



La Crosse-Madison

ATC Customer Meeting
August 20, 2009



Objectives

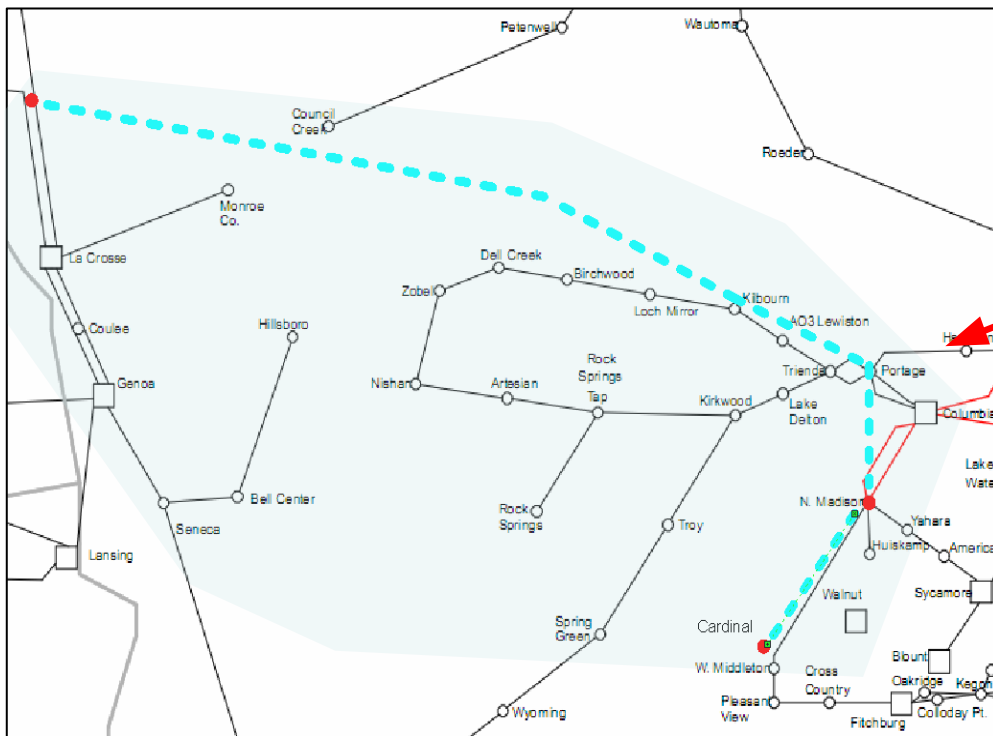
- Discuss the concept that the drivers for the La Crosse – Madison project would be a group of benefits rather than a “bright line” reliability or economic benefit
- Review the various analytical efforts underway to study the La Crosse – Madison line



Project Description

- Approximate 150-mile 345 kV line
 - Possible substation enhancements
- Possible in-service date of 2017 being considered
- Estimated capital cost \$545 million

General Siting Area



345 kV mileage estimate
= 158 miles

This drawing is for illustrative purposes only and does not portray actual transmission line additions or potential routes



Potential Project Benefits

- This project is driven by a combination of benefits rather than a “bright line” reliability or “bright line” economic need. The project has several potential benefits:
 - Needed to move wind associated with Wisconsin and other Upper Midwest states’ Renewable Portfolio Standards
 - Regional economic benefits for wind futures
 - Reliability benefits to neighboring Transmission Owners
 - Local reliability benefits
 - Local economic benefits



Benefits of the Proposed Project

- Regional benefits
 - NLAX–CRD 345 kV line is being analyzed as part of Upper Midwest Transmission Development Initiative/Regional Generation Outlet Study Phase I as a possible facility needed to satisfy RPSs in Upper Midwest states including WI
 - It appears in the indicative plans for all eight plans/futures that are currently being studied and is appearing in the preliminary plans from the detailed analysis at this point
 - Executive summary of detailed analysis is expected to be complete by the end of September, with complete detailed report expected by the end of October



Benefits of the Proposed Project

- Regional economic benefits
 - Analysis completed as part of recent Minnesota TO studies shows an economic savings of \$800 million across the entire MISO footprint for a combination of the Granite Falls-Twin Cities upgrade in MN and the LaCrosse-Madison line in WI (estimated total cost of the two lines is \$900 million)
 - Together with the Twin Cities–Granite Falls upgrade, the La Crosse–Madison line modeled in the RES Study by itself was shown to add 1,600 MW of additional capacity to the system – for a total of 3,600 MW of new generation delivery capability for both projects



Benefits of the Proposed Project

- Reliability benefits to neighboring transmission owners:
 - The Minnesota RES Update Study
 - Indicated that when wind generation increases beyond the level required for the state’s 2016 RPS a new transmission line east of La Crosse would help avoid system stability issues in the Twin Cities
 - Would increase ties with WI and enable greater outlet of generation to the eastern part of MISO from MN and points further west
 - Minnesota Capacity Validation Study (CVS)
 - Identified a La Crosse–Madison 345 kV line as one of the top three projects analyzed that provides the most transfer capability across a variety of underlying assumptions
 - The study evaluated 24 of “the most likely” transmission projects previously proposed

Benefits of the Proposed Project

- Local reliability benefits:
 - Past 10-Year Assessments have identified low voltage issues and overloaded facilities in the southwest portion of ATC's footprint
 - Depending on how the project is configured and routed, a 345 kV NLAX–CRD line could possibly help address reliability issues in this area
 - ATC also is leading the Western Wisconsin Study with other TOs to investigate the reliability needs in this part of WI and the transmission options – including a 345 kV NLAX–CRD line – to address these needs



Benefits of the Proposed Project

- Local economic benefits:
 - ATC’s 2008 economic study indicated that NLAX–CRD would more than pay for itself in two of six scenarios and break even in two other scenarios
 - NPVs of benefits:
 - Robust Economy: \$1.2 Billion
 - 20% Wind: \$760.7 Million
 - High Environmental: \$561.1 Million
 - High Retirements: \$461.2 Million
 - Fuel & Investment Limitation: \$113 Million
 - Slow Growth: \$25.2 Million
 - ATC in 2009 is again studying NLAX–CARD as part of its analysis of the economic benefits of certain possible system upgrades
 - Also are developing and will test options in a “Carbon-Constrained Low Transmission” future that would achieve 17% reduction in carbon emissions from 2005 levels by 2020



Other Projects Under Analysis

- Along with a North La Crosse–Cardinal 345 kV line, ATC is analyzing the potential benefits of other possible projects:
 1. Lore-Spring Green-Cardinal 345 kV line
 2. North La Crosse–Cardinal and Lore–Spring Green–Cardinal 345 kV lines combined
 3. Genoa–North Monroe 765 kV line
 4. Bain–Zion Energy Center 345 kV line
 5. At least one equivalently performing low voltage and/or local transmission alternative



RGOS Phase I

- RGOS I is focused on identifying transmission needed to meet RPSs in WI, MN, IL and IA
- RGOS I is being used by the Upper Midwest Transmission Development Initiative effort
- Detailed analysis is underway
 - Detailed analysis is being done for 15 GW and 25 GW injection levels
 - Detailed work includes power flow, stability and production cost analyses
 - ATC is participating in the Design Sub-Team with other TOs and ATC also is conducting power flow analysis for the 15 GW 345 kV model



RGOS Phase II

- RGOS II kicked-off in May
- Considers expanded requirements in RGOS I states and new requirements in such states as MO, MI, and OH
- Builds off of RGOS I
 - The various RGOS I plans will be used as the starting point for the RGOS II scenarios
- MISO surveyed LSEs for projections of renewables needed and is finalizing the wind zones
- Indicative design workshop was held in late July – ATC participated
- Completion date expected January 2010



ATC Economic Analysis

- As part of ATC's FERC-approved local planning process, the company conducts an annual analysis of transmission lines that have potential economic value
- Through ATC's strategic flexibility approach, the La Crosse–West Middleton line and other projects will be analyzed using several plausible futures
- After consultation with and input from stakeholders, ATC has developed the assumptions and a list of projects to study in 2009
- Preliminary results are expected by the end of 2009/early 2010



Western Wisconsin Study

- The scope of the Western Wisconsin Study is to investigate the reliability needs in western Wisconsin and transmission options that will address the identified needs
- The study is led by ATC and, along with MISO, the following TOs are participating: Xcel, GRE, DPC, ITC Midwest and SMMPA
- In July and August ATC is conducting power flow and transfer analyses
- ATC is aiming to complete the study by first quarter of 2010



Questions?

Bob McKee

rmckee@atcllc.com

