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Southwest Minnesota Zone Meeting

May 17, 2005

Worthington, MN

Overview

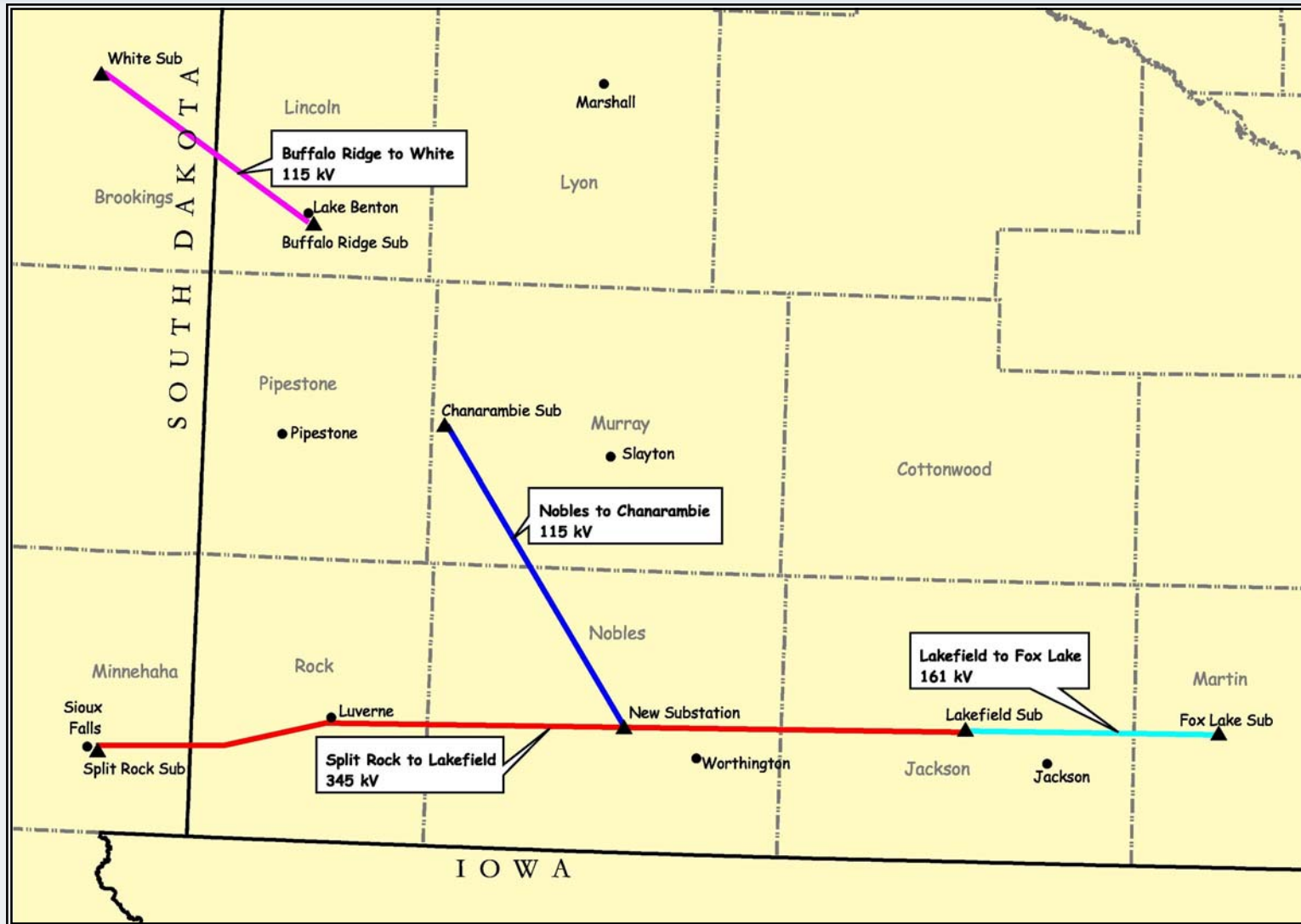
- Update on projects to outlet 825 MW
- Beyond “825 MW” projects – Detailed study to identify short term plan (s)
- Long term plans
- St. James Load Area Load serving CON study



Non-firm 425 MW Outlet Level

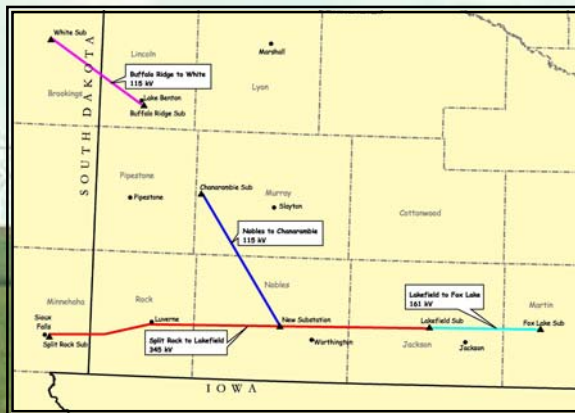
- Increase possible due to the completion of several components of the wind-November 2004
- Not firm until Spring 2006
- Subject to system conditions and prior-queued generation
 - Transfer levels (NDEX, MHEX, etc.)
 - Existing Lakefield – Fox Lake 161 kV line loading
- History indicates we can be at this level of output approximately 90 percent of the time
- System outages for maintenance, construction or emergencies may reduce outlet.

SW MN Wind Transmission—Major Projects



Much Has Been Accomplished

- While most of the public has focused on the 4 new lines, Xcel has been building other portions of the project. Construction began 2001. Completion date of 2007
 - Four new lines requiring Certificate of Need: 178 miles
 - Total lines affected by 825 MW plan: 520 miles
44% complete
 - Total affected subs: 29 – 38% complete



Schedule

Project	Route Permit	Construct. Start	Complete
Lakefield to Fox Lake	Sept 04	July 2005	Spring 2006
Buffalo Ridge to White Yankee sub -- MN	April 05	Spring 2006	Fall 2006
Split Rock to Lakefield Nobles to Chanarambie; Nobles & Fenton subs	June 05	Spring 2006	Fall 2007
South Dakota Permits	Dec 05		
Non-firm 425 MW outlet			Nov 2004
Firm 425 MW outlet			Spring 2006
Firm 825 MW outlet			Fall 2007

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Beyond “825 MW” – Short Term

- Continued interest to further develop wind
 - Large wind development to the north west and south of the present developments along the Ridge
 - Yankee- 500 MW and Noble- 200 MW
 - Some requests across the border at White
 - Numerous small wind developments in the area
- Study to identify short term plan (2008-2009) is being finalized.



Beyond “825 MW” Short Term - continued

The study effort concentrated on developing and evaluating transmission options that could

- Provide several hundred MW of incremental outlet capacity from the Buffalo Ridge Area
- Be implemented by the 2008-2009 timeframe
- Identify smaller-scale improvements that can be implemented while future large transmission plans are being developed



Beyond “825 MW” Short Term - continued

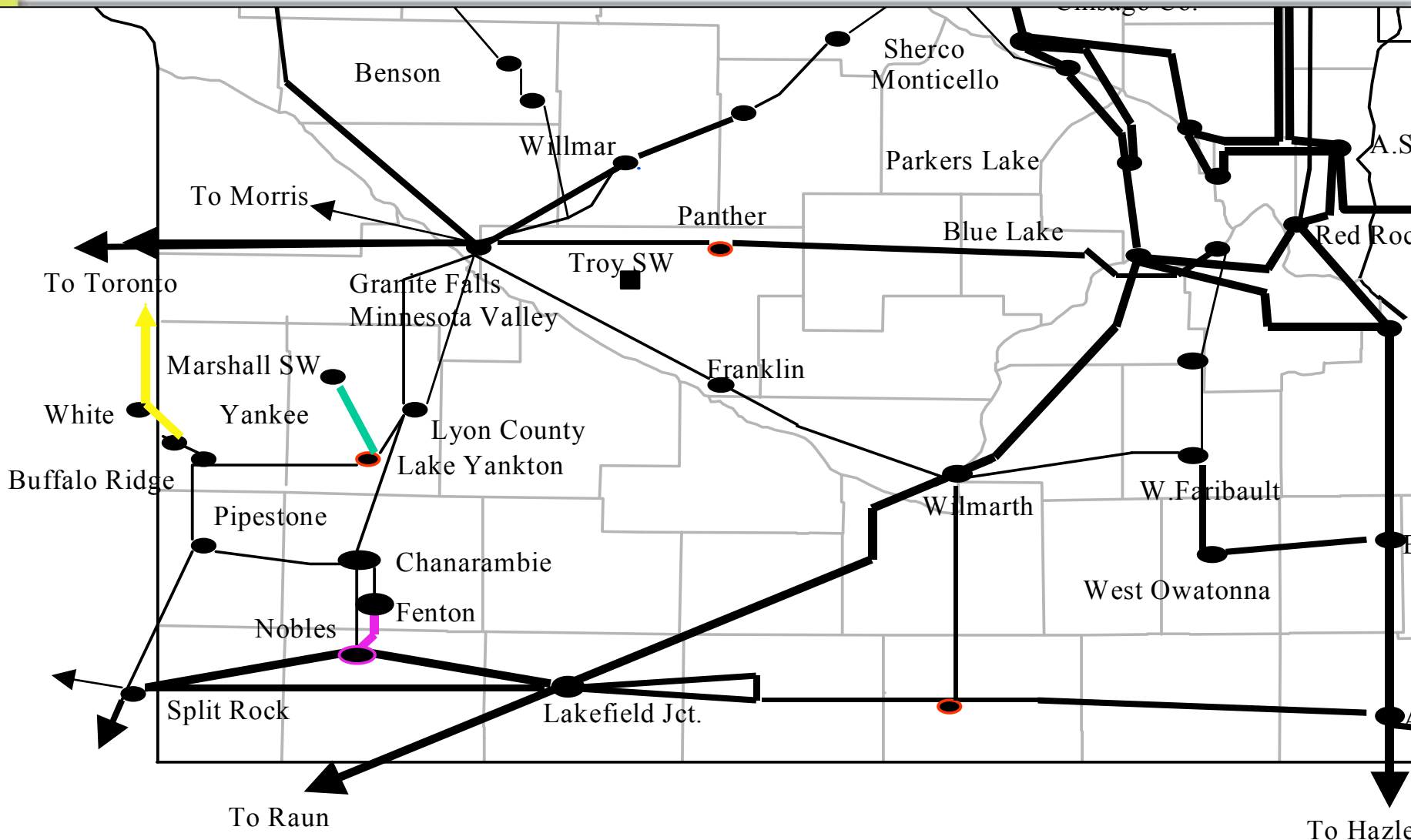
Conclusions and Preferred Alternative:

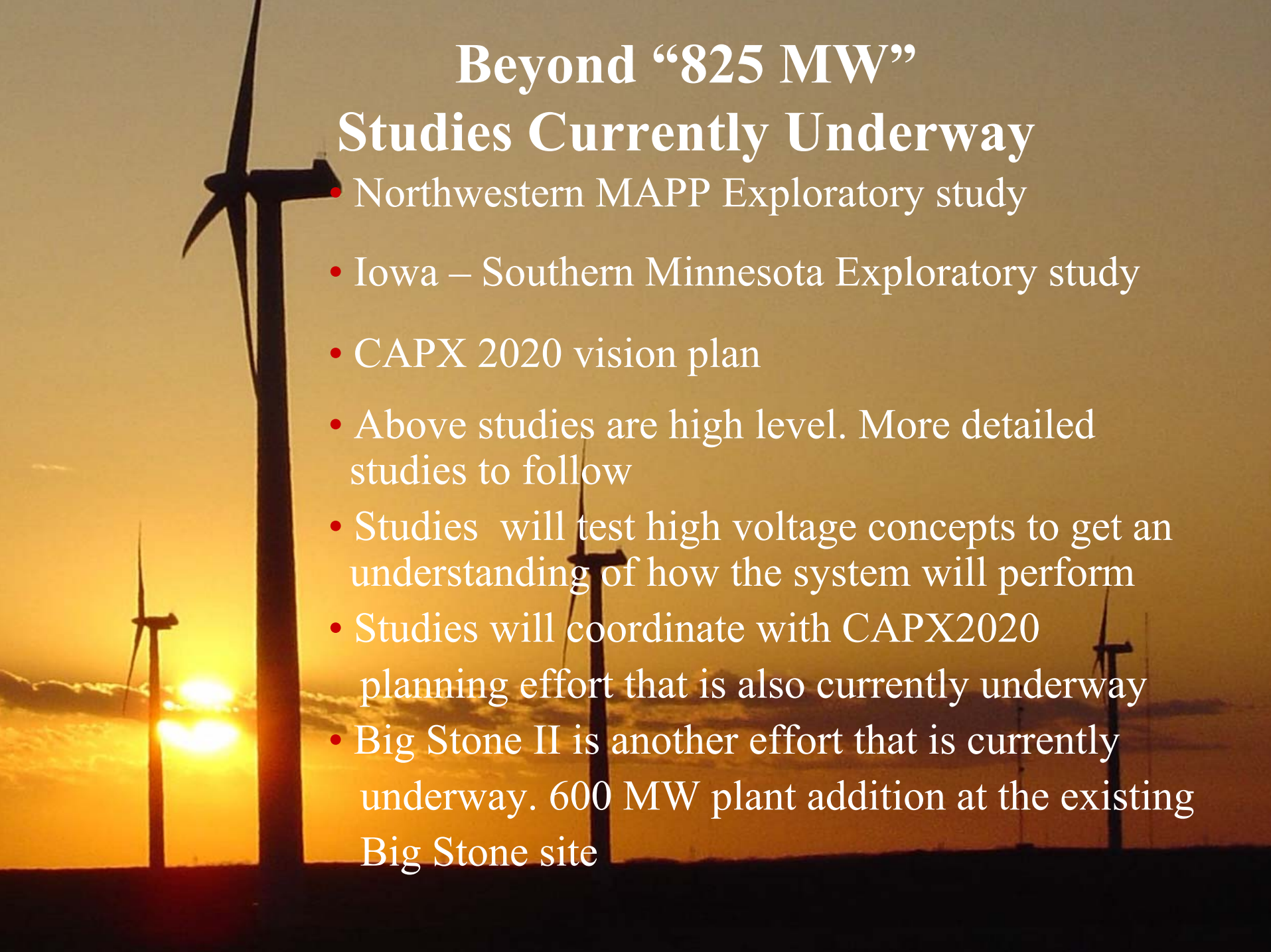
The preferred alternative which the study calls “Option 31A” adds the following facilities

- Nobles Co to Fenton 115 kV line #2
- Nobles Co 345/115 kV transformer #2
- Lake Yankton to Marshall SW 115 kV line
- Shunt capacitors at Panther, Lake Yankton and Winnebago Junction
- This study will coordinate with CAPX 2020 vision plan as well as nearby study results

Transmission Wind Outlet Plan- beyond 825 MW plan

Short term solution – Preferred Alternative



A photograph of several wind turbines silhouetted against a bright, orange sunset sky. The sun is low on the horizon, creating a strong glow and long shadows. The turbines are of varying heights and are positioned across the frame, with one particularly large one in the foreground on the left.

Beyond “825 MW”

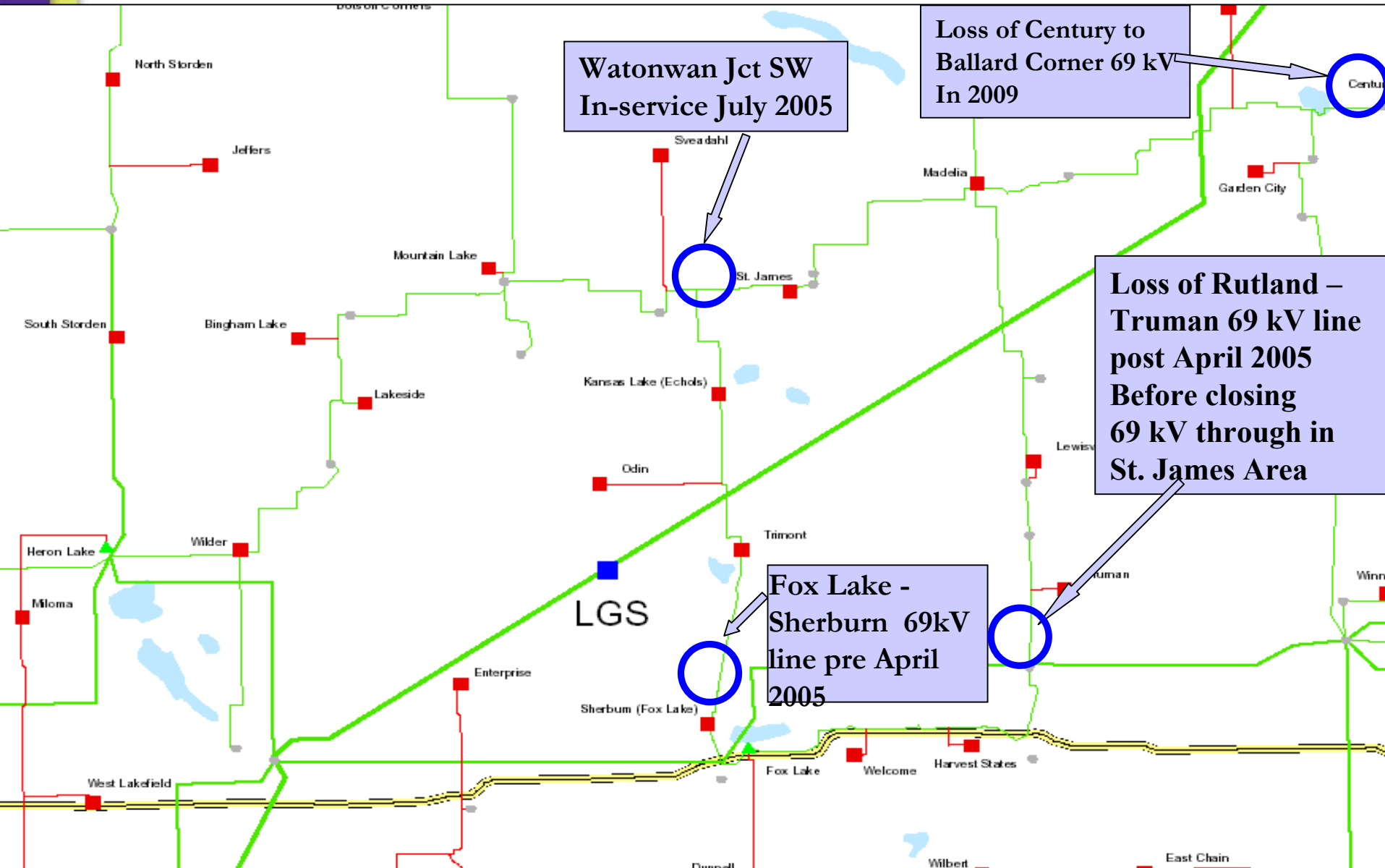
Studies Currently Underway

- Northwestern MAPP Exploratory study
- Iowa – Southern Minnesota Exploratory study
- CAPX 2020 vision plan
- Above studies are high level. More detailed studies to follow
- Studies will test high voltage concepts to get an understanding of how the system will perform
- Studies will coordinate with CAPX2020 planning effort that is also currently underway
- Big Stone II is another effort that is currently underway. 600 MW plant addition at the existing Big Stone site

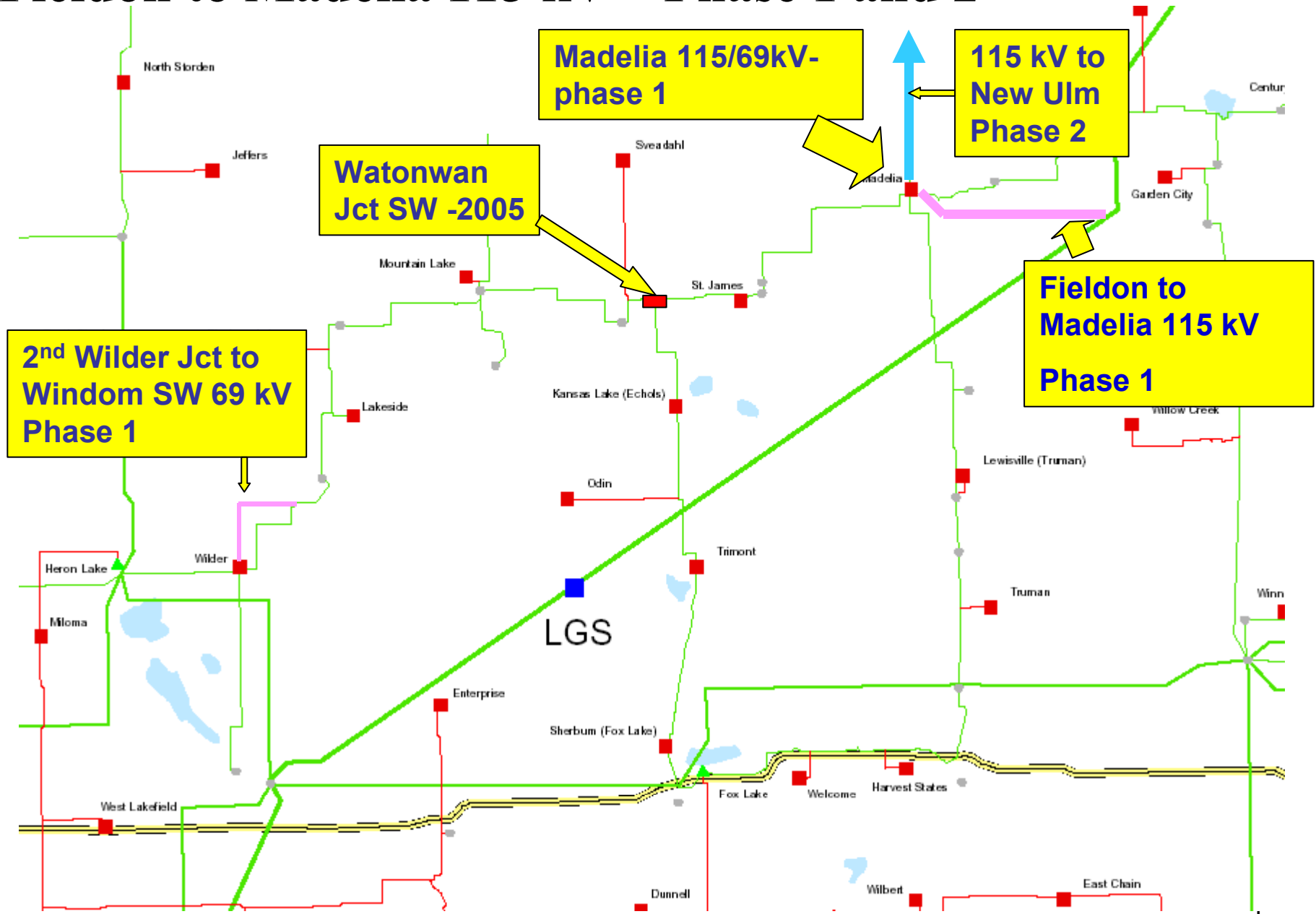
St. James area - Background

- Studies showed low voltage in the area for outage of several different lines would occur in 2005 timeframe, example:
 - Outage of Fox Lake—Sherburn 69kV line
 - Low Voltages could exist today at peak loads
 - Low Voltages in 2005
 - St. James 87.6 % (105 volts)
 - With transmission line switching → up above 90% (108 volts)
 - Options
 - New Switching station at Watonwan Jct 69 kV- Short term solution. Close 69 kV system through St. James area
 - New source into the area – Long term solution
 - Run St. James (local) generation

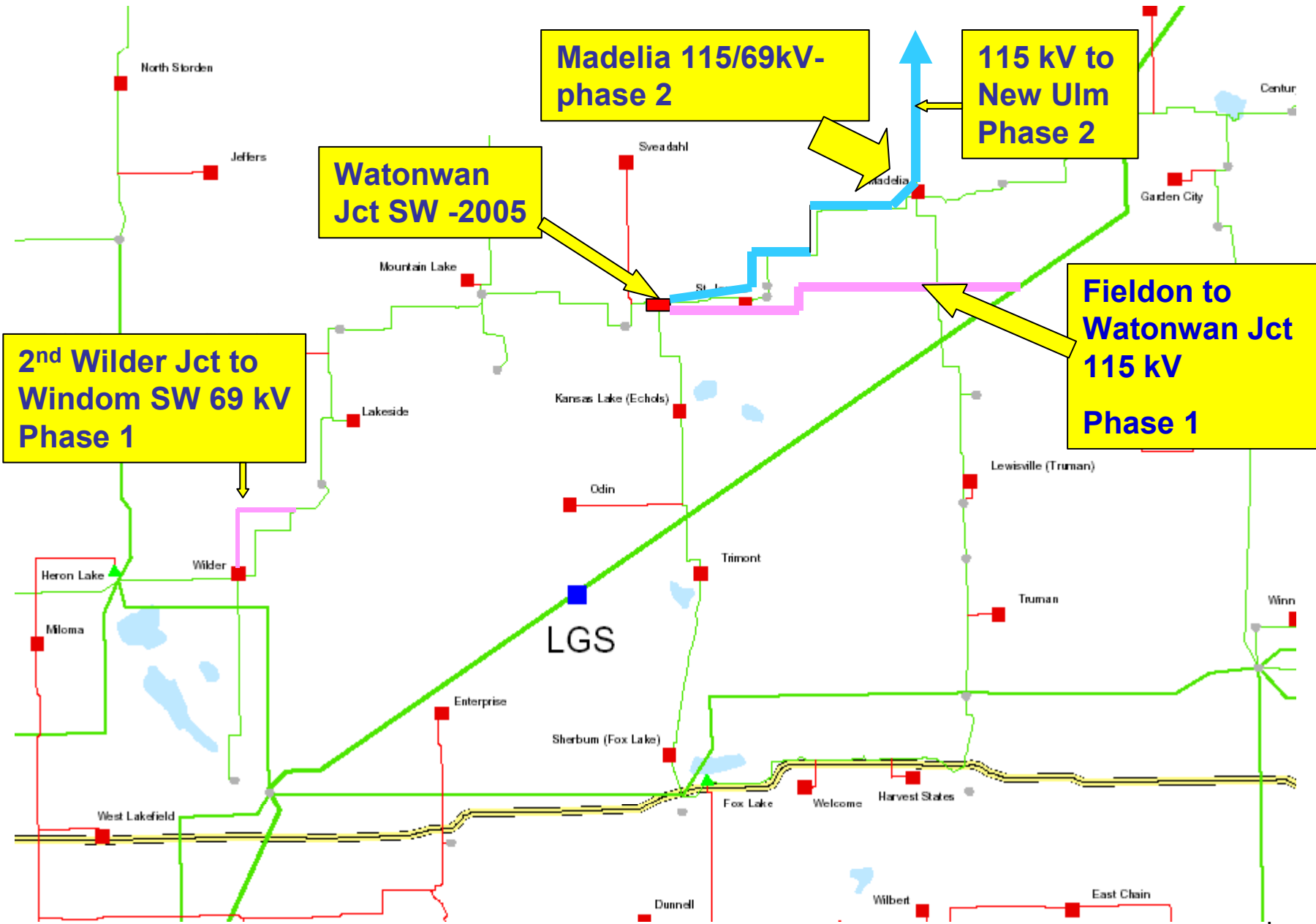
Critical Outages



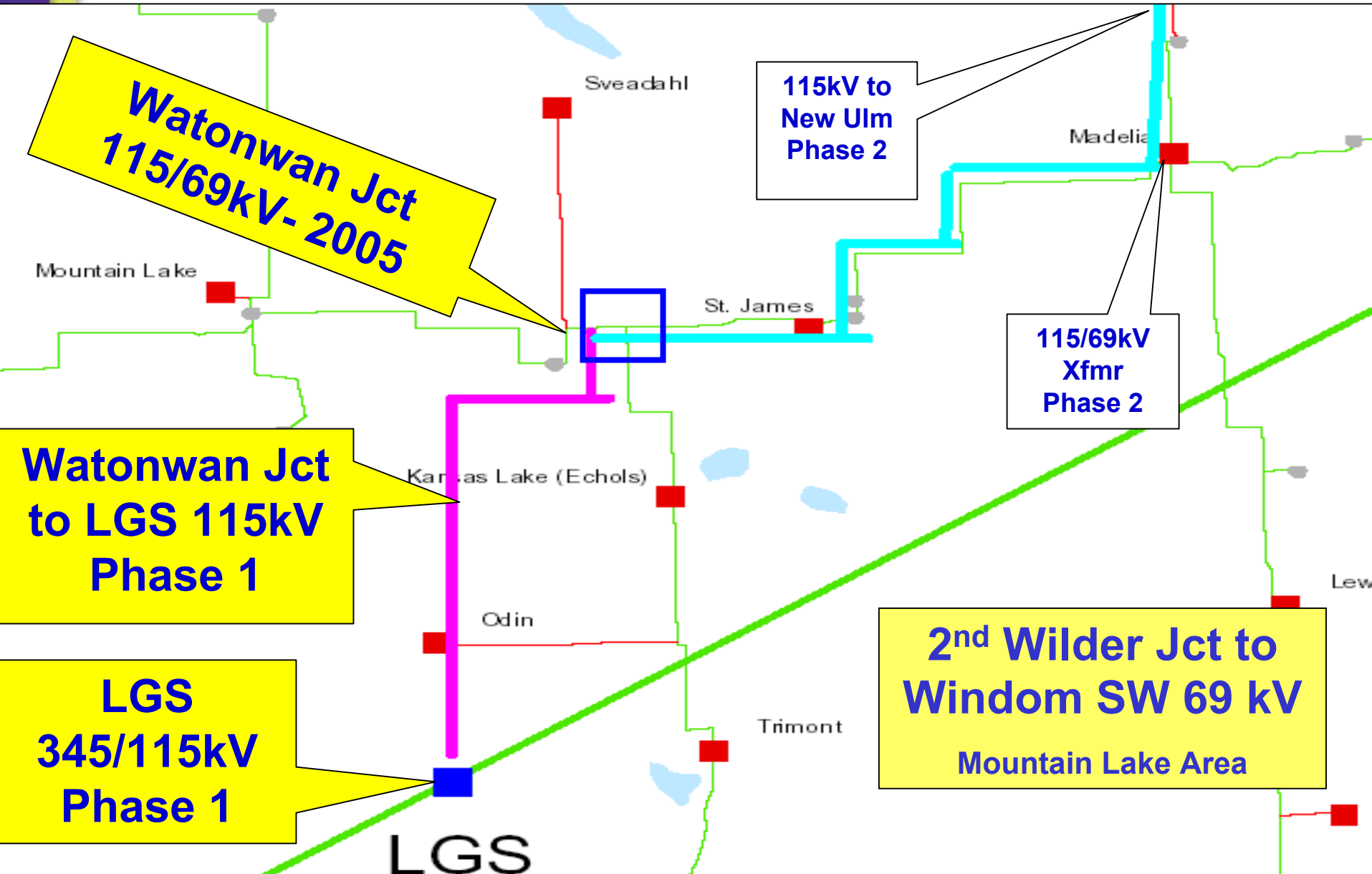
Fieldon to Madelia 115 kV – Phase 1 and 2



Fieldon to Watonwan Junction 115 kV – Phase 1 and 2



Lakefield Generating Plant to Watonwan Jct 115 kV plan- phase 1& 2



St. James Area - to do list

- *Evaluate:*
 - *Analyze distributed generation alternative*
 - *Economic evaluation of alternatives*
 - *Environmental impact of new line routes*
- *Write Certificate of Need report of study results & recommendations*



Questions/Input?