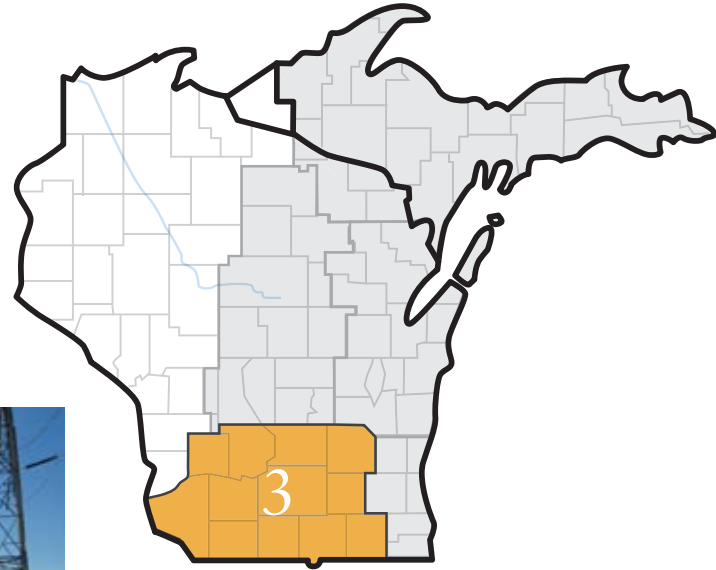


10-Year Transmission System Assessment

Proposals to ensure

- Electric system reliability
- Access to low-cost sources of power
- Access to renewable energy

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Zone 3

South Central/Southwest Wisconsin and North Central Illinois

COLUMBIA

CRAWFORD
(southern portion)

DANE

DODGE

GRANT

GREEN

IOWA

LAFAYETTE

JEFFERSON

RICHLAND

ROCK

SAUK

WALWORTH

WINNEBAGO, ILL.
(northern portion)

Planning for future reliability

American Transmission Co. was formed in 2001 to plan, permit, build, own, operate and maintain a high-voltage electric grid that meets the reliability and economic needs of our customers. Our planners continually conduct engineering studies on the electric transmission system looking for potential problems that may affect the future performance of the system. Our studies identify and prioritize future projects needed to improve the adequacy and reliability of the electric transmission system and meet evolving public priorities for increased availability of renewable generation.

Many projects serve to increase customer access to low-cost generation, which can reduce the cost of serving load in our footprint. In certain cases, expected economic benefits may be the primary driver of a project. Such is the case with our Paddock-Rockdale 345-kV line in southern Wisconsin. It is the first of its kind in the Midwest – while the line will enhance reliability, economics drove the decision to build. Local electric utilities will save through improved access to the wholesale electric market, and those savings will be passed on to end-use electric customers.

Whatever the need, we select best-value projects that resolve multiple system issues, and we do so in a transparent, collaborative process. We bring people into the process, engaging stakeholders in transmission discussion. We believe this open collaboration is critical to efficiently and economically meet renewable portfolio standards in the region. To that end, we are leading and participating in about a dozen regional and intra-regional studies and initiatives. We also are continuing to work with stakeholders in identifying projects that provide economic

benefits and upgrades that could improve access to lower-cost sources of power inside and outside our service territory.

In this, our ninth year of producing a 10-year forecast of transmission system needs, our focus remains on maintaining the adequacy and reliability of the system to meet the current and future needs of our customers. However, this is the first year that we have included asset renewal projects in the Assessment. While our reliability performance data indicates that our system is performing well, we are placing increased emphasis on managing the risk of aging infrastructure. Our approach to work that traditionally has been called maintenance is moving from a time-based program to a more-efficient process that is informed by performance analysis and operational experience.

The 2009 Assessment covers the years 2010 to 2019, and identifies \$2.5 billion in necessary transmission system improvements. The total includes \$1 billion for transmission network upgrades specifically described in this report, along with \$1.5 billion in interconnection and asset renewal projects, infrastructure replacements and relocations, and other smaller network reliability improvements.

While the cost estimate in our 2009 Assessment is slightly less than the \$2.7 billion identified in last year's report, we may increase our overall 10-year capital spending because of increased focus on regional transmission support to move renewable generation to areas where the power is needed. With more than \$2.1 billion invested in the system since 2001, we have become a recognized, national leader in planning, permitting and building electric transmission infrastructure.

Cost estimate of system improvements					
	2005	2006	2007	2008	2009
Total 10-Year Capital Cost	\$3.4B	\$3.1B	\$2.8B	\$2.7B	\$2.5B



Helping to **keep the lights on,**
businesses running and communities strong™



South Central/Southwest Wisconsin and North Central Illinois – Zone 3

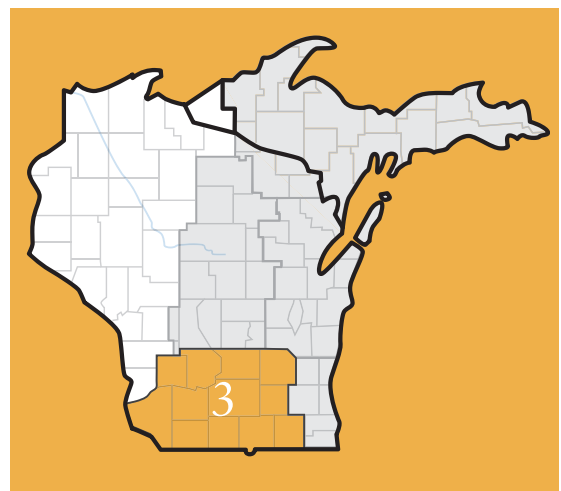
Electric System Overview

Increases expected in population, employment

Population in Zone 3 is projected to grow about 1 percent annually between now and 2019, and employment is projected to grow about 1.4 percent each year for the same time period. Dane County is projected to realize the largest increase in population and employment.

Higher-than-average demand anticipated

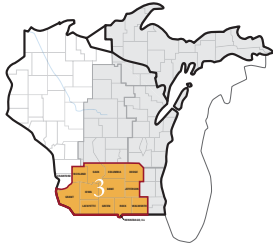
Electric load is expected to grow approximately 2.4 percent annually through 2019 for all of Zone 3. Demand in Dane County is projected to grow at an above-average rate for the ATC system. High demand coupled with generation retirements, concerns about the age and high cost of remaining generators, and stress on the transmission lines that are critical for importing power to Dane County will continue to increase.



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Transmission is the vital link in bringing power to communities

Transmission lines move electricity at high voltages over long distances – from power plants to communities where local utilities deliver power to homes and businesses via distribution lines. A reliable transmission network provides access to many sources of power, whether they are local or regional. Having multiple paths to get power from producers to consumers lessens the chance that they will experience service interruptions. With an increasing emphasis on renewable energy, transmission system planning will become even more important to put the power of wind on the wires.



System Limitations South Central/Southwest Wisconsin and North Central Illinois – Zone 3

Transmission system characteristics in Zone 3

ATC delivers power in Zone 3 with various transmission facilities including:

- a north-south 345-kV line from Illinois extending to Columbia Power Plant
- a north-south 345-kV line from Illinois extending to Paddock Substation
- an east-west 345-kV line from Fond du Lac to Columbia Power Plant and
- 138-kV and 69-kV facilities throughout the remainder of the zone.

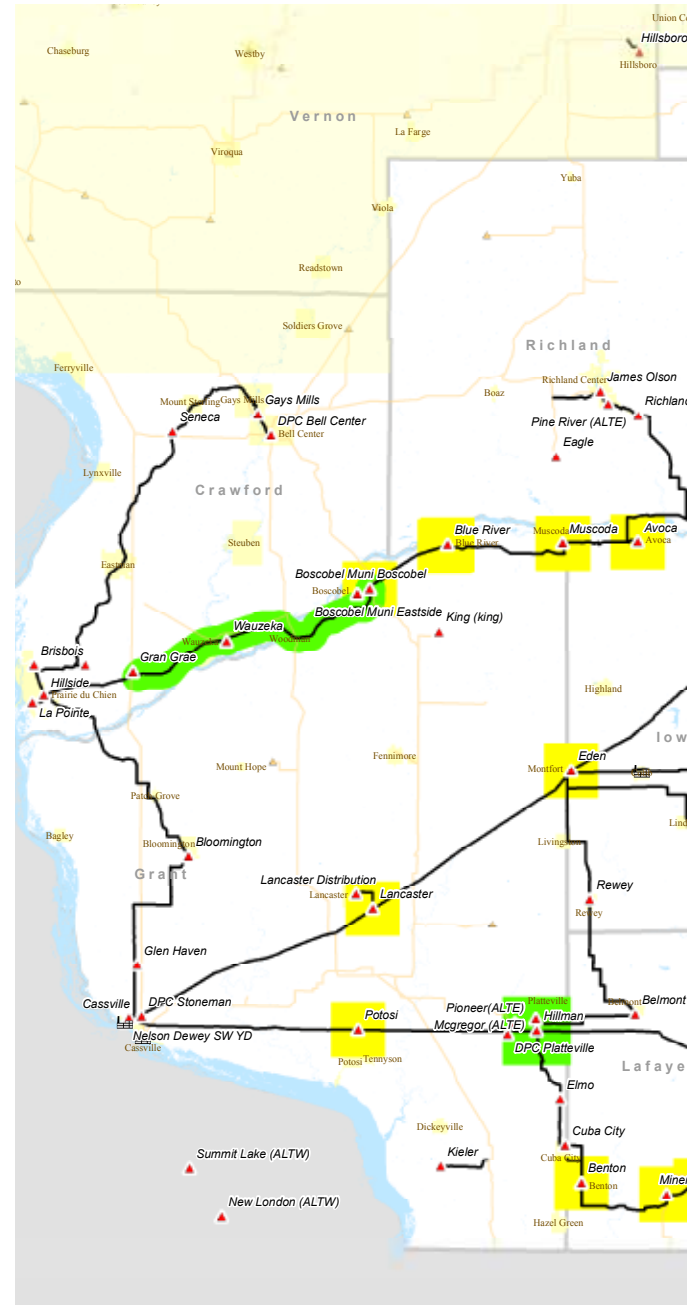
There are a number of transmission system performance issues in Zone 3 including voltage instability, limited import capability, overloaded lines and equipment, and low system voltages throughout the zone. The causes of these emerging problems include steady or rapid growth in certain areas, import capability from Illinois, new power plants and different generation dispatch scenarios.

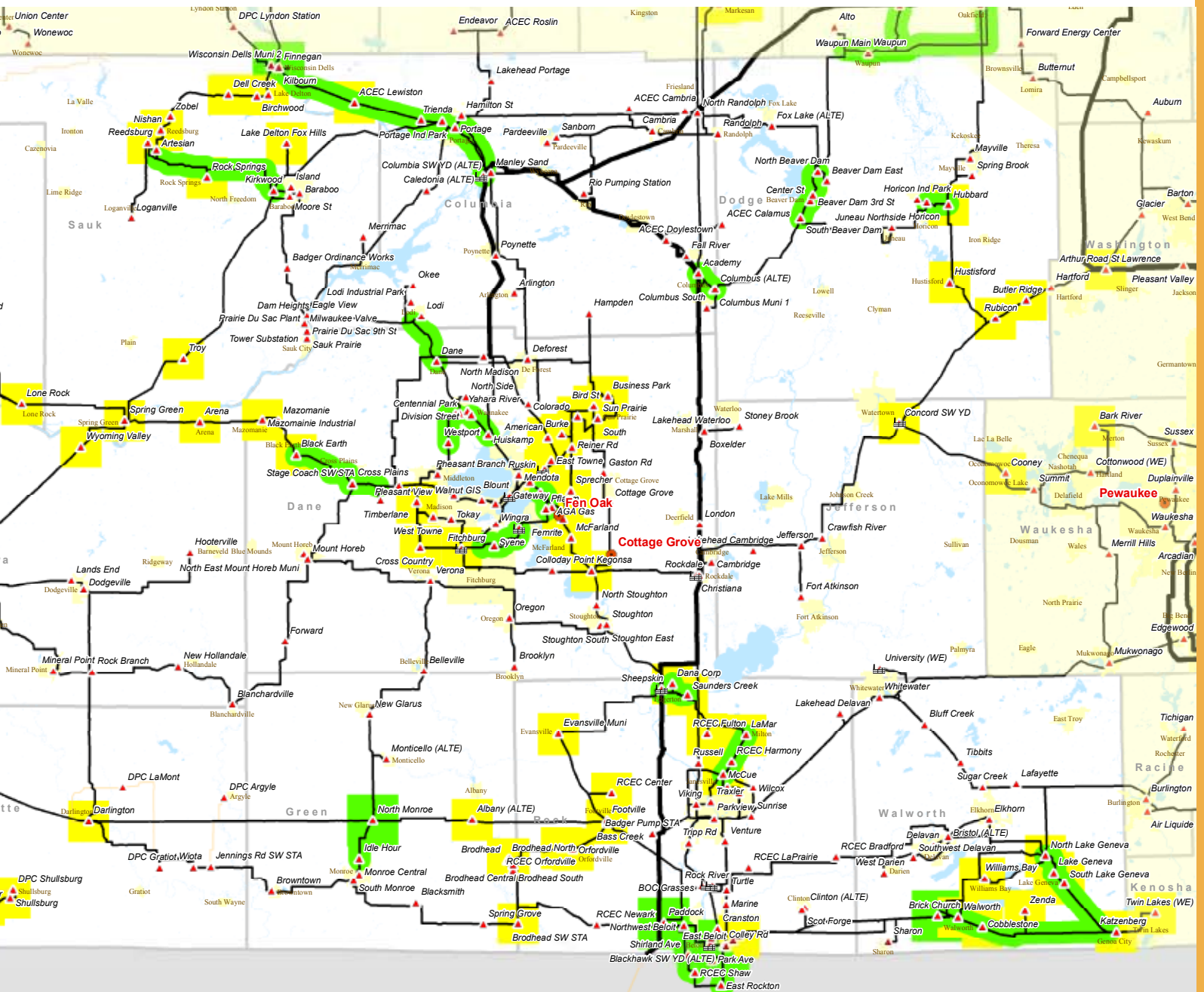
At the start of our Assessment process in October 2008 the Nelson Dewey third generator was deemed likely to move forward, but in early 2009, the generator was withdrawn from the queue. We performed additional analyses to determine the impact of that action, and determined the withdrawal of the third generator and its associated transmission projects did not cause significant impact on the transmission system in Zone 3.

Transmission system limitations in Zone 3

In the analysis of Zone 3, we identified low voltages and transmission facility overloads. Low voltages are particularly serious in the Spring Green, Jefferson, Milton and Brodhead areas. Many overloads on 138-kV and 69-kV facilities throughout Zone 3 are current or emerging concerns.

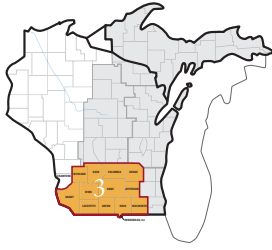
Electric load growth in Dodge and Walworth counties is precipitating the need for major new 138-kV line reinforcements in those areas in the 2012-2018 timeframe. Load growth in southwestern Wisconsin also will necessitate reinforcements to the transmission system in the 2009-2016 timeframe. In addition, the potential for voltage collapse and major 138-kV line thermal overloads in the Madison area is emerging and will require significant transmission reinforcements within the next 10 years.





System Limitations

- Low voltages
- Overloaded facility
- New generation/stability
- Transmission needed for load growth
- Transmission service limiter



Transmission projects in Zone 3

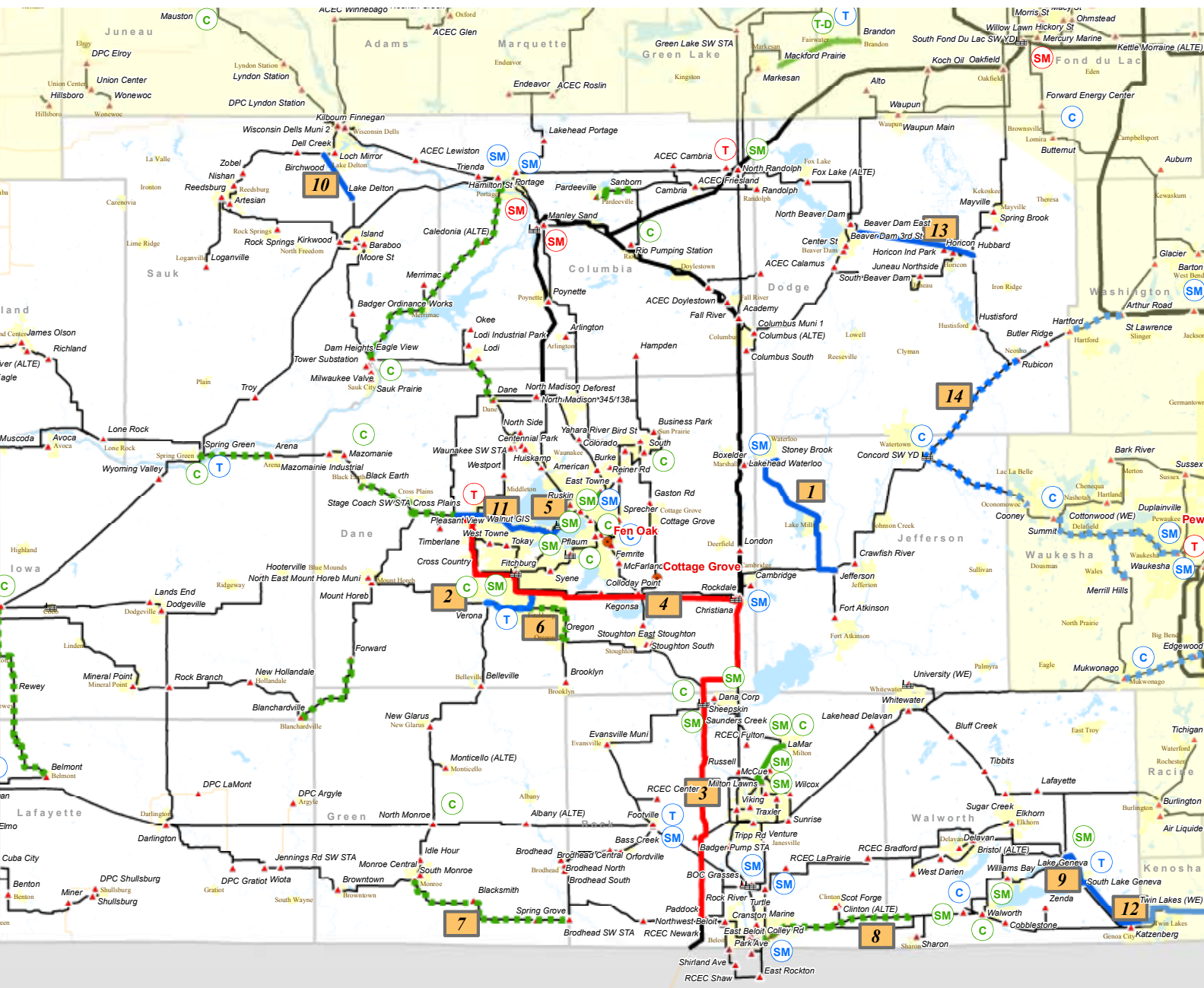
South Central/Southwest Wisconsin and North Central Illinois – Zone 3

ATC has completed 13 network projects in Zone 3 since the 2008 Assessment, most notably the North Madison-Huiskamp 138-kV line project and the Rock River-Bristol-Elkhorn conversion to 138-kV operation.

Keeping up with the rapidly increasing use of the transmission system in Zone 3 will require continued and close coordination with stakeholders. ATC’s current plans in Zone 3 include more than 45 system reliability and economic projects between 2009 and 2023 to address network issues identified. These projects are in various stages of development. The most notable planned, proposed, provisional and asset renewal projects in Zone 3, along with their projected years of completion and the factors driving the need for the projects, are listed below.



	Project description	In-service year	Need driver
	Planned projects		
1	Jefferson-Lake Mills-Stony Brook 138-kV line	2009	Addresses low voltages and overloaded facilities, accommodates T-D interconnection
2	Oak Ridge-Verona 138-kV line	2010	Improve area voltages and address overloads
3	Paddock-Rockdale 345-kV line	2010	Improves access to lower cost sources of power
4	Rockdale-West Middleton 345-kV line	2013	Addresses overloads and low voltages, improves transfer capability to Madison area, averts voltage collapse, lowers system losses
	Proposed projects		
5	Replace two overhead Blount-Ruskin 69-kV lines with one underground 69-kV line	2011	Completion of earlier project per agreement with the City of Madison
6	Verona-Oregon 69-kV line rebuild	2011	Improve area voltages and address overloads
7	Brodhead-South Monroe 69-kV line rebuild	2011	Improve area voltages and address overloads
8	Colley Road-Brick Church 69-kV line rebuild	2013	Address overloads and low voltages
	Provisional projects		
9	North Lake Geneva-South Lake Geneva 138-kV line	2016	Addresses potential overloads and low voltages, transmission to distribution interconnection
10	Lake Delton-Birchwood 138-kV line	2017	Addresses overloads and low-voltage issues in Reedsburg Loop
11	West Middleton-Blount 138-kV line	2017	Addresses overloads and low voltages
12	Spring Valley-Twin Lakes-South Lake Geneva 138-kV line	2018	Addresses overloads and low voltages
13	Horicon-East Beaver Dam 138-kV line	2019	Addresses potential overloads and low voltages
	Asset Renewal projects		
14	Concord-Rubicon 138-kV line rebuild	2013	Improve condition and increase reliability performance of existing line



System Solutions

SUBSTATION KEY

- SS** New substation
Supports transmission system expansion
- SM** Substation modifications
Upgrades equipment ratings to avert facility overloads
- T** Transformer
Supports local growth and improves voltage levels
- C** Capacitor bank
Relieves low voltages
- T-D** T-D interconnection
Supports local growth

TRANSMISSION LINE KEY

- 345-kV transmission line
- ■ ■ Rebuilt 115- or 138-kV transmission line
- ■ ■ Transmission line voltage conversion
- ■ ■ 115-, 138- or 161-kV transmission line
- ■ ■ Rebuilt 69-kV transmission line
- ■ ■ 69-kV transmission line



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Helping to **keep the lights on**, businesses running and communities strong™

ATC AT A GLANCE

- Formed in 2001 as the first multi-state, **transmission-only utility**.
- Owner and operator of approximately **9,400 miles of transmission line and 510 substations**.
- Meeting electric needs of more than **five million people** in 72 counties in four states: Wisconsin, Michigan, Minnesota and Illinois.
- \$2.5 billion** in total assets.

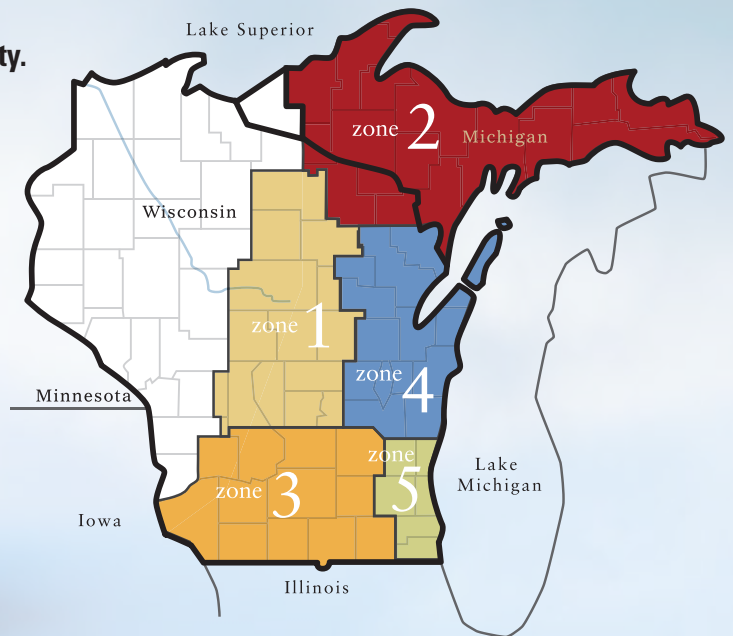
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Would you like a speaker from ATC to address your group? Give us a call, toll-free, at 1.866.899.3204, ext. 6922.