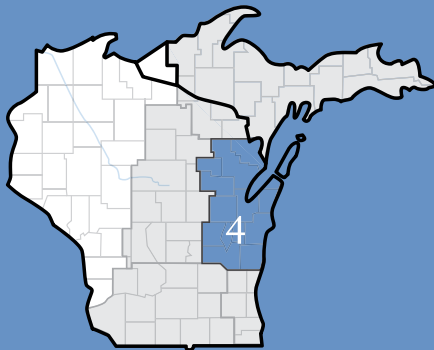




Helping to **keep the lights on**,
businesses running and
communities strong®

An excerpt from ATC's 2011 10-Year Transmission System Assessment
An annual report describing economic and regional solutions to electric reliability needs



Zone 4 – Northeast Wisconsin

- | | | |
|--------------------------------------|---|---------------------------------------|
| BROWN | MANITOWOC | OUTAGAMIE |
| CALUMET | MARINETTE (southern portion) | SHAWANO
(eastern portion) |
| DODGE (northeast corner) | MENOMINEE, MICH.
(southern portion) | SHEBOYGAN |
| DOOR | MENOMINEE, WIS. | WINNEBAGO
(eastern portion) |
| FOND DU LAC (eastern portion) | OCONTO | |
| KEWAUNEE | | |



Economics, public policy increasingly influence transmission planning

Mandatory reliability standards, renewable portfolio requirements affect plans

While reliably meeting the needs of electricity customers is the top priority for any transmission owner, market economics and public policy initiatives are playing a major role in how utilities plan for their system needs. Traditionally, transmission owners performed planning studies and analysis for their individual needs; today, however, while local reliability remains the responsibility of the owner, the trend is toward broader-based planning driven by regional transmission organizations, government agencies and electricity market economics.

Changing the way transmission system costs are allocated also affects the planning as well as permitting for system improvements. Regional planning initiatives increasingly focus on projects that provide additional benefits beyond local-area reliability. These multi-benefit, or Multi-Value Projects (as defined by Midwest Independent System Operator, Inc.), also include economic savings and the ability to move renewable energy from where it is generated to where it can be used. As these projects are identified, regulators from multiple states will need to work together to determine cost sharing as well as permitting. We are working diligently with all stakeholders to design an incremental regional build-out of these projects to move forward efficiently and cost-effectively.

Enforceable, mandatory reliability standards, developed by the North American Electric Reliability Corp. and approved by the Federal Energy Regulatory Commission in 2007, also play a role in how we plan, operate and maintain our system. Earlier this year, NERC issued a set of high-priority reliability issues to help the industry focus on standards setting, compliance, training and education. Several of those priorities, including a changing resource mix and the integration of new technologies, will impact the way we plan and operate our system.

Our planning process also is affected by pending Environmental Protection Agency regulations for electric generators and the recently issued FERC Order 1000 governing regional planning, public policy requirements and cost allocation.

The 2011 Assessment covers the years 2011 through 2020 and indicates a need for \$3.8 to \$4.4 billion in transmission system improvements. The total includes \$1.0 billion in specific network projects, \$1.0 billion in asset maintenance, \$0.7 billion in multi-benefits projects, and this year a range of \$1.1 to \$1.7 billion in other capital categories. Other capital categories can include developing or unspecified network projects, interconnection projects and infrastructure relocation.

Cost estimate of system improvements					
	2007	2008	2009	2010	2011
Total 10-Year Capital Cost	\$2.8B	\$2.7B	\$2.5B	\$3.4B	\$3.8/\$4.4B

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.



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Northeast Wisconsin – Zone 4

Electric System Overview

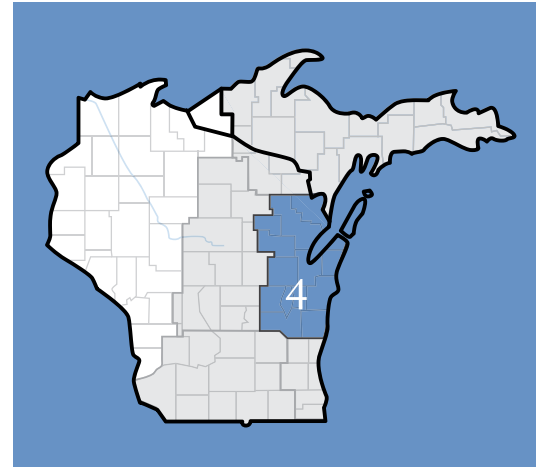
Increases expected in population, employment

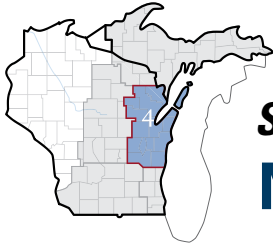
Population in Zone 4 is projected to grow 0.7 percent annually between now and 2020. Outagamie County is expected to realize the largest increase in population. Employment is projected to grow 0.9 percent annually in the same time period, with the largest increase projected in Brown County.

Electricity usage is growing

Peak electric demand typically occurs during the summer months, although the northern portion of Zone 4 typically experiences nearly equal summer and winter peaks. Paper mills and foundries in the Green Bay and Appleton metropolitan areas are some of the largest electricity users in the zone.

Electric load is projected to grow at approximately 0.67 percent annually through 2020. Comparing load with generation (at maximum output) within the zone indicates that Zone 4 has more generation than load during peak load periods.





System Limitations Northeast Wisconsin – Zone 4

Transmission system characteristics in Zone 4

ATC delivers power in Zone 4 with various transmission facilities including:

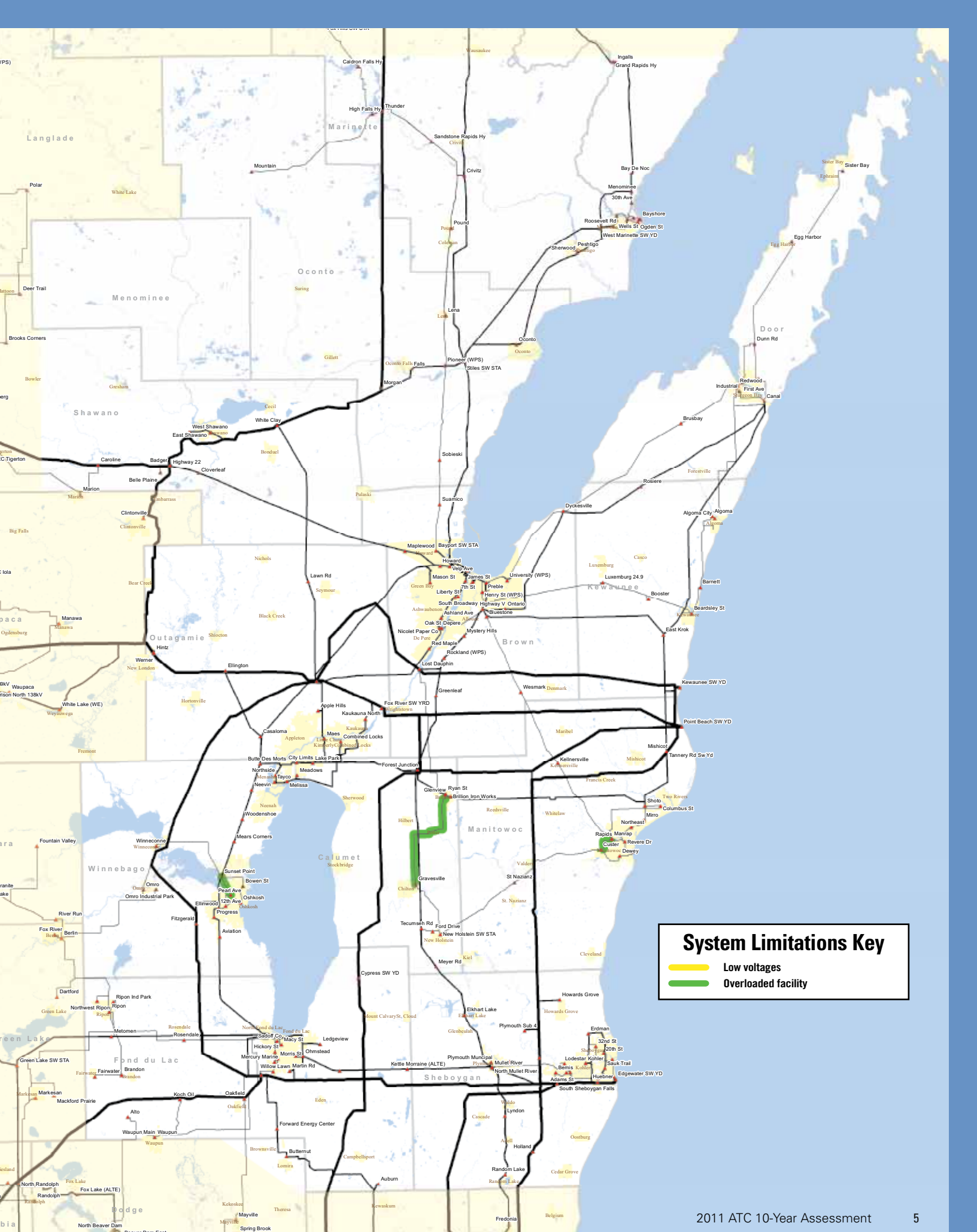
- ▶ Four 345-kV lines extending from the Kewaunee and Point Beach nuclear units,
- ▶ Two 345-kV lines extending from the Edgewater Power Plant,
- ▶ Four 345-kV lines connecting the Gardner Park, Werner West, Morgan, and Plains Substations,
- ▶ Two 345-kV lines from North Appleton to Werner West and Fitzgerald, and
- ▶ Three 345-kV lines connecting South Fond du Lac Substation to the Columbia, Edgewater and Fitzgerald Substations, and
- ▶ A 138-kV network in the Fox River Valley/Green Bay area.

Transmission system limitations in Zone 4

In the analysis of Zone 4, we identified few voltage or thermal limitations as part of this Assessment. However, it should be noted that transmission service limitations during off-peak periods provide very small operating margins.

Zone 4 includes the counties of:

BROWN	FOND DU LAC (eastern portion)	MENOMINEE, MICH. (southern portion)	SHAWANO (eastern portion)
CALUMET	KEWAUNEE	MENOMINEE, WIS.	SHEBOYGAN
DODGE (northeast corner)	MANITOWOC	OCONTO	WINNEBAGO (eastern portion)
DOOR	MARINETTE (southern portion)	OUTAGAMIE	

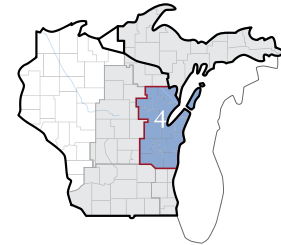


System Limitations Key

- Low voltages
- Overloaded facility

Transmission projects in Zone 4

Northeast Wisconsin – Zone 4



We have implemented one project in Zone 4 since the 2010 Assessment, which was the Kewaunee Substation bus reconfiguration and addition of a second 345/138-kV transformer.

Our current plans in Zone 4 include 14 system reliability and economic projects between 2011 and 2025. These projects are in various stages of development. The most notable planned, proposed, provisional and asset renewal projects in Zone 4, along with their projected year of completion and the factors driving the need for the projects, are listed below.

	Project description	In-service year	Need driver
Planned projects			
1	Canal-Dunn Road 138-kV line	2012	Overloads and low voltages
Proposed projects			
2	Barnhart-Branch River project	2018	Accommodate new generation
3	Barnhart-Plymouth-Howards Grove-Erdman 138-kV line*	2018	Accommodate new generation
Provisional projects			
4	Dunn Road-Egg Harbor 69-kV line	2021	Low voltages and provide network service
5	Shoto-Custer 138-kV line	2022	Overloads
Asset Renewal projects			
6	Replace Edgewater 138/69-kV transformers	2012	Condition and performance
7	Pulliam-Stiles 138-kV line replace shield wire	2013	Condition and performance
8	North Appleton-Butte des Morts-Neevin 138-kV line rebuild	2015-2017	Condition and performance
9	First Avenue-Redwood 69-kV submarine cable replacement	2015	Condition and performance
10	Custer-New Holstein 69-kV line rebuild	2015	Condition and performance
11	Dyckesville-Sawyer 69-kV line rebuild	2016	Condition and performance
12	Neevin-Woodenshoe-Mears Corners-Sunset Point 138-kV line rebuild	2016	Condition and performance
13	Finger Road-Danz Ave 69-kV line rebuild	2016	Condition and performance
14	Oak Street-Highway V 69-kV line rebuild	2016	Condition and performance
15	Wesmark-Manrap 69-kV line rebuild	2016	Condition and performance
16	University-Danz Avenue 69-kV underground cable replacement	2017	Condition and performance
17	Bayport-Sobieski-Pioneer 69-kV line rebuild	2018	Condition and performance
18	Caldron Falls-Goodman 69-kV line rebuild	2019	Condition and performance
19	Erdman-Lodestar 138-kV underground cable replacement	2019	Condition and performance
20	Finger Road-Canal 69-kV line rebuild	2020	Condition and performance
21	Edgewater-Erdman 69-kV underground cable replacement	2021	Condition and performance

*This project is contingent on the route selected for the Barnhart-Branch River project

System Solutions Key

SUBSTATION KEY

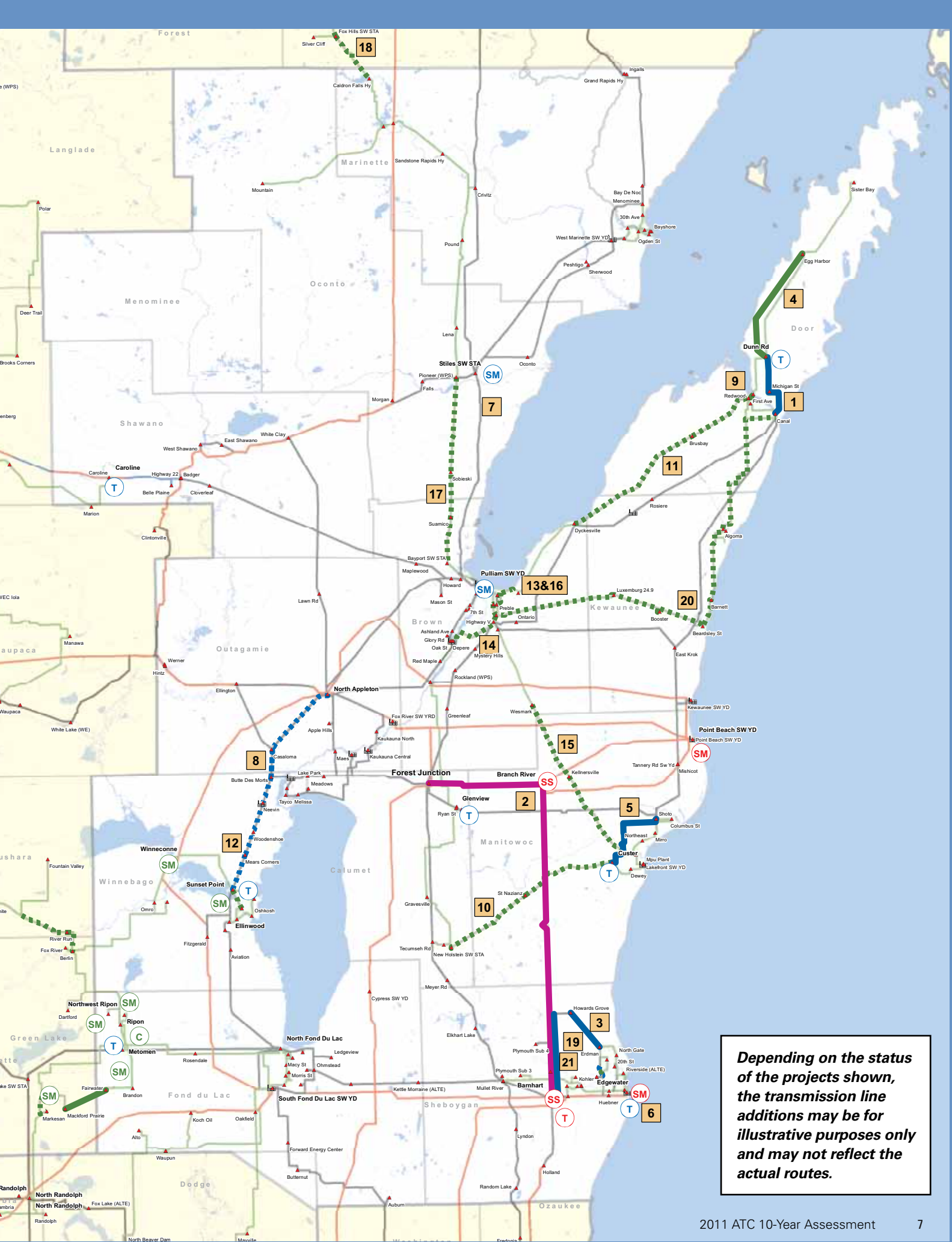
- SS** New substation
Supports transmission system expansion
- SM** Substation modifications
Upgrades equipment ratings to avert facility overloads
- T** Transformer
Supports local growth and improves voltage levels
- C** Capacitor bank or reactor
Relieves low voltages or high voltages
- T-D** T-D interconnection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

TRANSMISSION LINE KEY

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

EXISTING TRANSMISSION LINES KEY

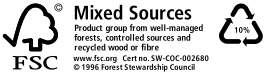
- ▬ 69 kV
- ▬ 115 kV
- ▬ 138 kV
- ▬ 161 kV
- ▬ 230 kV
- ▬ 345 kV



Depending on the status of the projects shown, the transmission line additions may be for illustrative purposes only and may not reflect the actual routes.



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ATC AT A GLANCE

- Formed in 2001 as the first multi-state, **transmission-only utility**
- Owner and operator of approximately **9,440 miles of transmission line and 515 substations**
- Meeting electric needs of more than **five million people** in 72 counties in four states: Wisconsin, Michigan, Minnesota and Illinois
- \$2.9 billion** in total assets

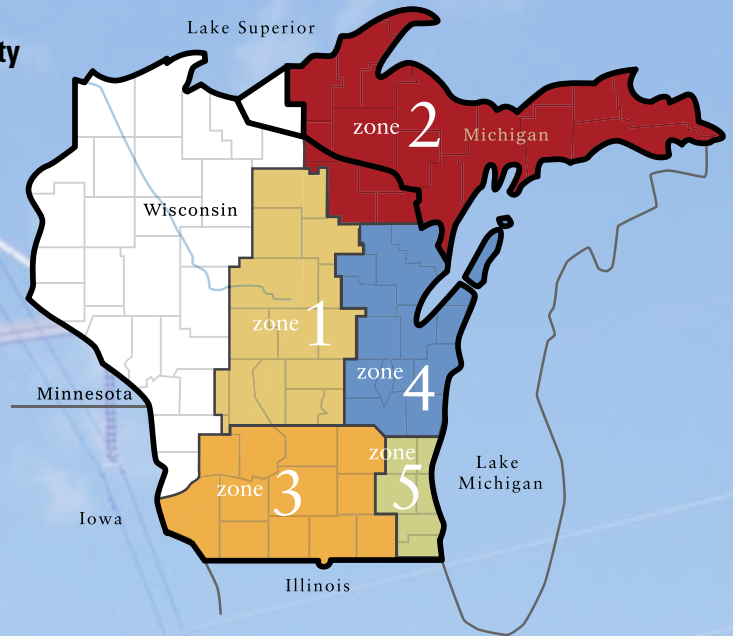
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**Would you like a speaker from ATC to address your group?
Give us a call, toll-free, at 1.866.899.3204, ext. 6922.**

