



Strategic Projects Update

Network Customer Meeting
October 20, 2010

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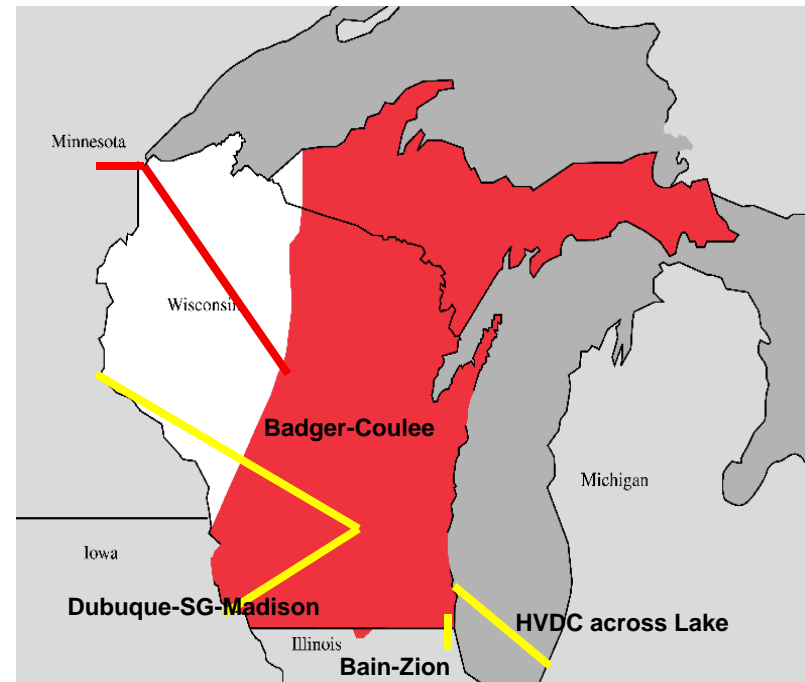


Agenda

- Order 890 and Optional Economic Studies
- Regional collaboration

Order 890 and Optional Economic Studies

- Badger-Coulee (La Crosse – North Madison – Cardinal) 345 kV line
 - 150 miles – Western Wisconsin
 - \$425 million
- Dubuque Co.-Spring Green-Cardinal 345 kV
 - 130 miles – Western Wisconsin
 - \$360 million
- Pleasant Prairie-Zion Energy Center 345 kV
 - 6 miles – Southeast Wisconsin
 - \$23 million
- HVDC across Lake
 - ~90 miles
 - \$600-\$750 million
 - Performing local analysis of this project





Badger-Coulee 345 kV Line

- Local reliability
 - Avoids the need for \$140 million in lower voltage upgrades in western Wisconsin
- Regional reliability
 - MISO RGOS, SMART study, Minnesota Capacity Validation Study, Minnesota Renewable Energy Study
- Local economic benefits
 - Preliminary analysis shows savings to ATC customers
- Regional economic benefits
 - Preliminary analysis shows savings across the MISO region
- Public policy benefits
 - Significant savings created by being able to build wind generation in higher wind capacity areas

Dubuque Co.-Spring Green-Cardinal 345 kV Line

- Local reliability
 - Avoids the need for \$170 million in lower voltage upgrades in western Wisconsin
- Regional reliability
 - MISO RGOS study
- Local economic benefits
 - Preliminary analysis shows savings to ATC customers
- Regional economic benefits
 - Preliminary analysis shows savings across the MISO region
- Public policy benefits
 - Significant savings created by being able to build wind generation in higher wind capacity areas

Pleasant Prairie-Zion Energy Center

345kV Line

HVDC across Lake Michigan

- Pleasant Prairie-Zion Energy Center
 - Local reliability - will provide more reliable system in Southeast Wisconsin for multiple contingency conditions
 - Regional reliability - MISO Regional Generator Outlet study
 - Local economic benefit - provides economic benefit to ATC customers
 - Public policy - Provides congestion relief and ability to move renewables further east
- HVDC across Lake Michigan
 - Regional studies - SMART Study, MISO Regional Generator Outlet Study
 - Shows economic benefit to specific entities

Regional Collaboration

- MISO Regional Generator Outlet Study (RGOS)
- MISO Candidate MVP Portfolio #1 Projects
- MISO Cross Border Congestion Study
- Upper Midwest Transmission Development Initiative (UMTDI)
- Strategic Midwest Renewable Transmission (SMART) Study
- Eastern Interconnection Planning Collaborative (EIPC)

The number of large regional studies is increasing in numbers and scope. At the conclusion of the studies, transmission owners and RTOs need to decide how to move projects forward.

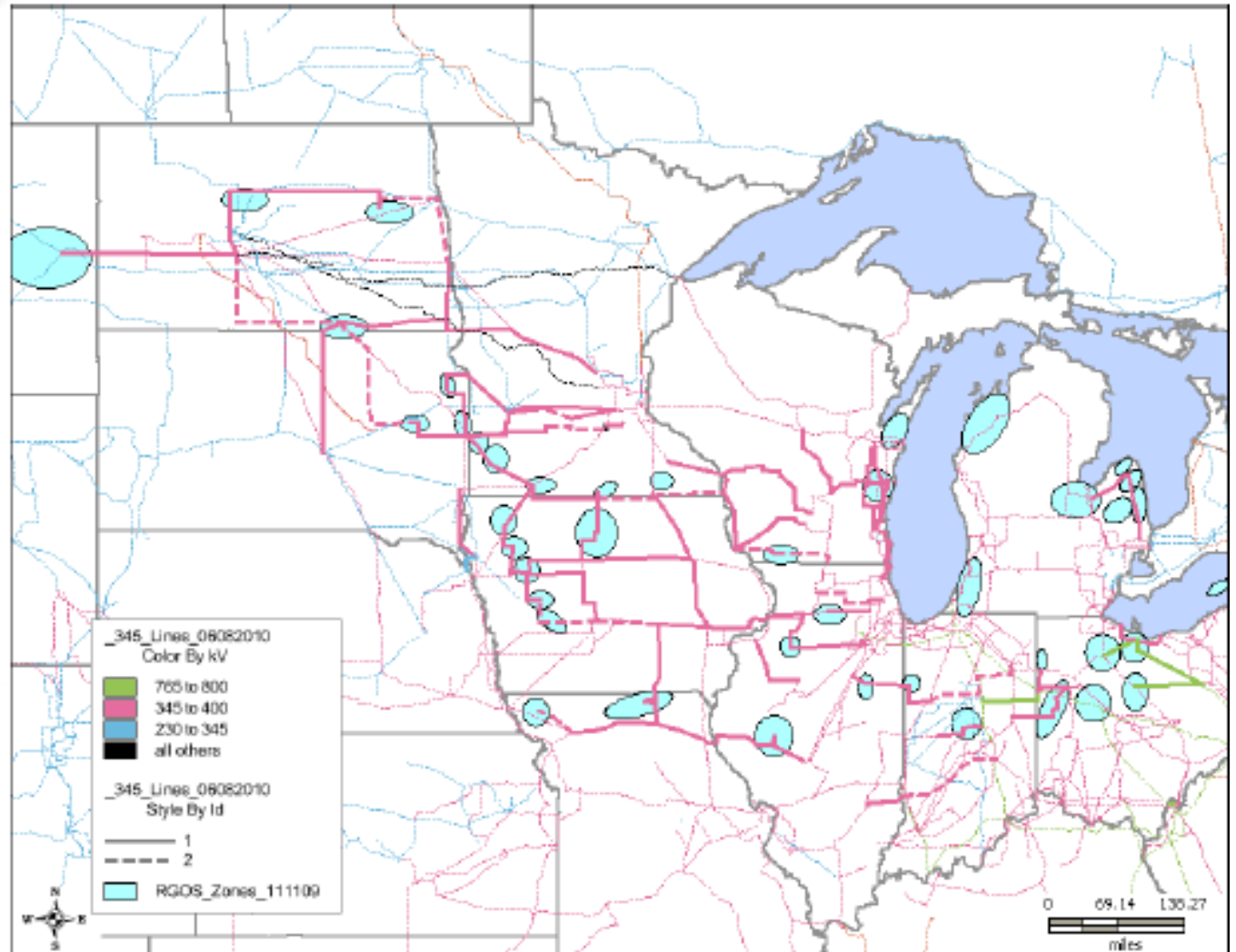


Regional Collaboration

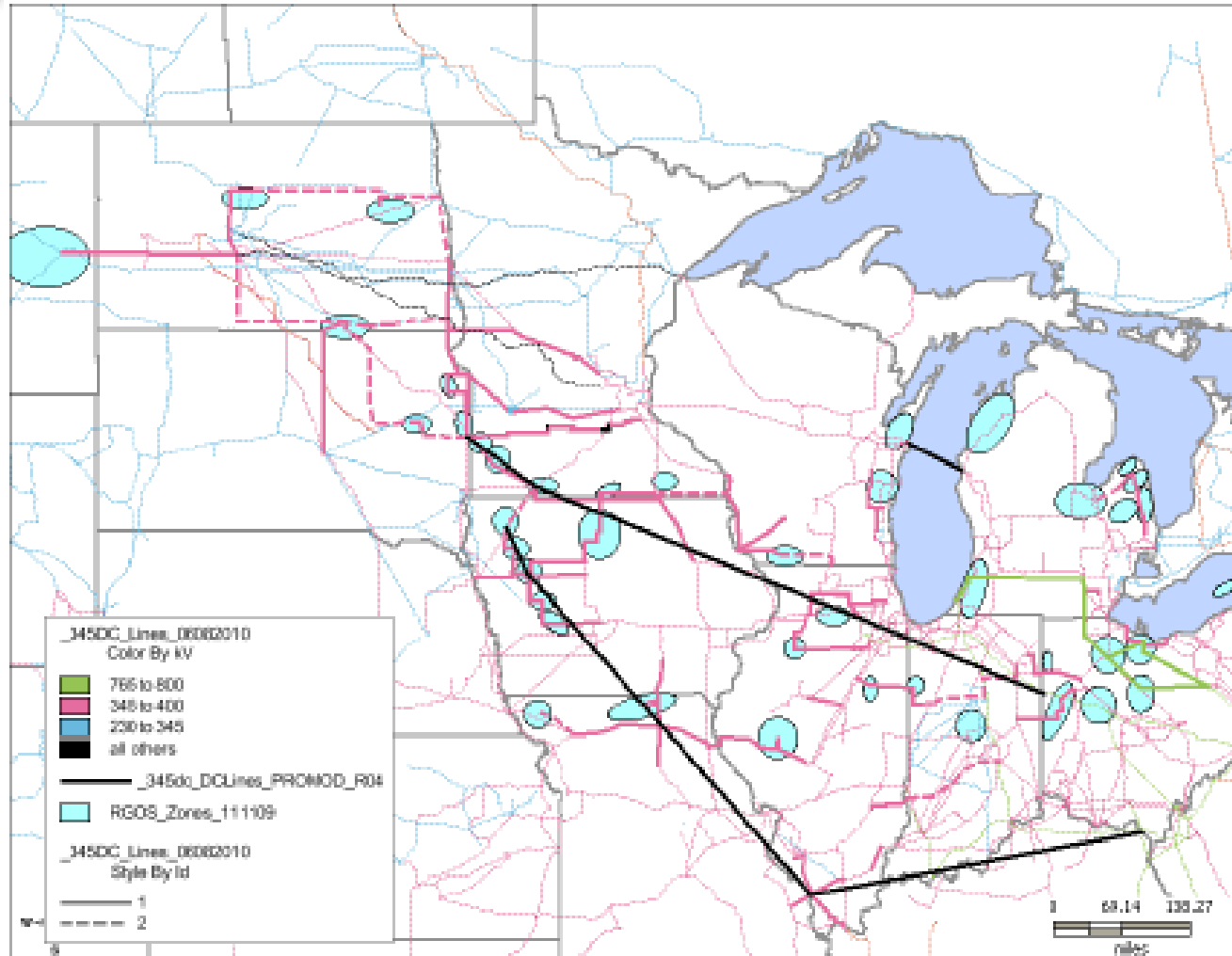
MISO Regional Generator Outlet Study

- MISO has developed an RGOS transmission plan to meet state renewable requirements in the MISO footprint (≈ 40 GW)
- Options Studied:
 - “Native” voltage solution (345 kV only except in areas where 765 kV is considered native voltage)
 - “Native” voltage solution with DC transmission
 - 765 kV solution (which will includes 345 kV supporting transmission)

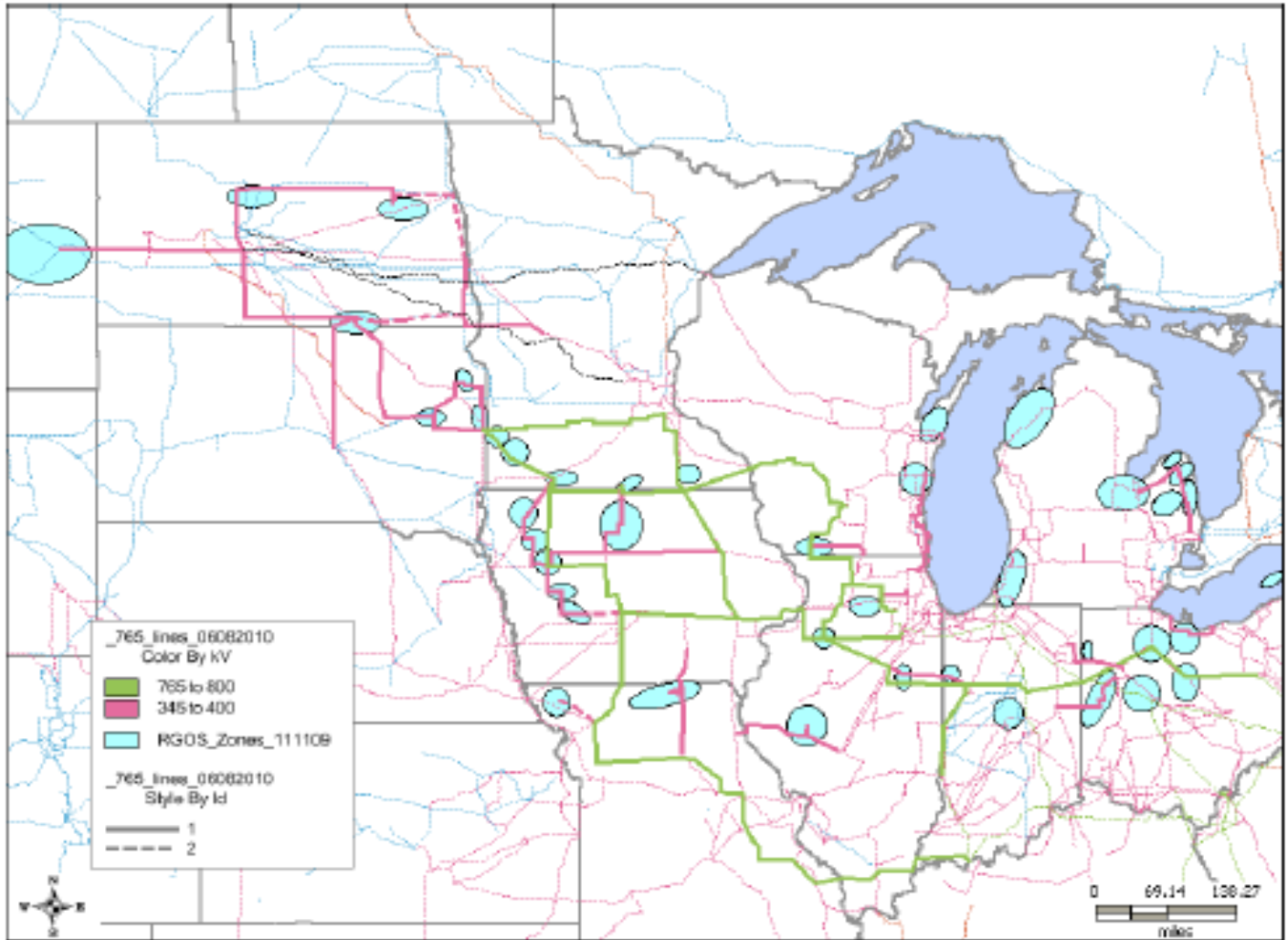
RGOS - Native Voltage Option



RGOS - Native Voltage *with DC Option*



RGOS - 765kV Option



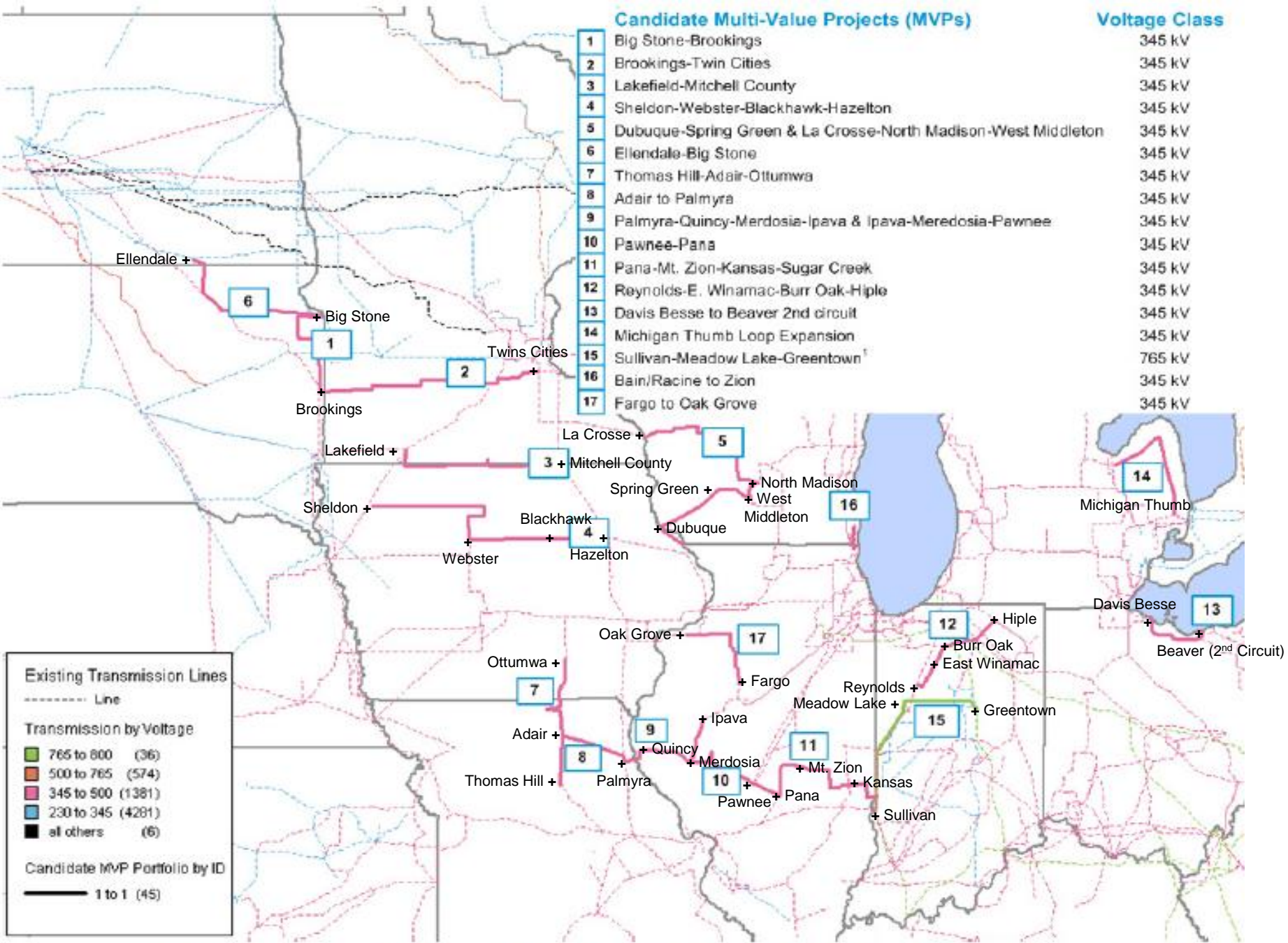


Figure 1.5-1: Proposed Midwest ISO Candidate Multi-Value Project Portfolio #1

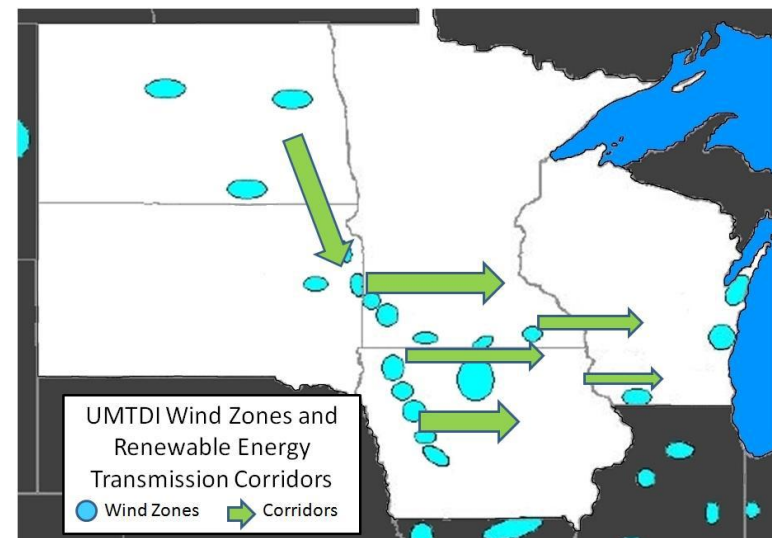
MISO Cross Border Congestion Study

- MTEP 10¹
 - Hard to justify projects in Lower Lake Michigan Area Under RECB II
 - Projects which show good B/C ratio in 2015 PROMOD cases are tested with 2020 and 2025 RPOMOD cases following RECB II tariff requirement, but failed the tests.
 - Performed numerous tests for individual market participant but no takers.
- MTEP 11¹
 - Continue investigating design modifications to help quantify project under RECB II or MISO/PJM Cross Border Market Efficiency Projects

¹From MISO PAC update, September 29, 2010

Upper Midwest Transmission Development Initiative

- Governors of five states authorized public service commissions to determine transmission needed to meet existing state Renewable Portfolio Standards
- Group engaged Midwest ISO to perform study – Regional Generator Outlet Study
- Report issued recently identified transmission corridors

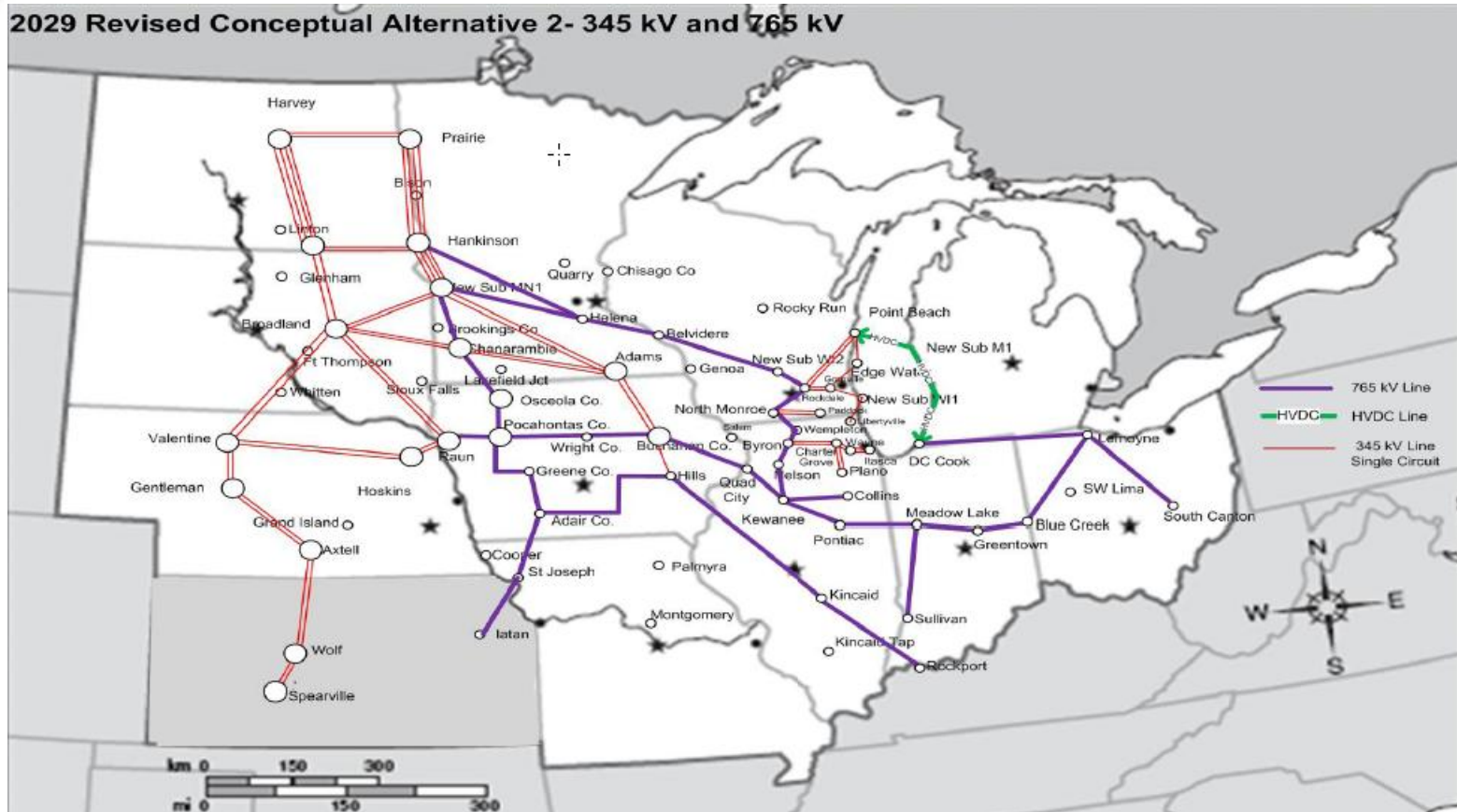


SMART Study

- Group is made up of transmission owners from North Dakota to Ohio
- Purpose: identify transmission needed to support renewable energy development
- Moving 56,000 MWs of wind in eleven-state region
- Study completed in October – information at www.smartstudy.biz

SMART Study Solutions

345kV/765kV Combination



Alternative #2 is estimated to cost \$23.7 billion.

SMART Study Solutions

765 kV

2029 Revised Conceptual Alternative 5- 765 kV



Alternative #5 is estimated to cost \$25.6 billion.

Eastern Interconnection Planning Collaborative

- Objective is to develop transmission alternatives for a range of scenarios for the entire Eastern Interconnection
 - Group is made up of ATC and 25 other PAs
 - In 2009 DOE awarded \$16 million to fund a Eastern Interconnection-wide planning analysis
- The group is in preliminary model building stages (2020 model)
- Stakeholder Steering Committee is working to provide future scenarios to be analyzed
- Results expected in October 2011 and October 2012
- <http://www.eipconline.com/>



Questions?

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