



*Xcel Energy - North
Transmission Plans and Updates*

prepared for
Wholesale Customer
Appreciation Conference

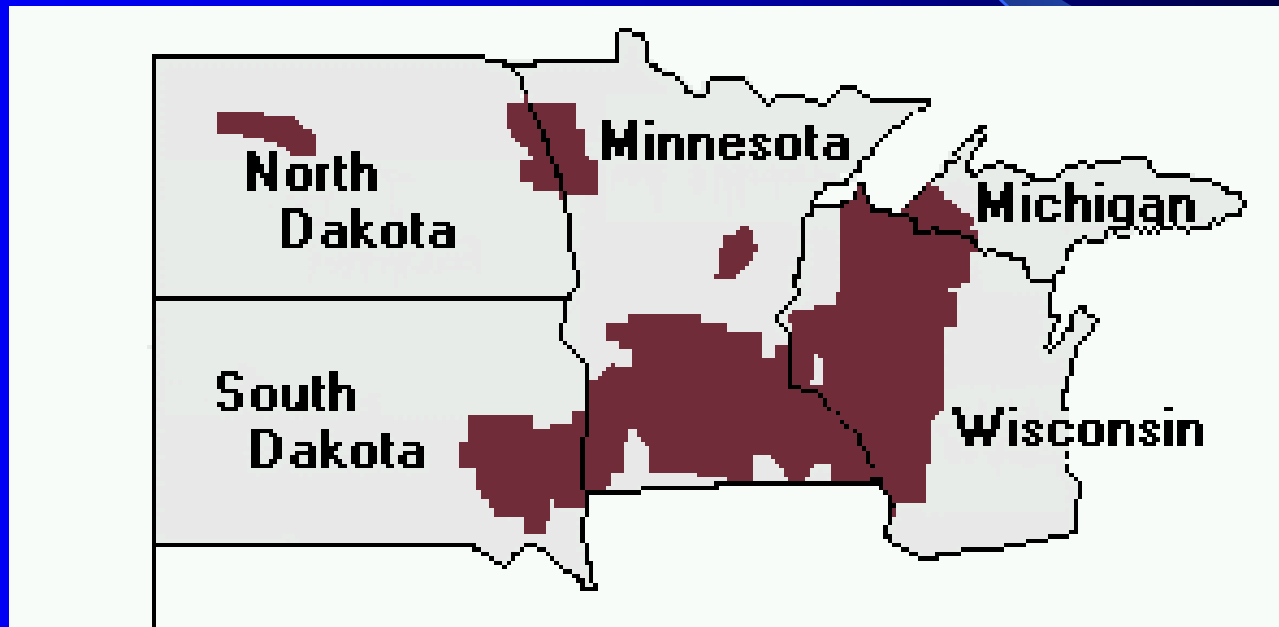
May 11, 2006

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Manager, Siting & Land Rights
Xcel Energy - North*

Presentation Outline

- Service Territory / Geographic Focus
- New Projects - Transmission / Substation
- Major Projects
 - Southwest Minnesota Wind
 - BRIGO
 - MN-WI 345 kV Rebuild
 - Chisago
 - CapX 2020
- New Legislative Initiatives

Xcel Energy - North Service Territory





Overview - New Projects

Regulatory Approvals / Land Rights Acquisition

Total transmission line projects: 29*

Total substation projects: 23*

Total miles: 850

*Some of these projects are rebuilds, some are new

Major Projects

- Southwest Minnesota Wind
- BRIGO Project
- 345kV Rebuild
- Chisago
- CapX 2020

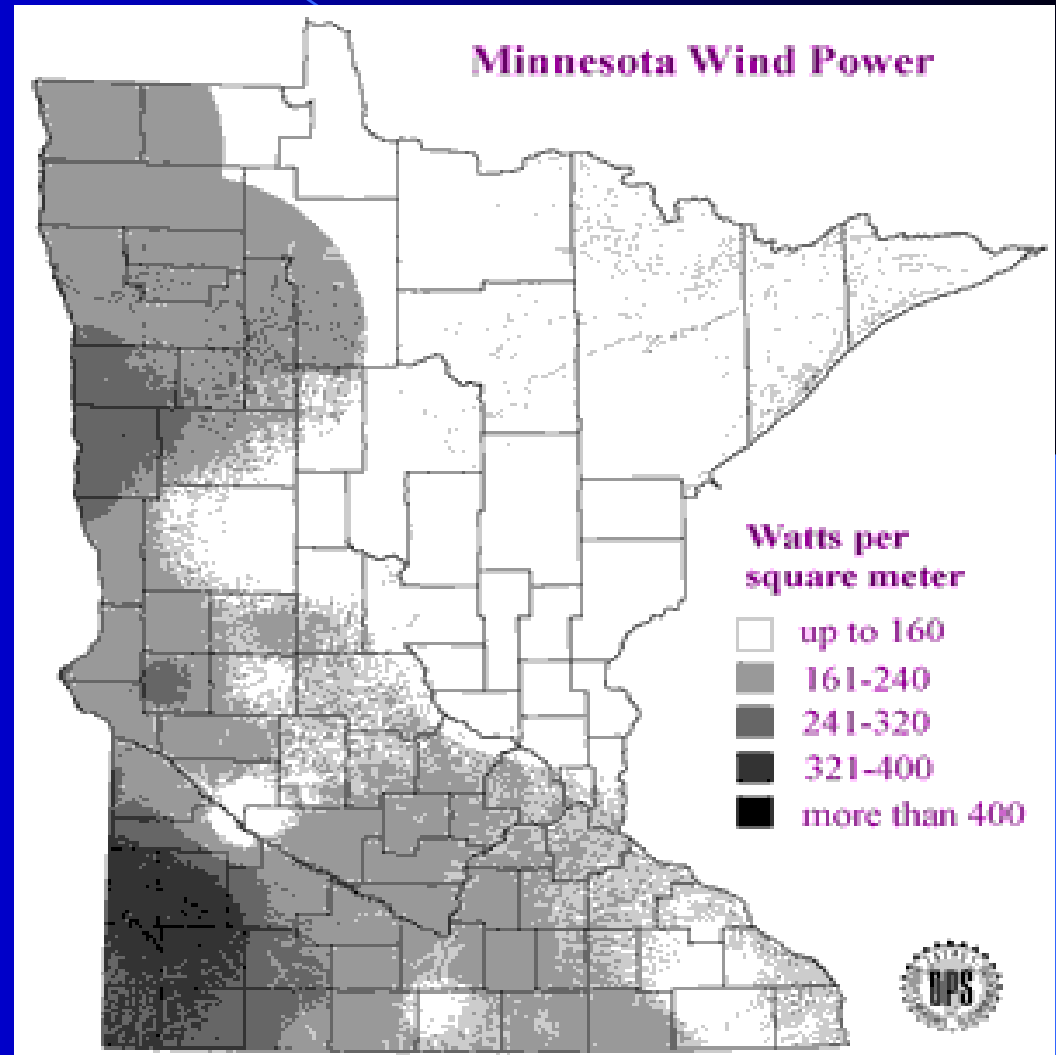
Southwest Minnesota Wind Energy Development

Largest wind energy development outside of California - key developers: FPL, enXco, PPM

Over 500 MW of installed wind turbine capacity - approximately 500 turbines

850 MW of Power Purchase Agreements signed

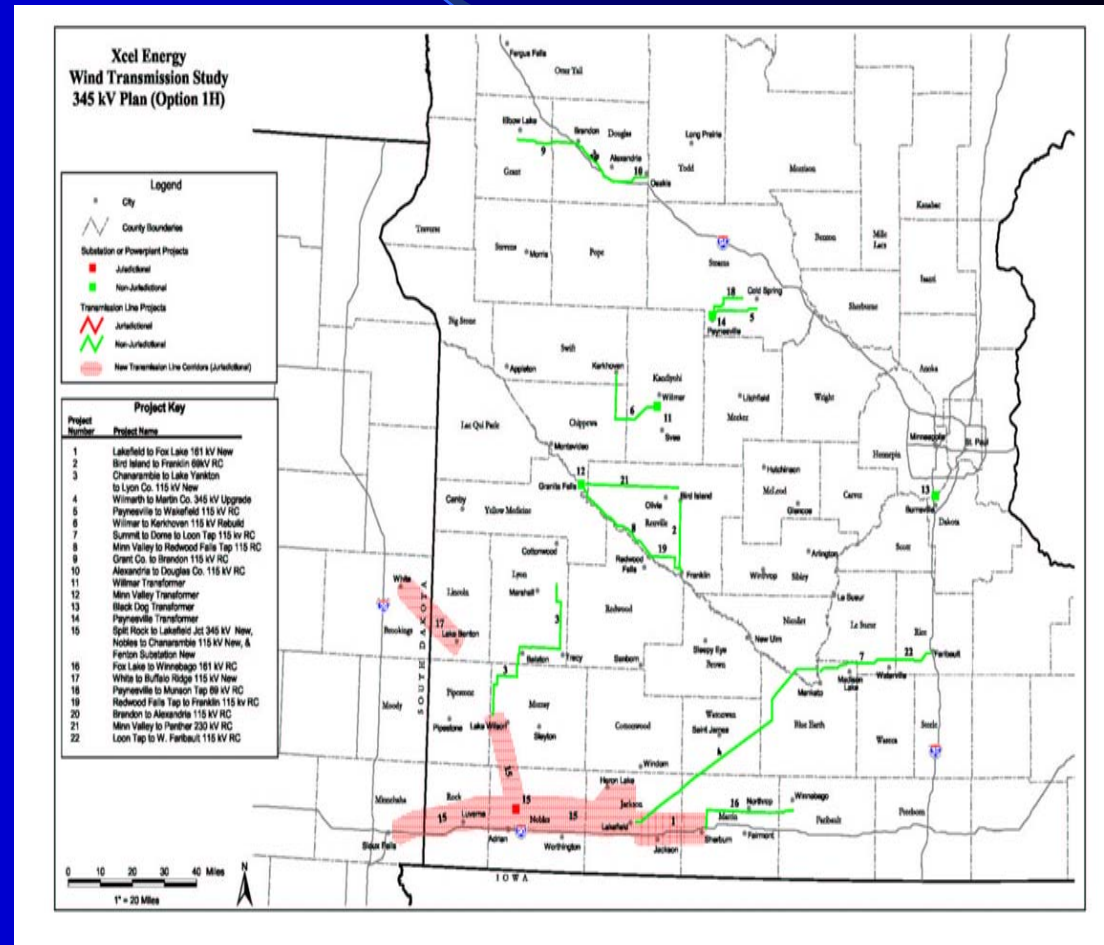
Another 400+ MW in competitive bid process currently - anticipate 1125 MW by 2010



Southwest Minnesota Wind Transmission Project

Severely constrained transmission outlet capacity requires significant new infrastructure

Near-term projects planned to achieve outlet capacity of 825 MW - 22 projects in total



SW MN Transmission Project (cont.)

501 Total Miles of Transmission

Xcel Total – 423 Miles

	Miles		
	Total	Xcel	Others
New lines, new ROW	209	209	0
Rebuilds of Existing Lines	192	154	38
Upgrades of Existing Lines	100	60	40

27 Substations Impacted

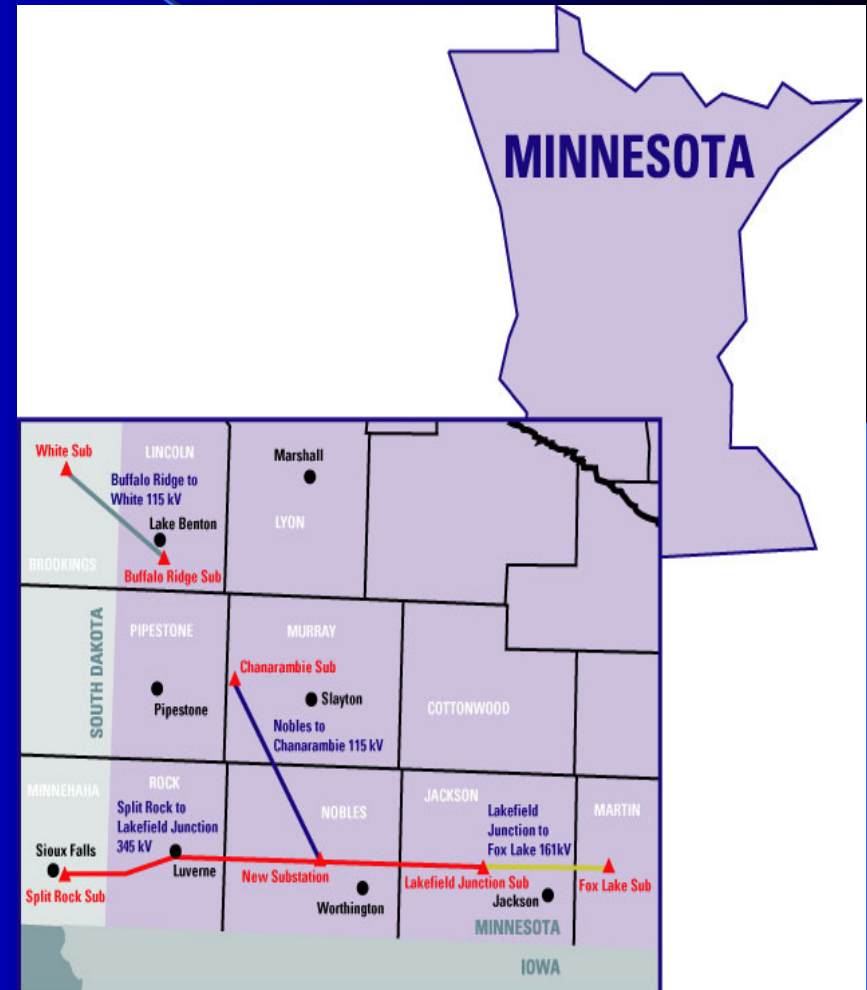
	Total	Xcel	Others
New subs	8	8	0
Modified subs	19	11	8



SW MN Transmission Project (cont.)

4 Major Projects

- Lakefield Junction to Fox Lake
161kV - 25 miles - in service
2006
- Split Rock to Lakefield Junction
345kV - 94 miles - in service
2007
- Nobles to Chanarambie 115kV -
30 miles - in service 2007
- Buffalo Ridge to White 115kV -
26 miles - in service 2007



SW MN Transmission Project (cont.)

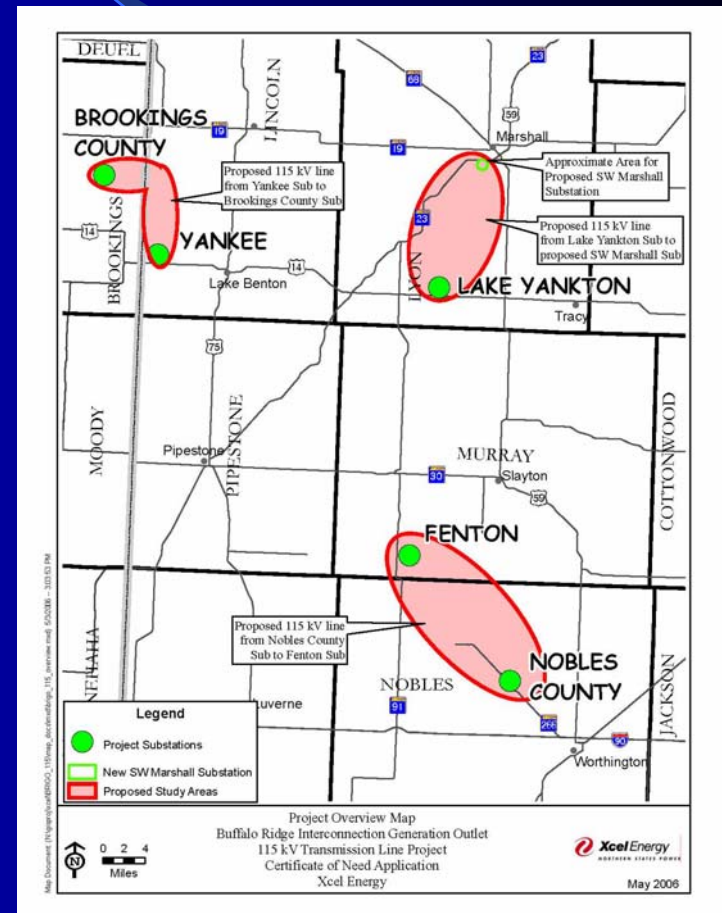
Status

- Lakefield Jct. - Fox Lake
 - In construction
 - Complete Fall 2006
- Split Rock - Lakefield Jct. 345kV
 - EQB approval June 2005
 - SD Permit expected Summer 2006
 - Construction start expected June 2006
- Buffalo Ridge - White
 - EQB route permit March 2005
 - SD permit approval expected June 2006
 - Western Area Power Administration approval expected July 2006
- Right-of-Way acquisition started in 2005

BRIGO Projects

Buffalo Ridge Incremental Generation Outlet

- Three 115kV projects to increase transmission system wind outlet capability to over 1000 MW
- Certificate of Need -filing Summer 2006
- Route Permit filing - specific dates not yet determined



345kV Rebuild

MN / WI

- Structure/Insulator replacement
- 3 line sections - Prairie Island to Adams (MN), Eau Claire to King, Eau Claire to Rocky Run
- 2 PSCW Certificate of Authority applications: approved 9/05 and 1/06
- Several hundred temporary easements required
- This line is critical to keep in service - all work to be done with conductors energized





02/10/2006





Chisago

Minnesota: 69kV & 115kV - Existing Right of Way from Lawrence Creek to Chisago

Wisconsin: 161kV & 69kV - Double Circuit from St. Croix to Apple River Substation

CPCN Approved in Wisconsin June 2001

Certificate of Need in Minnesota to be filed Fall 2006

*CapX 2020 Transmission Plan:
Realizing the Vision*

CapX = Capacity Expansion

Background



GREAT RIVER
ENERGY®
A Division of Energy Company



Midwest
Municipal
Transmission
Group



CapX

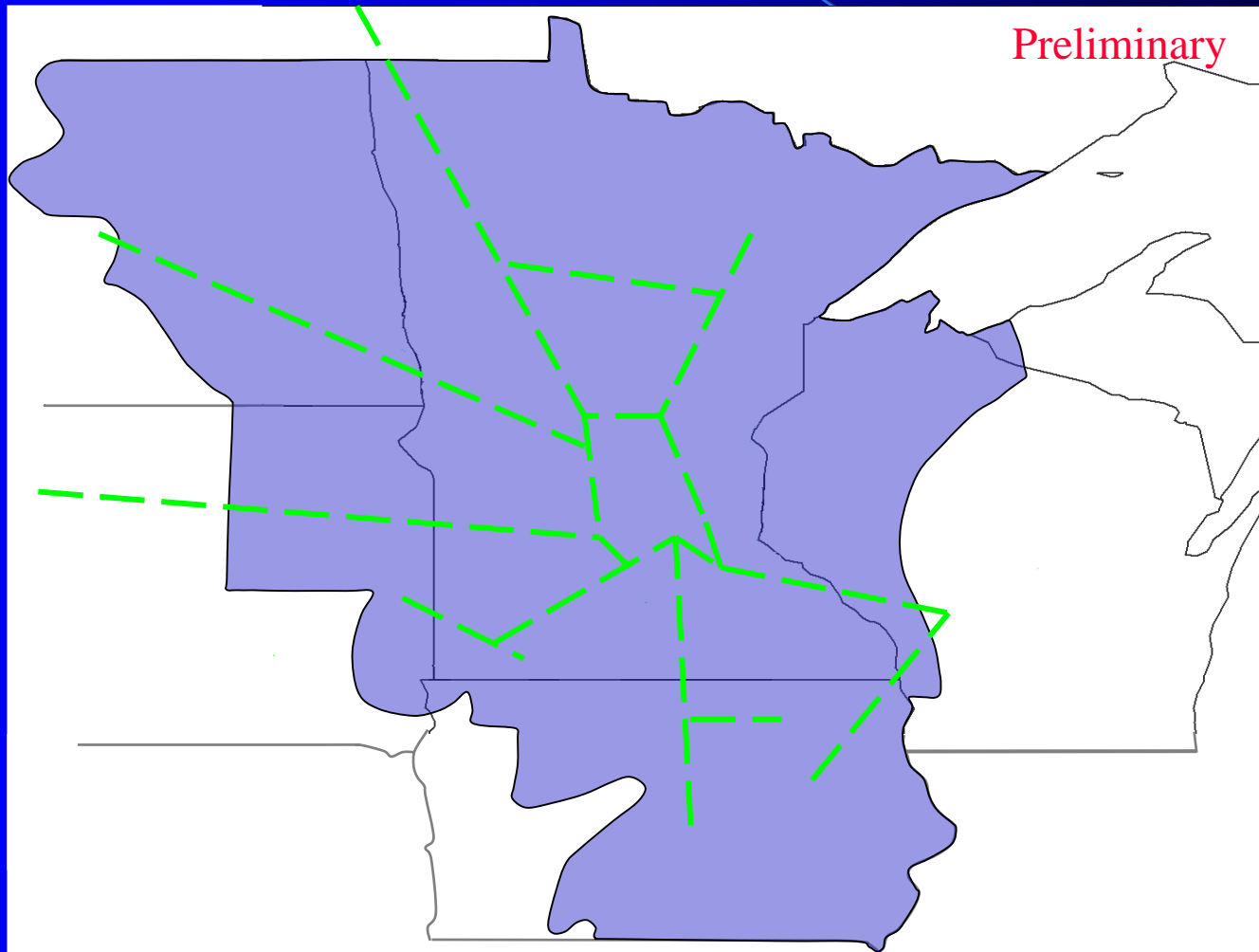
- Formed Spring 2004
- Now eight utility partners
- Focused on serving growing load in our service territories; generation outlet, reliability, market efficiency
- Collaborative effort: utilities, legislators and other stakeholders

Background



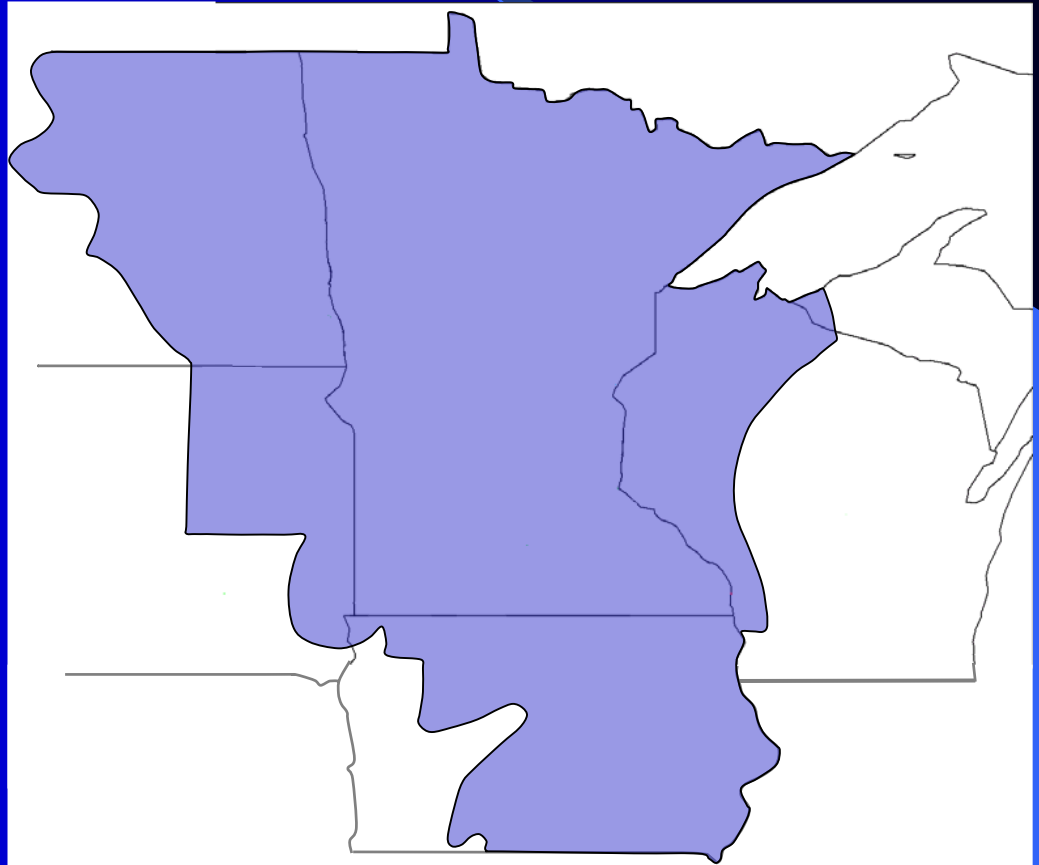
- CapX 2020 Vision Study completed
 - 15-year high-level plan
 - Integrated multiple planning studies
 - Detailed studies completed on first anticipated projects
- Moving to implementation
 - Project Group 1

Transmission concept plan – January 2005



CapX utilities serve Minnesota and the immediate region

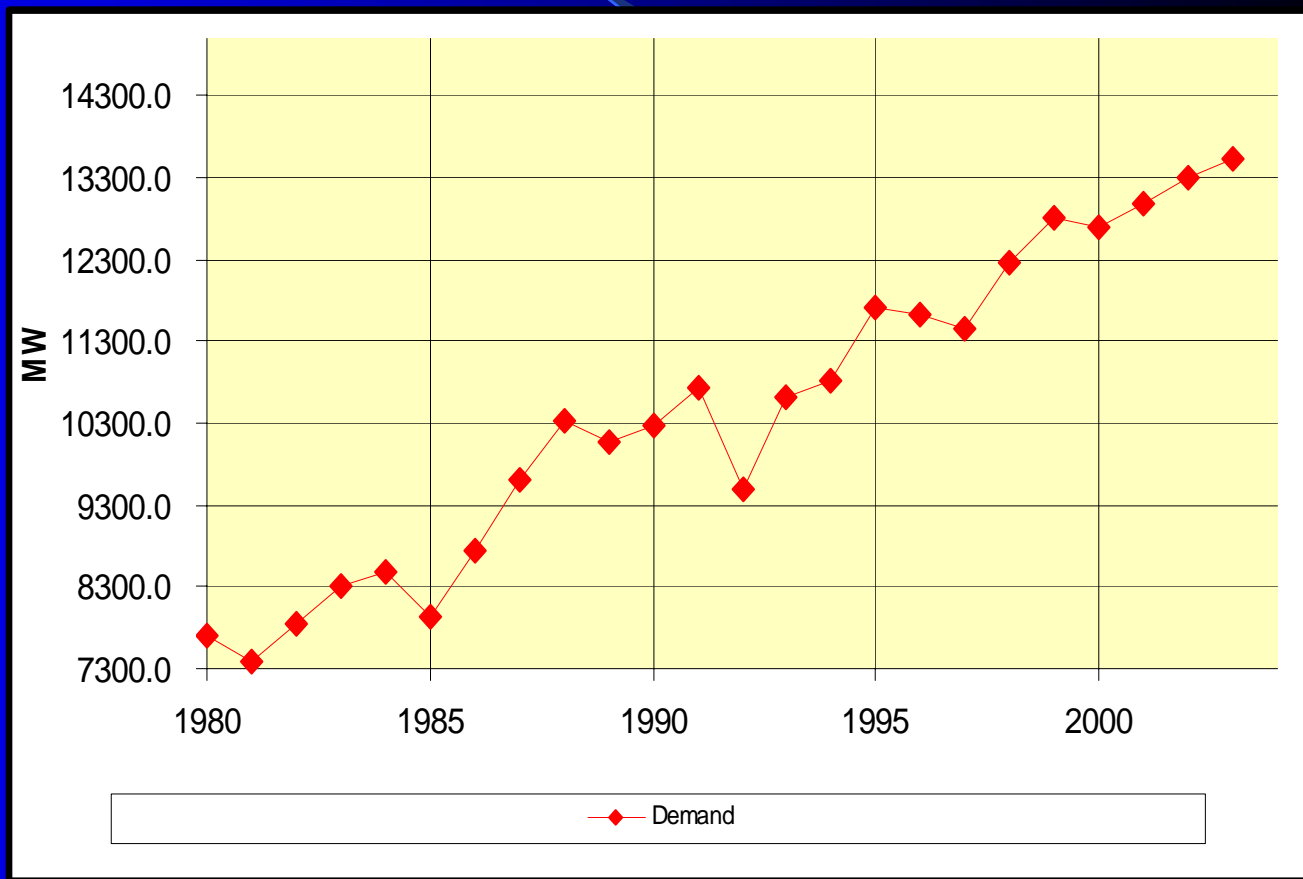
- 8,000 MW new generation to serve 6,300 MW load forecast through 2020
- CapX plans will accommodate additional 2,400 MW of wind capacity in support of the Renewable Energy Objective



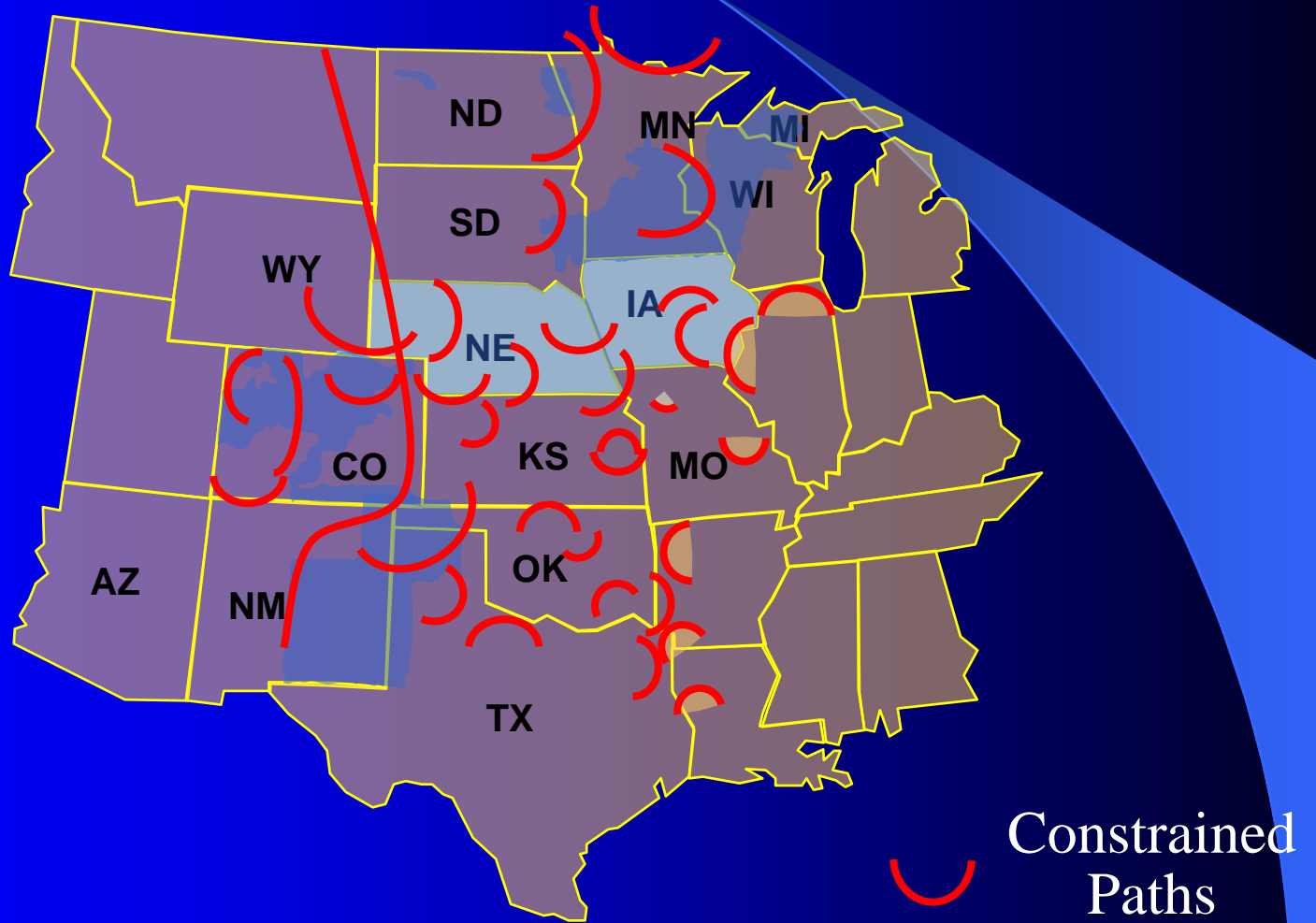
Conservative load growth estimates based on historical trends

Historical
Growth
from 2000-
2004:
2.64%

CapX Growth
2009-2020:
2.49%



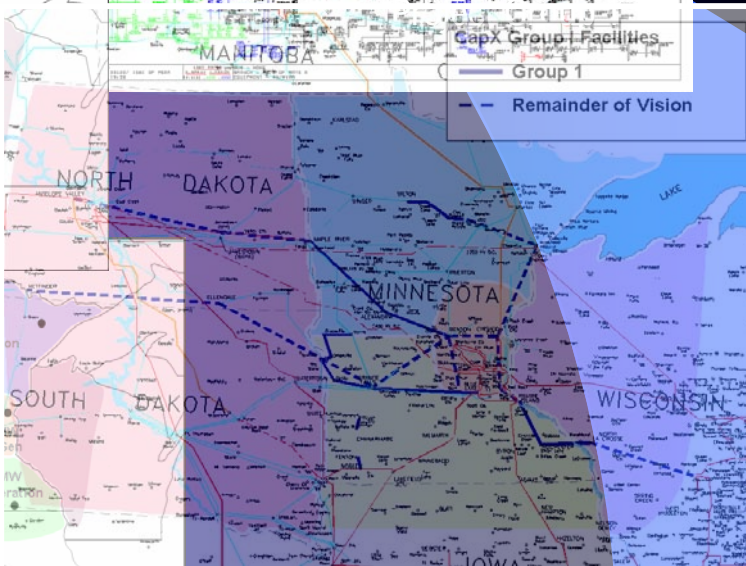
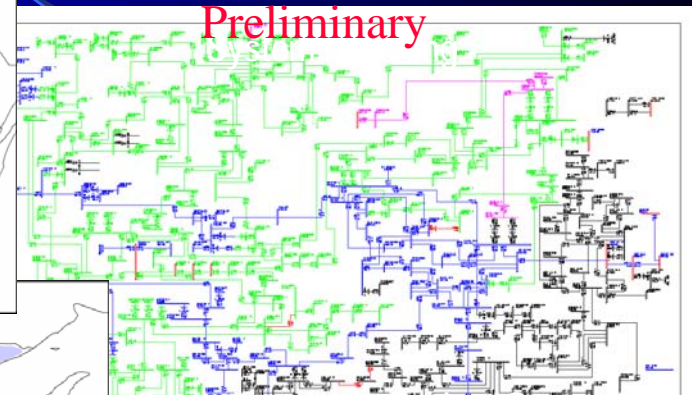
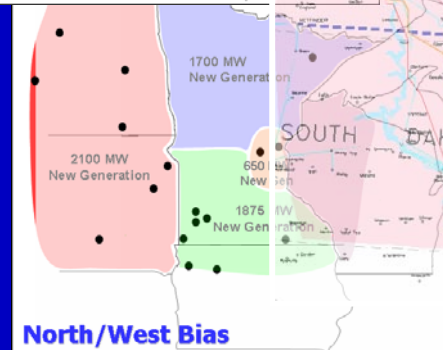
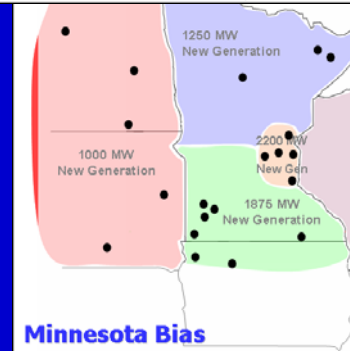
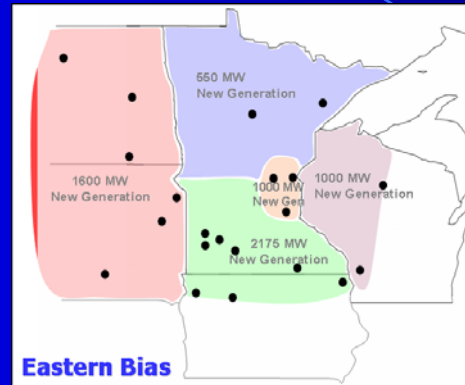
Constraints



Modeling resulted in sequenced list of transmission projects for development

Process

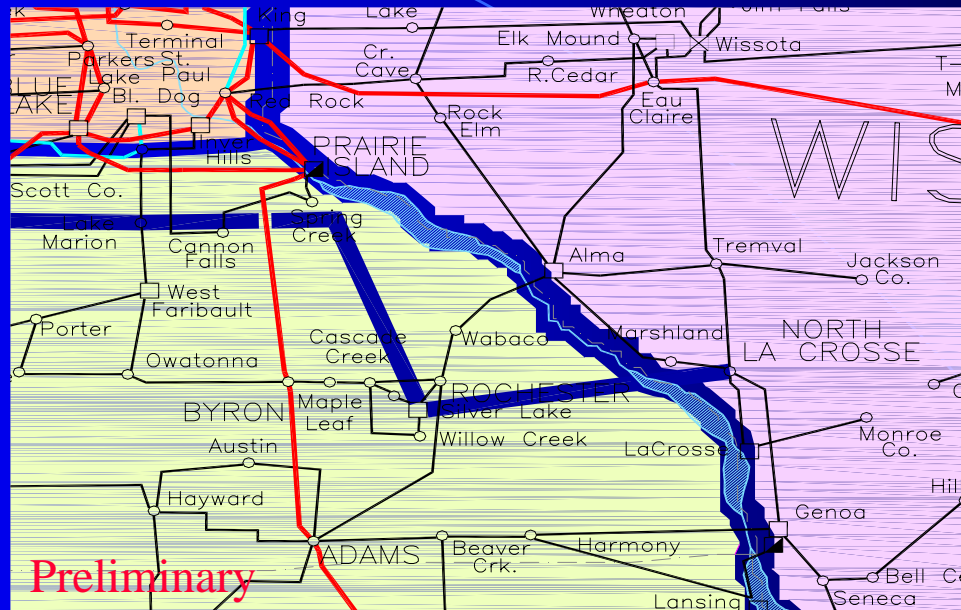
- Three different generation scenarios were modeled
- Required transmission assessed for each scenario
- Many facilities common for all three scenarios
- Established Project Groups sequence, by timing and priority of need



CapX Projects

Project Group	Expected In-Service
<p>Group I</p> <p>CapX SE Twin Cities-Rochester-La Crosse / 345kV</p> <p>CapX Bemidji-North Central MN / 230 kV</p> <p>CapX Fargo-St. Cloud area / 345kV</p> <p>CapX Brookings, SD-SE Twin Cities / 345 kV</p>	<p>2011</p> <p>2011</p> <p>2012</p> <p>2012</p>
<p>Group II – Around the Twin Cities *</p> <p>Benton County to Chisago / 345kV</p> <p>Benton County to Granite Falls / 345kV</p> <p>Benton County to St. Boni / 345kV</p> <p>Chisago to Prairie Island / 345kV</p>	<p>2014 to 2020</p>
<p>Group III – Remote Generation Outlet *</p> <p>Antelope Valley to Maple River / 345kV</p> <p>Arrowhead to Chisago / 345kV</p> <p>Columbia to North LaCrosse / 345kV</p> <p>Forbes to Arrowhead / 345kV</p>	<p>2014 to 2020</p>

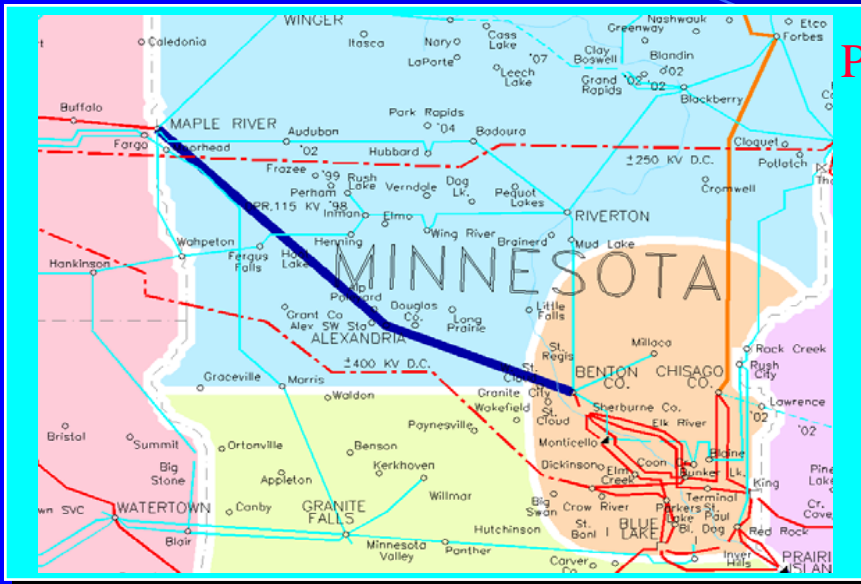
Project Group 1



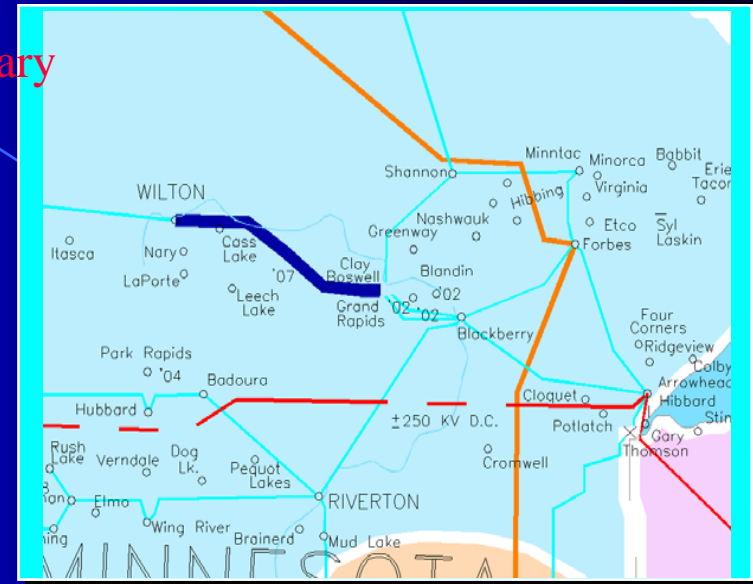
CapX S.E. Twin Cities – Rochester - La Crosse

- Reliability for south metro, Rochester, La Crosse
- Scope – 140 miles (est), 345 kV
- Expected In-Service 2011

Project Group 1



Preliminary



CapX Fargo – St. Cloud area

- Fargo, Central MN regional reliability and some outlet for ND generation
- Scope – 170 miles (est), 345 kV
- Expected In-Service – 2012

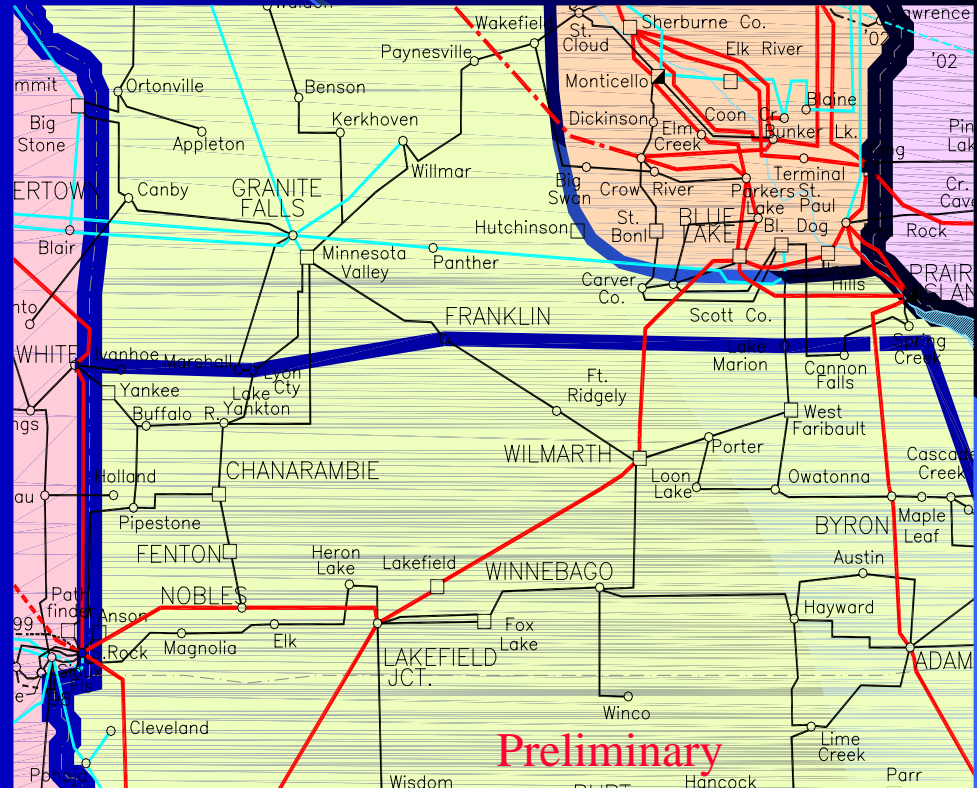
CapX Bemidji – N. Central MN

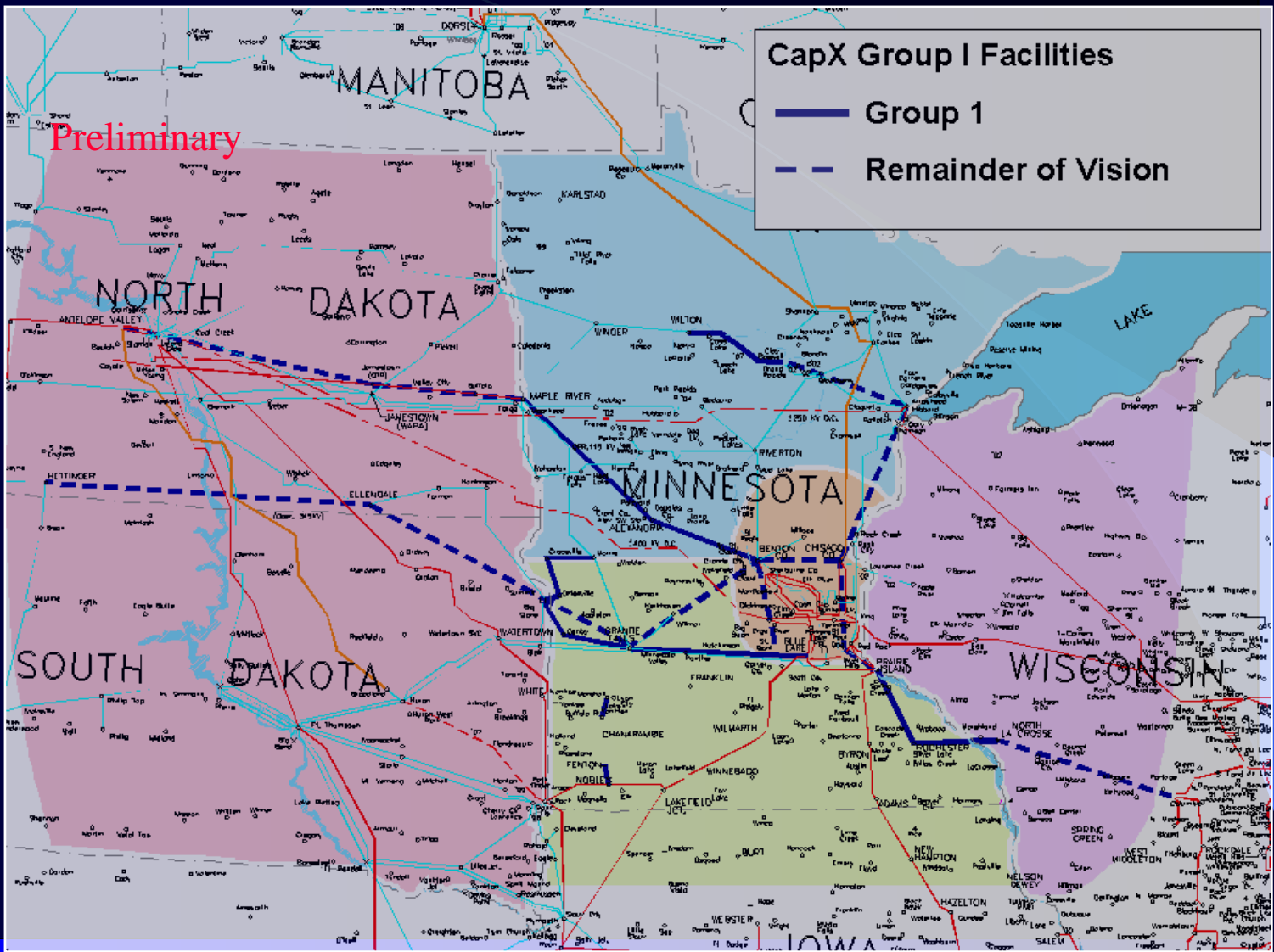
- Enhance reliability for Bemidji and the surrounding north central MN region
- Scope – 70 miles (est), 230 kV
- Expected In-Service – 2011

Project Group 1

CapX Brookings, SD – S.E. Twin Cities

- Buffalo Ridge – Metro to provide for additional incremental wind outlet capacity and south metro reliability
- Scope – 180 miles (est), 345 kV
- Expected In-Service 2012





New Regulatory Initiatives

- Landowner Compensation Issues
- Eminent Domain Issues
- Crop Damage Issues

Questions?

