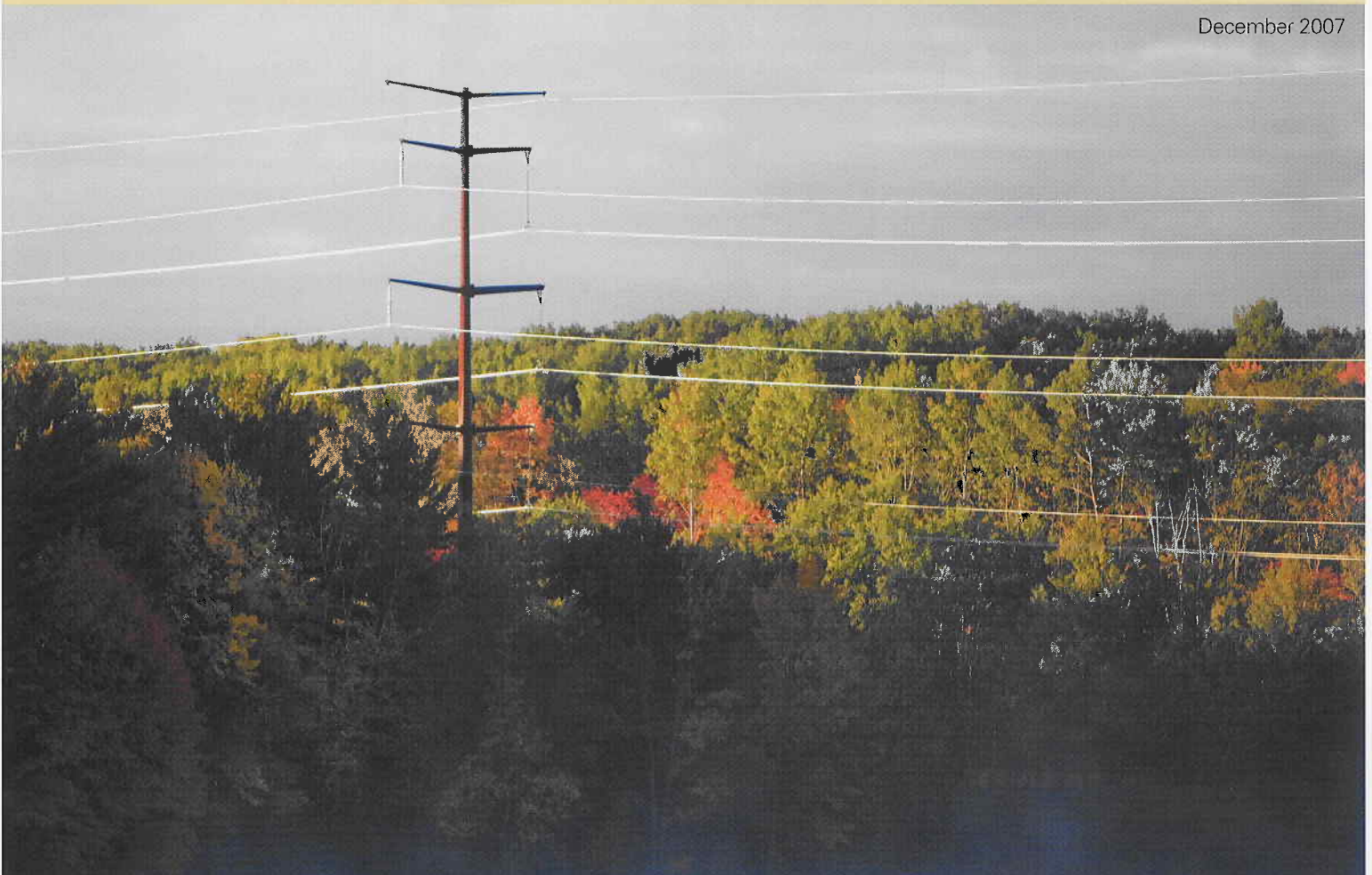


South Central/Southwest Wisconsin and North Central Illinois

2007 10-Year Transmission System Assessment **Update**

A look at electric transmission system limitations and proposed solutions for improving electric system reliability

December 2007



www.atc10yearplan.com

Looking at tomorrow's electric needs today

Advances in technology powered by electricity are improving our quality of life. At the same time, they've created a dependence on and expectation for an uninterrupted supply of electricity. However, the age of the transmission system and changes in the regional wholesale electricity market are impacting the reliability of the electric system upon which people and businesses have become so dependent.

American Transmission Co. was formed in 2001 to plan, permit, build, own, operate and maintain a transmission system that meets the reliability, economic and adequacy 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. Since 2001, ATC has produced annual assessments of the transmission system, identifying areas of need on the system and proposing solutions to those needs.

This document represents an update to our 2006 10-Year Assessment information based on further development of specific needs and projects during the past year. We did not undertake a complete set of new transmission system studies but used information from the 2006 10-Year Assessment to develop projects that will be put into service. These project changes are reflected in this summary.

As part of our technical studies, we take a comprehensive look at various factors affecting electricity utilization in the region, such as business development, employment trends, projected growth in population and electricity usage and savings from energy efficiency efforts.

We look 10 years into the future because it can take up to eight years to plan, study route options, get approvals and build new transmission lines.

Federal oversight increases

In recent years, the federal government has taken additional steps to ensure that transmission-owning utilities, like ATC, have produced and shared planning information with the public and local stakeholders. Since 2001, we have engaged in open and collaborative efforts to share information and solicit input on our plans. We believe that in making our planning efforts transparent and available to the public, the proposals for needed facilities can be more readily understood and accepted by communities that stand to benefit from them. The underlying principles of this approach are now required from utilities that own and plan for new transmission lines. An overview of our planning process is available at www.atc10yearplan.com.



In the years 2008 and beyond, ATC will be conducting additional public outreach, gathering input from our stakeholders early in the 10-Year Assessment process to include in our assumptions and models. We will also meet with interested stakeholders in the middle of the process to review interim results. This process is intended to provide even more openness and

transparency and result in better planning.

Studies indicate need for \$2.8 billion investment over 10 years

In our assessment of the electric transmission system needs through 2016, we estimate \$2.8 billion in system improvements including 353 miles of new transmission lines and upgrades to 652 miles of existing lines across our service area.

The details of our studies can be found at www.atc10yearplan.com.

Transmission is the vital link in bringing power to

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 local electric distribution lines. A reliable transmission network provides access to many sources of power, whether they are local or regional. Having multiple paths



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South Central/Southwest Wisconsin and North Central Illinois

Electric System Overview

Population, employment increasing

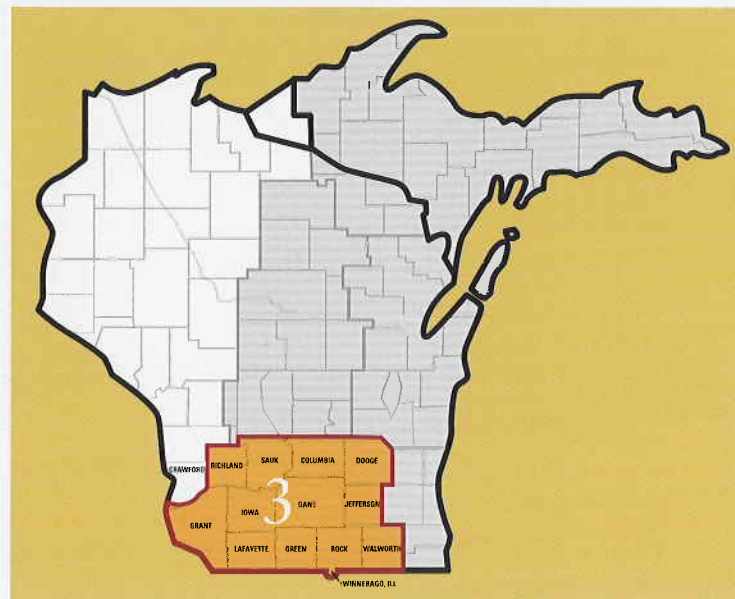
- Population is projected to grow 1 percent annually through 2011. From 2001 to 2006, Dane County realized the largest increase in population, while Walworth County had the highest growth rate.
- Employment is projected to grow 1.7 percent annually through 2011. From 2001 to 2006, Dane County realized the largest increase in employment and the highest growth rate.

Electricity usage growing

- Electric load is expected to grow approximately 2.7 percent annually through 2017 for all of Zone 3. This 2.7 percent projection includes a recent update of the Dane County forecasted loads.
- 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.

Transmission projects completed or under way address electric needs

- **Columbia-Rio project** – In 2006, we completed construction of a new nine-mile, 69-kV line from a substation near Columbia Power Plant to a substation near Rio. The line also will connect to a new Alliant Energy substation.
- **North Madison-Huiskamp project** – The PSC approved our application to build a new five-mile 138-kV transmission line in Dane County. The addition of this line resolves thermal overloads in the area.
- **Rubicon-Hustisford-Horicon project** – The PSC approved our application to build a new five-mile 138-kV transmission line and to convert eight miles of existing 69-kV line to 138-kV operation. These projects will improve voltages in the Dodge County area.



- **Jefferson-Waterloo project** – The PSC approved the addition of a new 12-mile 138-kV line and upgrades to several substations. This project will address voltage violations in the area.
- **Paddock-Rockdale project** – We recently filed an application with the PSC to build a new 35-mile 345-kV transmission line from southern Rock County to southeastern Dane County. This line improves power transfer capability and provides economic savings to ATC’s customers by providing access to more lower cost sources of power outside Wisconsin.
- **Rockdale-West Middleton project** – We recently filed an application with the PSC to build a new 35-55-mile 345-kV transmission line from southeastern Dane County to the west side of Madison. This line improves power transfer capability and improves voltages and thermal overloads.
- **Fitchburg-Verona project** – We recently filed an application with the PSC to build a nine-mile 138-kV transmission line in southern Dane County. This new line will improve voltages and resolve thermal overloads in the southern Dane County area.

communities

to get power from producers to consumers lessens the chance that they will experience service interruptions. Multiple major transmission lines also give power generators and local utilities the flexibility to access regions where they can sell and buy electricity to control overall costs for everyone.

Our 2007 10-Year Transmission System Assessment Update outlines more than 50 projects to ensure electric system reliability in South Central / Southwest Wisconsin and North Central Illinois. These projects are in various stages of development. The following pages describe the system limitations in South Central / Southwest Wisconsin and North Central Illinois and our planned, proposed and provisional projects to address those limitations.

South Central/ Southwest Wisconsin and North Central Illinois

Transmission system characteristics in Zone 3

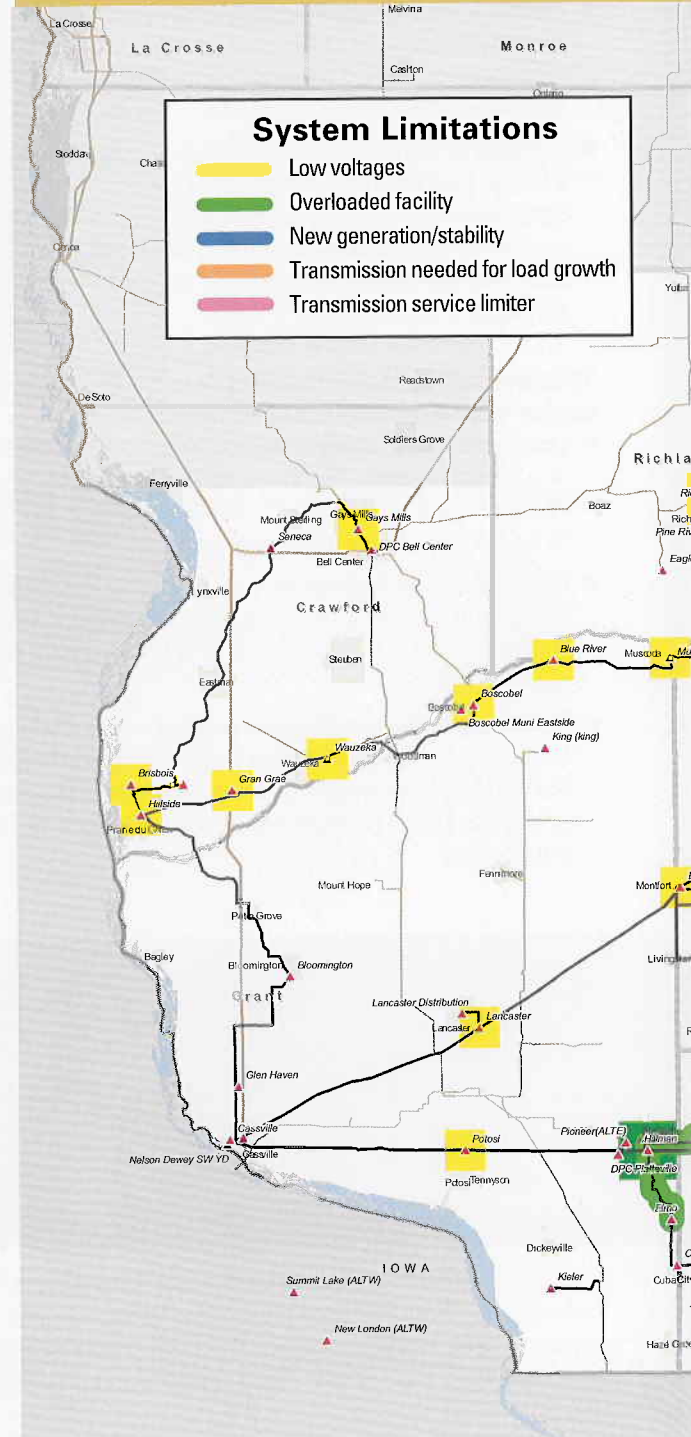
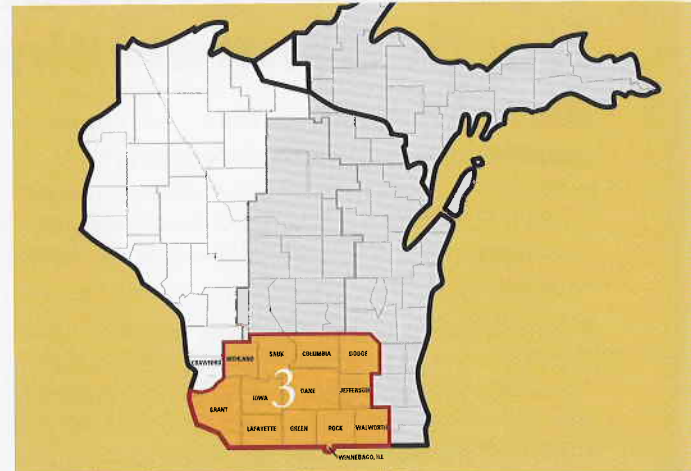
ATC delivers power in Zone 3 with various transmission facilities including:

- a north-south 345-kV line from Illinois extending to the 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, generator instability, limited import capability, chronic transmission service limitations, 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, two new power plants and parallel path flows from new generation in northern Illinois.

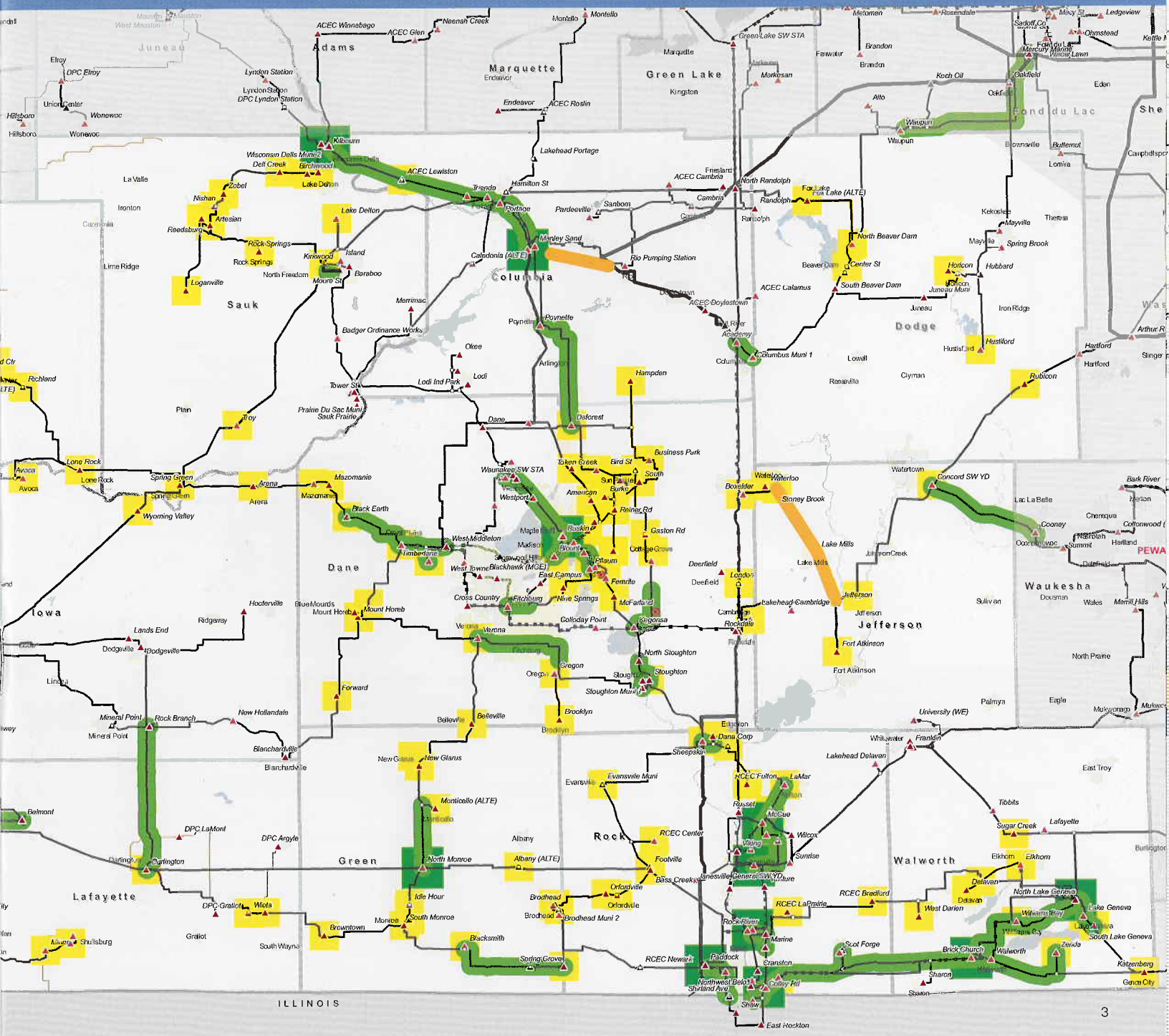
Transmission system limitations in Zone 3

In the analysis of Zone 3 for the year 2007 performed in the 2006 Assessment, we identified low voltages and transmission facility overloads. Low voltages are particularly serious in the Sauk, Dane, Rock and Green county areas. Potential 138-kV line overloads and widespread low voltages in the Madison area are emerging and will require significant transmission reinforcements within the next 10 years. Facility overloads on 138-kV and 69-kV facilities throughout Zone 3 are current or emerging concerns. Electric load growth in Sauk and Walworth counties is precipitating the need for reinforcements in those areas in the 2007-2011 timeframe. Load growth in southwestern Wisconsin will necessitate reinforcements to the transmission system in the 2009-2016 timeframe.



Zone 3 includes the counties of:

- Columbia
- Crawford (southern portion)
- Dane
- Dodge
- Grant
- Green
- Iowa
- Lafayette
- Jefferson
- Richland
- Rock
- Sauk
- Walworth
- Winnebago, Ill. (northern portion)

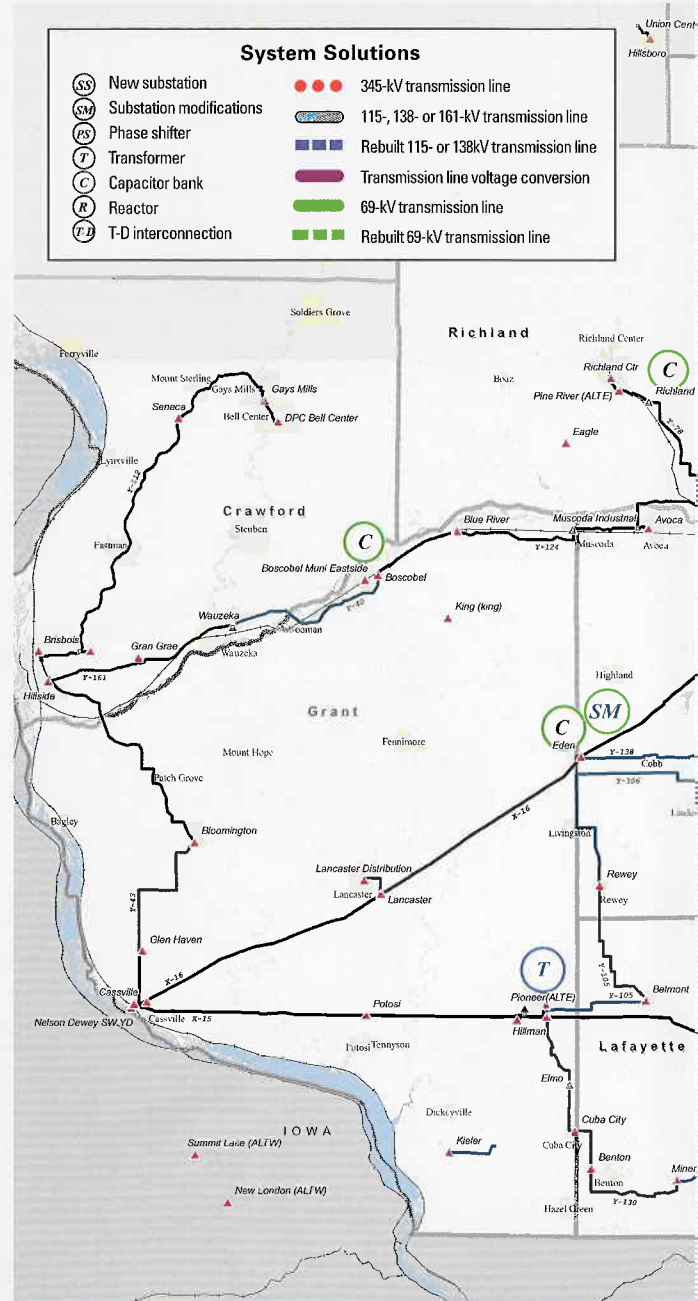
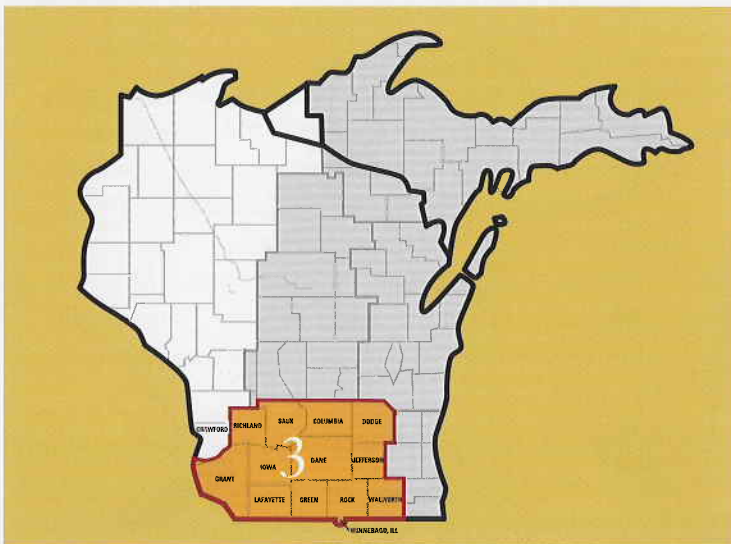


South Central/Southwest Wisconsin and North

Transmission projects in Zone 3

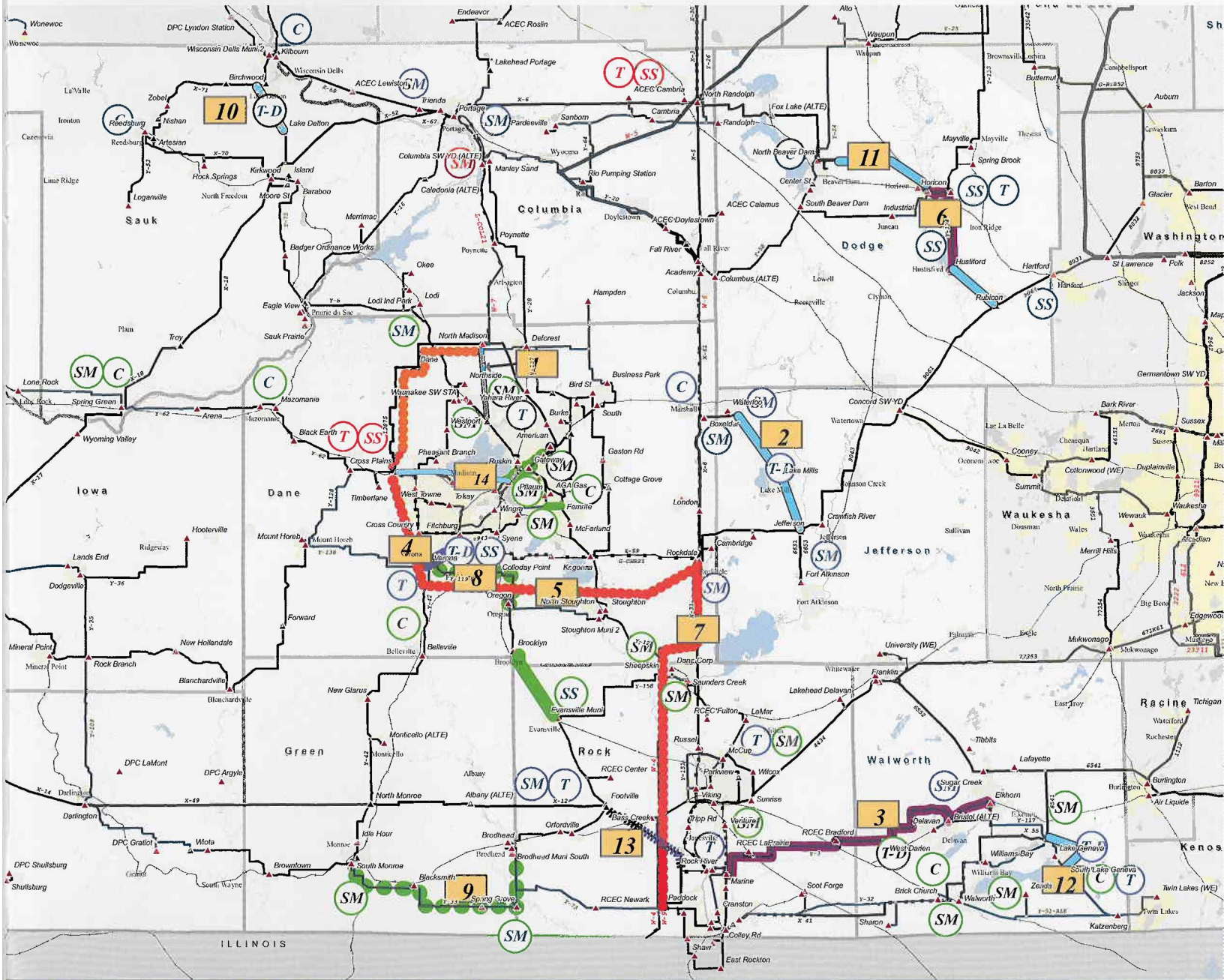
ATC has completed 17 network projects in Zone 3 since the 2006 Assessment, most notably the new Femrite-Sprecher 138-kV line and associated conversion of the Kegonsa-McFarland-Femrite and Sycamore-Reiner-Sprecher 69-kV lines to 138-kV operation.

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 50 projects between 2007 and 2016 to address issues identified. These projects are in various stages of development. The most notable planned, proposed and provisional 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 North Madison-Huiskamp 138-kV line	2008/09	Addresses overloads
2 Jefferson-Lake Mills-Waterloo 138-kV line	2009	Addresses low voltages and overloaded facilities, accommodates T-D interconnection
3 Rock River-Bristol-Eikhorn 69-kV to 138-kV conversion	2009	Addresses overloads and low voltages
4 Fitchburg-Verona 138-kV line	2010	Improves area voltages and addresses overloads
5 Rockdale-West Middleton 345-kV line	2013	Addresses overloads and low voltages, improves transfer capability to Madison area, averts voltage collapse, lowers system losses
6 Rubicon-Hustisford-Horicon 138-kV line	2008	Addresses low voltages
7 Paddock-Rockdale 345-kV line	2010	Improves access to lower-cost sources of power

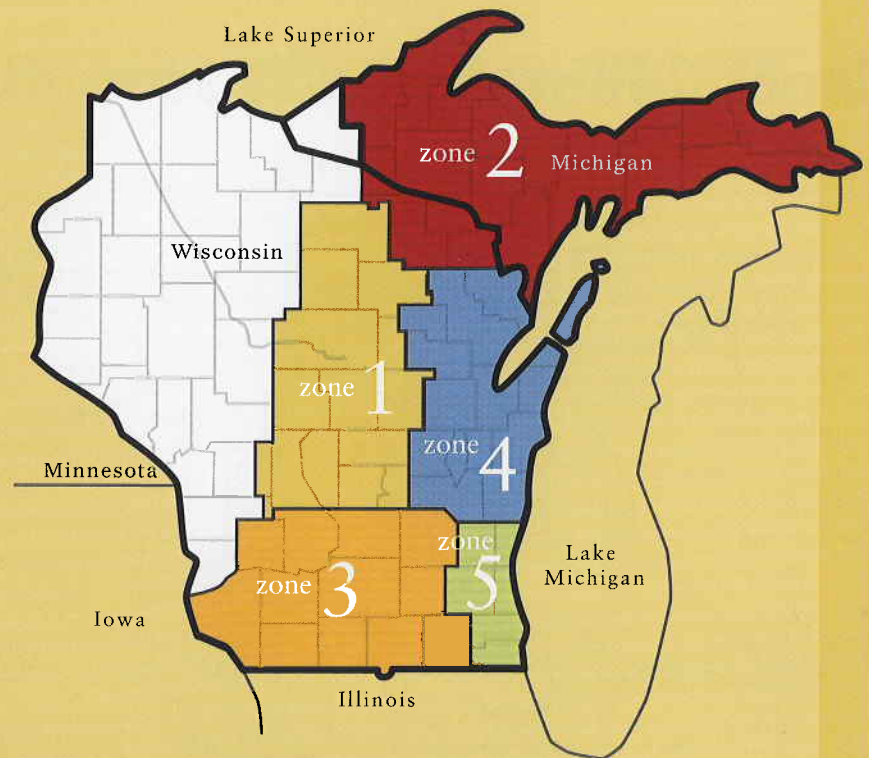
Central Illinois



Project description	In-service year	Need driver
Proposed projects		
8 Verona-Oregon 69-kV rebuild	2011	Improves area voltages and address overloads
9 Brodhead-South Monroe 69-kV rebuild	2011	Improves area voltages and address overloads
Provisional projects		
10 Lake Delton-Birchwood 138-kV line	2013	Addresses overloads and low voltage issues in Reedsburg loop
11 Horicon-East Beaver Dam 138-kV line	2014	Addresses potential overloads and low voltages
12 North Lake Geneva-White River 138-kV line (South Lake Geneva-White River 138-kV line in-service date to be determined)	2012	Addresses potential overloads and low voltages, transmission to distribution interconnection
13 Town Line Road-Bass Creek 138-kV rebuild	2013	Addresses overloads and low voltages
14 West Middleton-Blount 138-kV line	TBD	Addresses overloads and low voltages

ATC at a glance

- Formed in 2001 as the first multi-state, **transmission-only utility**.
- Owner and operator of approximately **9,100 miles of transmission line and 480 substations**.
- Meeting electric needs of approximately **five million people**.
- Transmission facilities in **66 counties** in Wisconsin, Michigan and Illinois.
- **\$1.8 billion** in total assets.
- **Seven offices** in the communities of Cottage Grove, De Pere, Madison, Waukesha and Wausau, Wis.; Kingsford, Mich.; and Washington DC.



As a public utility, we have duties and responsibilities to:

- Operate the transmission system reliably,
- Assess the ability of the system to adequately meet current and future needs,
- Plan system upgrades to meet those needs in the most efficient, effective and economic ways,
- Construct upgrades in time to meet those needs,
- Maintain the transmission equipment and surroundings to minimize opportunity for failures.



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

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