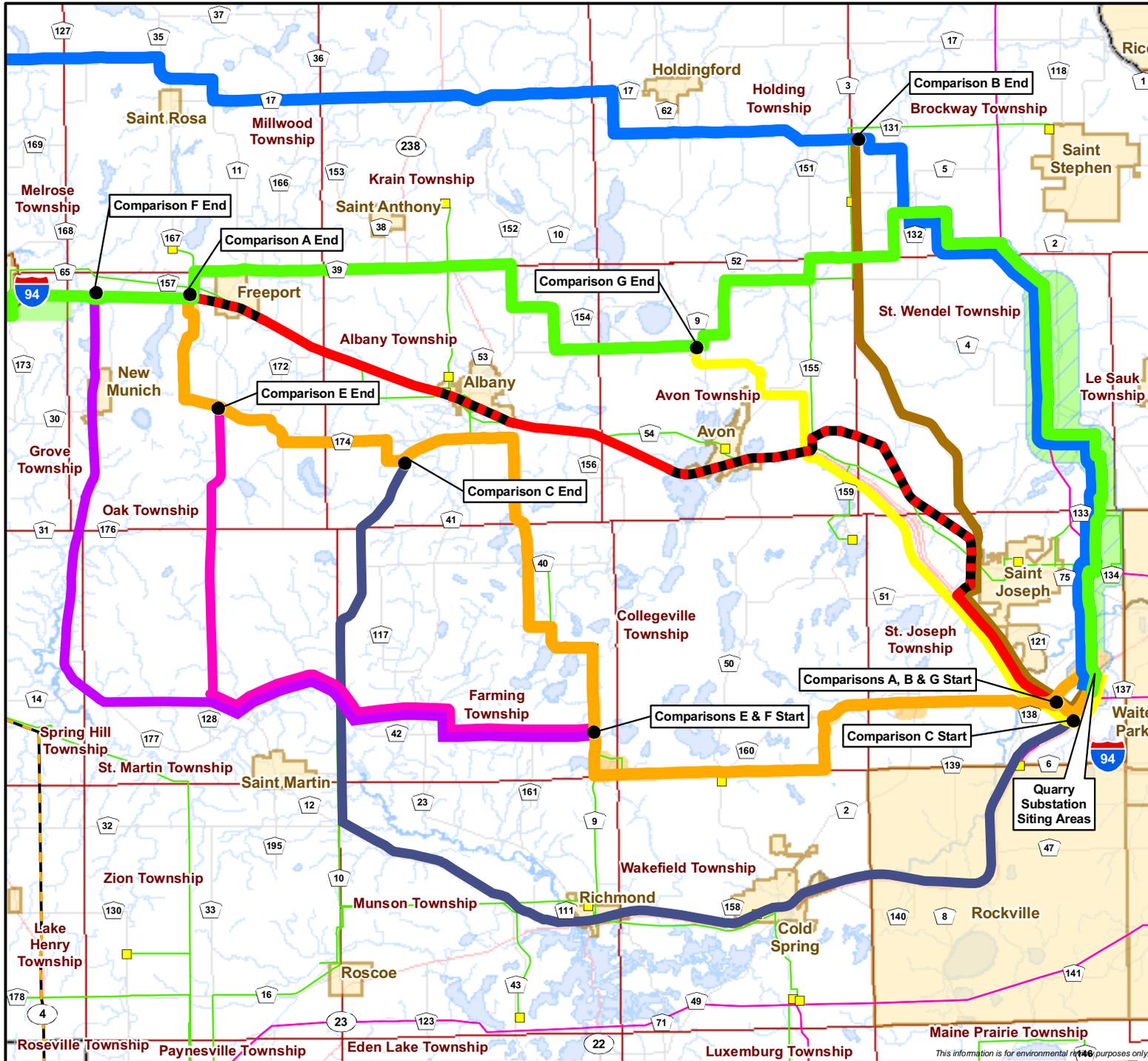
Identification of Impacts and Issues as prioritized - *What land use planning or other impacts and issues need to be considered in the evaluation of proposed transmission line routes and/or sub-station locations?*

Design considerations	Environmental impacts	Economic impact	Impacts on residents (direct and indirect)			Historical Implications	Zoning impacts
			Public health and safety	Aesthetics	Electronic interference		
<i>Top Priority Fourteen votes</i>	<i>Second Priority Five votes</i>	<i>Third Priority Three votes</i>				<i>Third Priority Two Votes</i>	<i>Second Priority Six votes</i>
<ul style="list-style-type: none"> • “State of the art” project: option to go underground and address aesthetics, some environmental concerns, public health and safety, impact on residents, and greater security from weather • <i>Follow existing public use corridors</i> • <i>Avoid proliferation of new corridors (Eleven of the 14 votes were for these two items in this category)</i> 	<ul style="list-style-type: none"> • Environmental Impacts: 150 ft. swath, trees, significant natural resources in the area – bogs, lakes, wetlands, woodlands; bio-impact survey • Least environmental impact • Avoid wetlands, flood plains and all environmentally sensitive areas • Preserve wetlands and woodlands • Wildlife; designated areas, wildlife survey, production areas, recreational areas 	<ul style="list-style-type: none"> • Avoid agriculture land with irrigation systems; loss of productive land, nuisance of electro-magnetic fields on ag operation • Irrigation potential • Avoid disrupting farmland by not criss-crossing farmland, only follow road right-of-ways • Minimize economic impact; preserve jobs and businesses, consider businesses ability to expand, preserve farmland, avoid impacts on farm operations 	<ul style="list-style-type: none"> • Impacts on residents, loss of homes and living next to the line • Public health and safety, electromagnetic fields, impacts on current or newer electronic devices, e. g. pacemakers • Health both human and animal; magnetic fields, electrical induction issue, stray voltage issue 	<ul style="list-style-type: none"> • Aesthetics, visual • Have a large buffer between power lines and residential dwellings • Large tract acres vs. small tract areas 	<ul style="list-style-type: none"> • TV and radio reception 	<ul style="list-style-type: none"> • Historical implications, century farms and others – churches, cemeteries • Century farms; 100 years in business, emotion, family farms, historical, heritage character • Large tract acres vs. small tract areas 	<ul style="list-style-type: none"> • Avoid city limits and defined/annexed potential city growth areas • Annexed future residential development along County Road 138 between Waite Park and County Road 121 • Southwest beltway corridor between Waite Park and St. Joseph cities • Affect on property value



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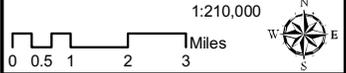
Both Applicants' and ATF routes are 1,000-ft. wide for the purposes of this analysis. In locations where Applicants' proposed routes are wider than 1,000-ft., the extents are depicted.



Legend

- Applicants' Proposed Routes**
 - Applicants' Preferred Route
 - Preferred Route Segment Alternative 1
 - Alternate Route A
- ATF Identified Routes**
 - Group 1 - Alternative 1 Underground
 - Group 1 - Alternative 1 Aboveground
 - Group 1 - Alternative 2
 - Group 2 - Alternative 1
 - Group 3 - Alternative 1
 - Group 3 - Alternative 2
 - Group 4 - Alternative 1
 - Substation
- Transmission Line**
 - 115 kV
 - 69 kV
 - Municipal Boundary
 - Township Boundary
 - Lakes
 - Streams

Both Applicants' and ATF routes are 1,000-ft wide for the purposes of this analysis. In locations where Applicants' proposed routes are wider than 1,000-ft., the extents are depicted.



Fargo to St. Cloud ATF Routes

DATE: 02/26/10 REVISED: 02/26/10
 DRAWN BY: MLTEICHERT
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This information is for environmental purposes only.

**CapX Fargo to St. Cloud 345 kV Transmission Line Project
Advisory Task Force (ATF)**

Comparison of Route Segment Alternatives Identified by Advisory Task Force and Comparable Route Segments Proposed by Applicant

			Comparison A		Comparison B		Comparison C		Comparison E		Comparison F	
			Group 1 - Alternative 1 ¹	Preferred Route Segment of Group 1 - Alternative 1	Group 1 - Alternative 2	Alternate Route A Comparison Segment of Group 1 - Alternative 2	Group 2 - Alternative 1	Preferred Route Segment Alternative 1 Comparison Segment of Group 2 - Alternative 1	Group 3 - Alternative 1	Preferred Route Segment Alternative 1 Comparison Segment of Group 3 - Alternative 1	Group 3 - Alternative 2	Preferred Route Segment Alternative 1 Comparison Segment of Group 3 - Alternative 1
			ATF	Applicants	ATF	Applicants	ATF	Applicants	ATF	Applicants	ATF	Applicants
	Route Length	(miles)	27	37	17	18	30	25	17	17	22	22
	Route Area	(acres)	3,313	4,494	2,102	2,173	3,643	3,049	2,083	2,008	2,740	2,667
	Length of Route Paralleling	(miles)	27	22	17	8	30	19	14	14	20	19
	Existing Rights-of-Way ²											
	Percent of Route Paralleling	(percent of length)	98%	58%	96%	44%	99%	74%	85%	85%	88%	87%
Residences and Non-Residential Buildings	Residences	(count)	189	75	98	23	189	60	40	29	140	35
	Residences per Mile	(count)	7.0	2.0	5.8	1.3	6.3	2.4	2.4	1.7	6.2	1.6
	Non-Residential Buildings	(count)	205	164	131	70	247	128	122	91	250	132
	Non-Residential Buildings per Mile	(count)	7.6	4.4	7.2	3.9	8.2	5.1	7.2	5.4	11.1	6.0
Agricultural	Agricultural Land Use / Zoning	(acres)	2,525	4,278	1,972	2,013	2,361	2,857	2,079	1,914	2,602	2,566
		(percent of area)	76%	95%	94%	93%	65%	94%	100%	95%	95%	96%
	Center Pivot Irrigation Systems	(count)	-	3	-	3	5	6	-	-	9	-
Environmental	Floodplain (100-year)	(acres)	37	116	37	116	181	30	14	-	79	-
		(percent of area)	1%	3%	2%	5%	5%	1%	1%	0%	3%	0%
	Lakes	(acres)	28	50	18	21	45	49	0	38	9	41
		(percent of area)	1%	1%	1%	1%	1%	2%	0%	2%	0%	2%
	MDNR Right-of-Way Prairies	(count)	-	-	-	-	-	-	-	-	-	-
	MCBS Site of Biodiversity	(acres)	16	128	90	128	96	61	50	-	50	-
	Significance	(percent of area)	0%	3%	4%	6%	3%	2%	2%	0%	2%	0%
	MDNR Prairie Bank Easements	(acres)	-	-	-	-	-	-	-	-	-	-
		(percent of area)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Minnesota Land Trust Easements	(acres)	-	-	30	1	-	-	-	-	-	-
		(percent of area)	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
	Native Plant Communities	(acres)	15	35	46	35	9	37	19	-	19	-
		(percent of area)	0%	1%	2%	2%	0%	1%	1%	0%	1%	0%
	NWI Wetlands	(acres)	372	726	261	436	336	566	203	370	161	417
		(percent of area)	11%	16%	12%	20%	9%	19%	10%	18%	6%	16%
	Restorable Wetlands	(acres)	245	658	120	458	336	475	367	335	253	381
		(percent of area)	7%	15%	6%	21%	9%	16%	18%	17%	9%	14%
	State Trail Crossings	(count)	-	-	-	-	1	-	-	-	-	-
	State Listed Species Occurrences	(count)	-	1	-	1	3	-	1	-	1	-
	State Wildlife Management Area	(acres)	-	-	-	-	-	16	-	16	54	16
	(percent of area)	0%	0%	0%	0%	0%	1%	0%	1%	2%	1%	
Stream Crossings	(count)	25	12	13	12	25	24	18	17	35	19	
USDA Conservation Reserve Program Land	(acres)	91	110	66	74	31	129	58	85	57	85	
	(percent of area)	3%	2%	3%	3%	1%	4%	3%	4%	2%	3%	
USFWS Easements	(acres)	-	-	29	-	-	-	-	-	-	-	
	(percent of area)	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	
Wooded Areas	(acres)	261	476	297	318	303	348	82	138	120	144	
	(percent of area)	8%	11%	14%	15%	8%	11%	4%	7%	4%	5%	

**CapX Fargo to St. Cloud 345 kV Transmission Line Project
Advisory Task Force (ATF)**

Comparison of Route Segment Alternatives Identified by Advisory Task Force and Comparable Route Segments Proposed by Applicant

			Comparison A		Comparison B		Comparison C		Comparison E		Comparison F	
			Group 1 - Alternative 1 ¹	Preferred Route Comparison Segment of Group 1 - Alternative 1	Group 1 - Alternative 2	Alternate Route A Comparison Segment of Group 1 - Alternative 2	Group 2 - Alternative 1	Preferred Route Segment Alternative 1 Comparison Segment of Group 2 - Alternative 1	Group 3 - Alternative 1	Preferred Route Segment Alternative 1 Comparison Segment of Group 3 - Alternative 1	Group 3 - Alternative 2	Preferred Route Segment Alternative 1 Comparison Segment of Group 3 - Alternative 1
			ATF	Applicants	ATF	Applicants	ATF	Applicants	ATF	Applicants	ATF	Applicants
Other	Aggregate Source	(count)	3	-	-	-	2	-	-	-	-	-
	FCC Antenna Structures	(count)	1	2	-	-	-	-	-	-	-	-
	Daycares	(count)	2	-	3	-	9	-	-	-	2	-
	Landfills / Dumps	(count)	-	-	-	-	4	-	-	-	-	-
	Hospitals	(count)	-	-	-	-	-	-	-	-	1	-
	Population Center	(acres)	552	47	42	-	698	35	-	35	129	40
		(percent of area)	17%	1%	2%	0%	19%	1%	0%	2%	5%	2%
	Recreational / Open Space / Park Zoning / Land Use	(acres)	66	56	27	-	153	34	4	44	8	46
		(percent of area)	2%	1%	1%	0%	4%	1%	0%	2%	0%	2%
	Residential Zoning / Land Use	(acres)	208	0	34	0	241	32	-	17	-	17
(percent of area)		6%	0%	2%	0%	7%	1%	0%	1%	0%	1%	
Cultural Resources	Archaeological Sites	(count)	-	-	-	1	8	1	-	1	5	1
	Historical Sites	(count)	5	12	1	-	5	-	-	8	-	1
	National Register of Historic Places Sites	(count)	1	1	-	-	3	-	-	-	-	-

Note:

1. Route Alternative 1 as identified by Group 1 of the ATF includes 13 miles of undergrounding. To be consistent with the other route options, the standard 1,000-ft. route width was maintained for comparison purposes. Additionally, the underground segments have not been reviewed for specific environmental impacts associated with undergrounding, constructability, or feasibility.
2. The Lake Wobegon Trail is included as an existing right-of-way for the purposes of this analysis.
3. Presence of a feature within a route only indicates the potential for impact to the feature. Actual impacts to the feature cannot be determined until an alignment is identified and final engineering is performed.
4. Only those features that occur within at least one route, either Applicant or ATF, are shown in this table.
5. Both Applicant proposed and ATF identified routes are 1,000 feet in width for the purposes of this analysis.

**CapX Fargo to St. Cloud 345 kV Transmission Line Project
Advisory Task Force (ATF)**

Comparison of Route Segment Alternatives Identified by Advisory Task Force and Comparable Route Segments Proposed by Applicant

			Comparison G	
			Group 4 - Alternative 1	Preferred Route Comparison Segment of Group 4 - Alternative 1
			ATF	Applicants
	Route Length	(miles)	15	23
	Route Area	(acres)	1,825	2,743
	Length of Route Paralleling	(miles)	14	10
	Existing Rights-of-Way ²			
	Percent of Route Paralleling	(percent of length)	95%	46%
Residences and Non-Residential Buildings	Existing Rights-of-Way ²			
	Residences	(count)	30	39
	Residences per Mile	(count)	2.0	0.6
	Non-Residential Buildings	(count)	53	100
Agricultural	Non-Residential Buildings per Mile	(count)	3.5	4.3
	Agricultural Land Use / Zoning	(acres)	1,549	2,565
		(percent of area)	85%	93%
Environmental	Center Pivot Irrigation Systems	(count)	-	3
	Floodplain (100-year)	(acres)	37	116
		(percent of area)	2%	4%
	Lakes	(acres)	23	29
		(percent of area)	1%	1%
	MDNR Right-of-Way Prairies	(count)	-	-
	MCBS Site of Biodiversity	(acres)	57	128
	Significance	(percent of area)	3%	5%
	MDNR Prairie Bank Easements	(acres)	-	-
		(percent of area)	0%	0%
	Minnesota Land Trust Easements	(acres)	-	-
		(percent of area)	0%	0%
	Native Plant Communities	(acres)	29	35
		(percent of area)	2%	1%
	NWI Wetlands	(acres)	257	500
		(percent of area)	14%	18%
	Restorable Wetlands	(acres)	149	467
		(percent of area)	8%	17%
	State Trail Crossings	(count)	-	-
	State Listed Species Occurrences	(count)	1	1
	State Wildlife Management Area	(acres)	-	-
		(percent of area)	0%	0%
	Stream Crossings	(count)	11	15
	USDA Conservation Reserve Program Land	(acres)	25	77
		(percent of area)	1%	3%
	USFWS Easements	(acres)	-	-
		(percent of area)	0%	0%
Wooded Areas	(acres)	286	382	
	(percent of area)	16%	14%	

**CapX Fargo to St. Cloud 345 kV Transmission Line Project
Advisory Task Force (ATF)**

Comparison of Route Segment Alternatives Identified by Advisory Task Force and Comparable Route Segments Proposed by Applicant

			Comparison G	
			Group 4 - Alternative 1	Preferred Route Comparison Segment of Group 4 - Alternative 1
			ATF	Applicants
Other	Aggregate Source	(count)	-	-
	FCC Antenna Structures	(count)	-	-
	Daycares	(count)	1	-
	Landfills / Dumps	(count)	-	-
	Hospitals	(count)	-	-
	Population Center	(acres)	31	-
		(percent of area)	2%	0%
	Recreational / Open Space / Park Zoning / Land Use	(acres)	29	19
		(percent of area)	2%	1%
	Residential Zoning / Land Use	(acres)	26	0
(percent of area)		1%	0%	
Cultural Resources	Archaeological Sites	(count)	-	-
	Historical Sites	(count)	-	-
	National Register of Historic Places Sites	(count)	-	-

Note:

1. Route Alternative 1 as identified by Group 1 of the ATF includes 13 miles of undergrounding. To be consistent with the other route options, the standard 1,000-ft. route width was maintained for comparison purposes. Additionally, the underground segments have not been reviewed for specific environmental impacts associated with undergrounding, constructability, or feasibility.
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February 24, 2010

David Birkholz
Minnesota Office of Energy Security
85 7th Place E., Suite 500
St. Paul, Minnesota 55101-2198

Re: Paralleling the +/-400 kV DC line

Mr. Birkholz:

At the February 4, 2010 Avon area Advisory Task Force meeting a question was raised about the possibility of paralleling the +/-400 kV DC line. The Applicants were asked to provide an overview as to why following the DC line was not selected.

When developing the proposed routes for the Fargo-St. Cloud 345 kV Project ("Project"), the Project Team evaluated the potential to parallel existing transmission line corridors. One of those transmission line corridors is the +/- 400 DC line connecting the Coal Creek Station in Underwood, North Dakota, to the Dickinson Converter Station near Delano, Minnesota, that was constructed in the late 1970s ("DC Line"). The 435-mile DC line heads generally in a southeast direction from Coal Creek, passing far south of Fargo near the South Dakota border and then toward the Twin Cities south of Alexandria and west of St. Cloud until reaching the Delano area.

The Project Team reviewed the DC Line corridor and determined it was not a route alternative to be carried forward for a number of reasons including, but not limited to the following:

- System reliability would be reduced if the DC Line corridor were selected. Corridor sharing works well when two transmission lines serve different purposes. For example, transmission lines that are intended to move power short distances are more appropriate for sharing with transmission lines that are intended to move power medium or long distances. In this instance if the DC Line corridor were followed, the Fargo-St. Cloud 345 kV transmission line and the DC Line would be the two highest voltage and highest megawatt rated transmission facilities linking Minnesota and North Dakota aligned in a single corridor. Overall system reliability is enhanced when transmission facilities are located in diverse geographic areas. Reliability is reduced when facilities are congregated in close proximity to each other. This is particularly true for the high voltage facilities that comprise the backbone of regional transmission system serving Minnesota and the surrounding region. The more common rights-of-way are propagated, particularly involving high voltage facilities, the more likely it becomes that an outage involving multiple facilities could occur due to a single event. From a system planning perspective it becomes necessary to plan for the loss of both

facilities, therefore no additional system capacity or redundancy would be gained. For transmission lines with a similar purpose, routes that are more geographically distant from each other will provide the most reliability benefit.

- The DC Line corridor would not meet the Project need of interconnecting at Fargo, Alexandria and St. Cloud absent significant additional length of the proposed 345 kV transmission line. The Minnesota Certificate of Need Order requires the new 345 kV line to connect at substations in these communities. At least 60 miles would be added to the overall length of the Project if the DC Line corridor, which would still be required to interconnect in these areas, were considered.
- From an environmental perspective, there are a collective number of sensitive features that occur within immediate proximity (less than 300 feet) of the DC Line, in addition to this corridor diagonally traversing active agricultural lands. The DC Line traverses multiple Waterfowl Production Areas administered by the U.S. Fish and Wildlife Service. At least one calcareous fen is located within 300 feet of the DC Line. Various other environmental features occur within immediate proximity of the DC Line corridor and include, for example, various forms of conservation easements or lands managed for conservation. Further, while it was previously identified that the DC Line diagonally traverses agricultural lands, its general configuration also involves a large number of angle structures. As a result of these considerations, the Project Team perceived the corridor as one that would lead to a substantial increase in agricultural and environmental impacts if the proposed 345 kV line were to be co-located with the existing DC Line.

The Applicants appreciate the opportunity to provide additional insight on the issues to be considered when developing transmission line routes.

Sincerely,

A handwritten signature in black ink, appearing to read "Darrin Lahr". The signature is fluid and cursive, with the first name "Darrin" and last name "Lahr" clearly distinguishable.

Darrin Lahr
Supervisor, Siting and Land Rights
Xcel Energy



Policy Areas

Legend

Animal Units

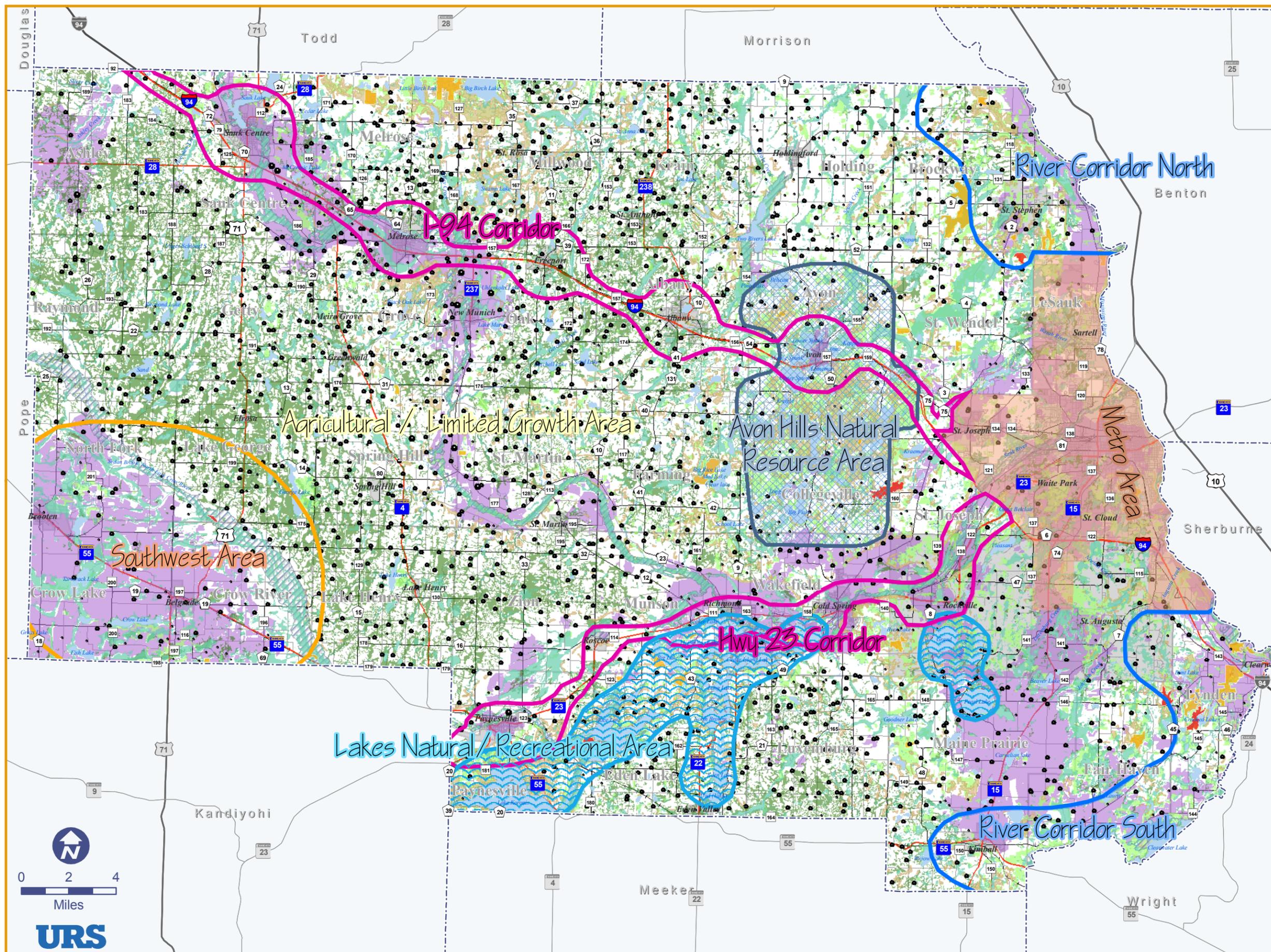
- 10 - 50
- 51 - 100
- < 1,000

- Outstanding Native Plant Community
- High Value Native Plant Community
- Wetland
- ▨ 100 Year Floodplain
- Highly Erodible Soils
- Wooded Areas > 5 acres
- Prime Farmland Soils
- High Nitrate Probability

March 2008

Stearns County Comprehensive Plan Update

Figure 3.3



7850.4100 FACTORS CONSIDERED.

In determining whether to issue a permit for a large electric power generating plant or a high voltage transmission line, the commission shall consider the following:

- A. effects on human settlement, including, but not limited to, displacement, noise, aesthetics, cultural values, recreation, and public services;
 - B. effects on public health and safety;
 - C. effects on land-based economies, including, but not limited to, agriculture, forestry, tourism, and mining;
 - D. effects on archaeological and historic resources;
 - E. effects on the natural environment, including effects on air and water quality resources and flora and fauna;
 - F. effects on rare and unique natural resources;
 - G. application of design options that maximize energy efficiencies, mitigate adverse environmental effects, and could accommodate expansion of transmission or generating capacity;
 - H. use or paralleling of existing rights-of-way, survey lines, natural division lines, and agricultural field boundaries;
 - I. use of existing large electric power generating plant sites;
 - J. use of existing transportation, pipeline, and electrical transmission systems or rights-of-way;
 - K. electrical system reliability;
 - L. costs of constructing, operating, and maintaining the facility which are dependent on design and route;
 - M. adverse human and natural environmental effects which cannot be avoided;
- and
- N. irreversible and irretrievable commitments of resources.

Statutory Authority: *MS s 116C.66; 216E.16*

History: *27 SR 1295; L 2005 c 97 art 3 s 19*

Posted: *September 18, 2009*