AMERICAN TRANSMISSION COMPANY®

Summary Report

September 2012

The Future Grid

10-Year Transmission System Assessment

www.atc10yearplan.com

Regional and inter-regional planning achieves results

Transmission investments solve problems, save money

Since last year's report, industry stakeholders have made progress within the Midwest Independent Transmission System Operator (MISO) and with neighboring systems to more seamlessly plan transmission solutions that reduce congestion and enable public policy initiatives. Wide-scale planning methodologies that improve reliability while providing economic savings and access to renewable energy resources continue to evolve, and American Transmission Co. continues to play a leadership role.

In a major step forward, MISO approved its first portfolio of regional Multi-Value Projects in December 2011. This portfolio was developed using an 18-month value-based planning process with extensive stakeholder involvement to ensure reliability and regional economic benefits commensurate with costs while supporting energy policy mandates. MISO estimates that the average utility customer in the region will see $23 in benefits from lowered delivered energy costs for about $11 a year in investment – a 109-percent return. Three of these MVP proposals fall within ATC's service territory. (See page 6 for an update.)

By easing congestion on the system and providing access to lower-cost sources of generation, transmission investments help

Transmission investments

The 10-year projections from past and current Transmission System Assessments

	2008	2009	2010	2011	**2012**
Specific Network Projects	$1.3B	$1.0B	$1.0B	$1.0B	**$1.9B**
Regional Multi-Value Projects	$0.0B	$0.0B	$0.7B	$0.7B	**$0.8B**
Asset Maintenance	$0.5B	$0.7B	$0.7B	$1.0B	**$1.1B**
Other Capital Categories	$0.9B	$0.8B	$1.0B	$1.1B/$1.7B	**$0.1B/$1.0B**
Total 10-Year Capital Cost	$2.7B	$2.5B	$3.4B	$3.8B/$4.4B	**$3.9B/$4.8B**

keep electric rates in check. When the Midwest wholesale energy market was established in 2005, the average locational marginal price (LMP) within our footprint was more than $10 higher per megawatt hour than the average in neighboring states. In 2011, the LMP was only 10 cents higher. We estimate that of the 13 transmission projects we completed in 2011, 88 percent of the cost will be offset by savings in energy prices over the life of the project.

With reliability needs firmly ensconced as a priority, our planners continue to work with other industry stakeholders to identify and implement solutions for a cost-effective build-out of the regional electricity grid. Smart Grid technologies will increasingly play a role in improving the operator's ability to control the grid as well as to better integrate renewable resources.

Our planning and asset management departments are implementing a new study-based ratings methodology for overhead conductors to better manage operational risk of conductor damage and clearance problems. When ATC began operations in 2001, the company adopted the ratings methodologies of the founding utility companies. Industry benchmarking and recent best practices indicated a need for a review of those methodologies. Since weather is an important factor in the development of transmission line ratings, we contracted with the Electric Power Research Institute to complete a weather parameters study. The new Study-Based Ratings Methodology gives increased confidence that our rating modeling more closely represents actual field conditions.

The 2012 Assessment covers the years 2012 to 2021 and indicates a need for $3.9 to $4.8 billion in transmission system improvements. The total includes nearly $2 billion in specific network projects, $1.1 billion in asset maintenance and $0.8 billion in Multi-Value Projects. Other capital categories can include developing projects, unspecified network projects, interconnections and infrastructure relocation.

The planning zone summaries included in this report detail specific projects identified to improve reliability, access to the market and renewable energy resources. A more comprehensive listing of these plans is available at our website **www.atc10yearplan.com**.

Paul Jett
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Strategic Projects

Ron Snead
Director of
System Planning

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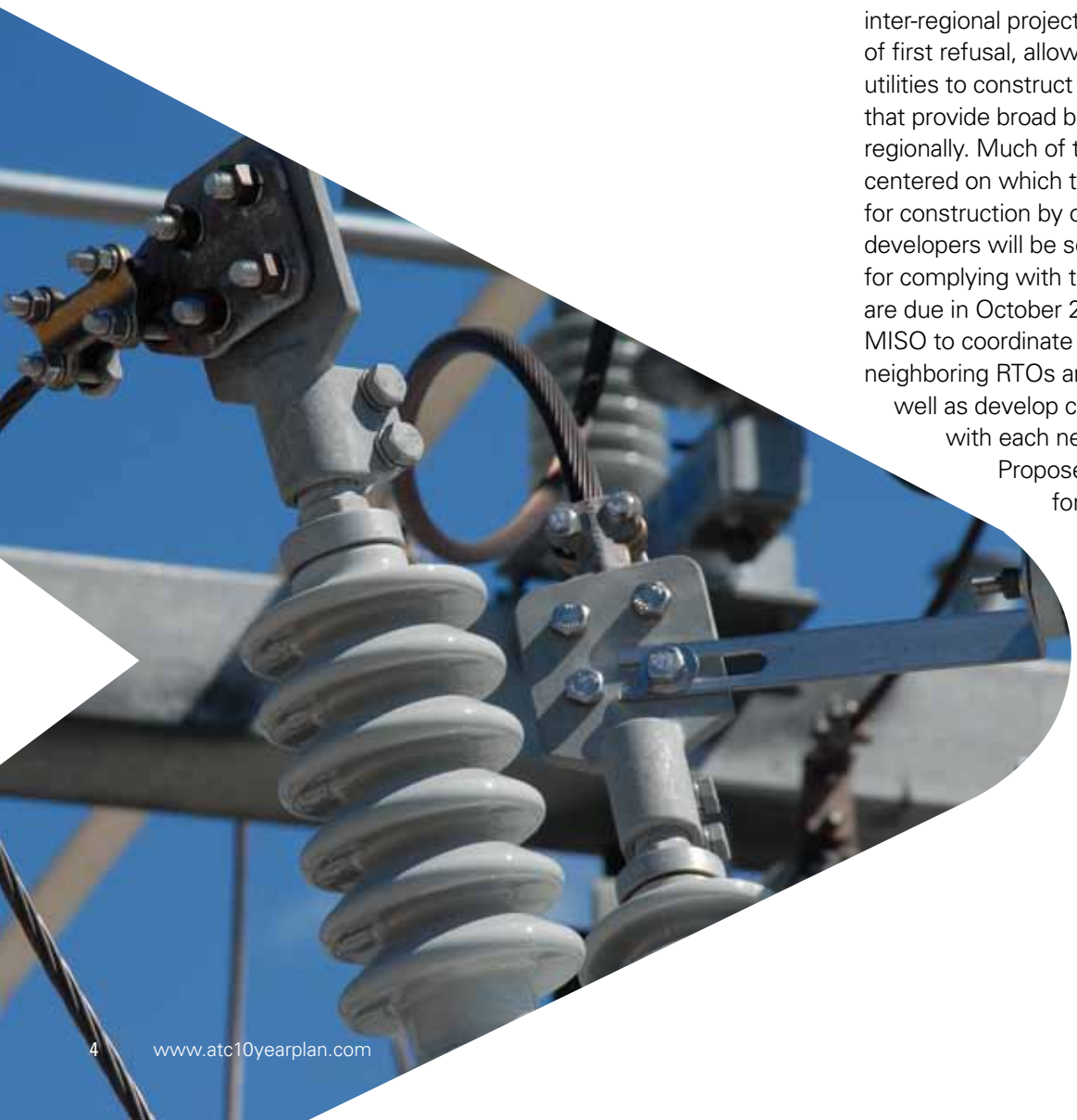
Asset Management

Regional and economic planning initiatives provide economic benefits, pave way for future grid



While electric reliability has been and always will be the top priority for transmission owners and operators, the interconnected grid has begun to serve other significant energy-related needs. Regional and economic planning increasingly focuses on strategic, purposeful projects that provide local and regional economic and market benefits as well as those that address other factors in play: carbon-reduction initiatives, renewable generation, regulatory changes and aging power plants.

FERC Order 1000

ATC is a participant in stakeholder discussions about MISO's compliance with the Federal Energy Regulatory Commission's Order 1000. Issued in 2011, Order 1000 requires MISO and other regional transmission organizations and transmission providers to plan for public policy requirements such as renewable portfolio standards and EPA regulations. The order requires every RTO to have cost-allocation methodologies for regional and inter-regional projects. The order also removes a right of first refusal, allowing parties other than incumbent utilities to construct certain transmission projects that provide broad benefits, with the costs shared regionally. Much of the stakeholder discussion has centered on which types of projects will be eligible for construction by other developers and how the developers will be selected for those projects. Plans for complying with the order's regional requirements are due in October 2012. The order also requires MISO to coordinate its planning with PJM and other neighboring RTOs and transmission providers, as well as develop cost-allocation methodologies with each neighbor for inter-regional projects. Proposed inter-regional compliance plans for MISO and each neighboring region are due to FERC in April 2013.

Eastern Interconnection Planning Collaborative

A group of 26 Planning Authorities is in Phase Two of a multi-year effort to develop transmission expansion scenarios for the Eastern Interconnection. ATC has received funding from the Department of Energy and is actively participating in the collaborative.

In Phase One, the collaborative developed eight energy policy future scenarios and analyzed the generation additions and deactivations, as well as the transmission interchanges between regions associated with those scenarios. Three scenarios were selected for more detailed study in Phase Two. The possible transmission development options in Phase Two scenarios will be analyzed using North American Electric Reliability Corp. reliability criteria and traditional transmission planning tools. The scenarios also will undergo production-cost analysis. Both alternating current and direct current lines are being considered. More information on this effort can be found at **www.eipconline.com**.

MISO Transmission Expansion Planning

ATC participates in MISO planning studies that address long-term, short-term and targeted issues and needs. The long-term studies are primarily value-based economic studies looking into a 10- to 20-year horizon. These studies use different future scenarios agreed upon by the MISO stakeholders and measure the economic savings from proposed transmission projects. Short-term planning examines a five- to 10-year horizon and is primarily driven by transmission owners' reliability needs and compliance with NERC reliability standards.

MTEP12

Our strategic projects staff is participating in this current short-term planning review by contributing project information, helping build and review planning models, and correlating the needs identified in the MISO analyses with specific ATC projects.

Other MISO planning activities

We participate in MISO's Planning Subcommittee and Western Technical Studies Task Force, as well as in the Planning Advisory Committee to the MISO Board of Directors. We also participate in or observe other MISO planning activities that involve generation and interconnection studies.

Northern Area Study

MISO launched a Northern Area Study in June 2012 to address a number of transmission proposals and issues in Manitoba, North Dakota, South Dakota, Minnesota, Wisconsin and Michigan. The drivers for the study include:

- potential addition of generation and imports from Manitoba Hydro,
- potential generation retirements driven by EPA regulations,
- multiple transmission lines proposed by a number of transmission owners,
- potential load growth in Michigan's Upper Peninsula, northern Wisconsin and North Dakota, and
- a need to improve system reliability in the study area.

The analysis aims to identify the economic opportunity for transmission development, develop proposals to address regional needs, calculate the costs and benefits, and identify the most valuable proposal or proposals for further consideration.

Market constraints

Two of the three narrowly constrained areas within the MISO footprint are in our service area. While congestion has declined in these areas of Wisconsin and Upper Michigan – in part due to the completion of the Paddock-Rockdale 345-kV line and generation additions – congestion remains during more than 500 hours each year. We continue to work actively within the MISO planning process to identify and resolve the underlying constraints on our system and to provide better access to the wholesale energy market.

Major project updates

Badger Coulee

The Badger Coulee project was one of 17 Multi-Value Projects approved by the MISO board of directors in late 2011. The 150-mile, 345-kV line between the La Crosse and Dane County areas will deliver benefits to Wisconsin and the Midwest region in three important ways:

- Improving electric system reliability locally and regionally
  - Offsetting the need for about $180 million ($140 million in the ATC service area) in lower-voltage upgrades in western Wisconsin communities
- Delivering economic savings for Wisconsin utilities and consumers
  - Providing increased access to the wholesale energy market and improving grid efficiency
  - Could provide $230 to $962 million in net economic benefits over the life of the project
- Expanding infrastructure for greater use of renewable energy
  - Establishes another pathway for renewable energy into Wisconsin with connection to key load centers

Public outreach on the project was initiated in 2010; preliminary route alternatives have been identified and an application is expected to be filed with the Public Service Commission of Wisconsin in 2013.

Pleasant Prairie–Zion Energy Center

Regulators in Wisconsin and Illinois approved the Pleasant Prairie-Zion Energy Center project earlier this year. This MVP will help relieve transmission system congestion in the region surrounding the southern tip of Lake Michigan. The project will provide savings to electric utilities and their customers by enabling the most efficient generators to supply power to the energy market, allowing utilities to buy and sell power when it is economic to do so. It also will increase electric system reliability, locally and regionally, by adding an additional high-voltage connection between Illinois and Wisconsin. Construction of the six-mile, 345-kV line will begin in late 2012 for an in-service date in 2013.

Cardinal Bluffs

Our third MVP proposal (formerly known as the Dubuque-Spring Green-Cardinal 345-kV project) will provide benefits that exceed its cost. Similar to Badger Coulee, Cardinal Bluffs will improve local and regional reliability, deliver economic benefits by providing greater access to the wholesale market, and enable Iowa to bring more renewable generation to market. This 125-mile line will run from the Cardinal Substation in the Town of Middleton, Wis., to northern Dubuque County. Public outreach for routing and siting will begin later in 2012. Regulatory applications are scheduled to be filed in 2014 to meet an in-service date of 2018.

Bay Lake

In April 2012, we announced a package of proposals to address the delicate, shifting balance between generation, load and transmission in the northern region of our system. The Bay Lake Project, as originally proposed, includes:

- a 345-kV line from a new substation in the Green Bay area to an expanded National Substation near Ishpeming, Mich.,
- a 138-kV line from the new Green Bay area substation to the Morgan Substation near Oconto Falls, Wis., and
- two 138-kV lines between the Holmes Substation in Menominee County, Mich., and the Escanaba, Mich., areas.

We requested MISO to review these projects outside the traditional MTEP process. At the time of publication, MISO has approved a portion of the proposed facilities to meet a late 2016 in-service date. For the most current information, please refer to our projects website: **www.atc-projects.com**.

Barnhart-Branch River

This 345-kV line and two new substations are needed to address equipment modifications and an associated increase in generating capacity at the Point Beach Nuclear Plant in Manitowoc County, Wis. The 51-mile line would significantly improve reliability of the high-voltage grid in eastern Wisconsin and connect the new Barnhart Substation in Sheboygan County with the new Branch River Switching Station in Manitowoc County. Two route alternatives were developed with public involvement, and an application will be filed with the PSC in late 2012. If approved, the facilities would be placed in service in 2018.

Straits HVDC Flow-Control

Construction began in early 2012 on a high-voltage, direct-current flow-control device near the Straits Substation in St. Ignace, Mich., to better manage power flows into and out of the Upper Peninsula. This project will enable MISO to control the flows into and out of the U.P., helping to accommodate the transmission of renewable wind energy being developed in the resource-rich region to our west. The $130-million project is expected to go into service in 2014. Planning studies determined the flow-control device to be a less-expensive and faster solution compared to the portfolio of transmission lines studied as alternatives.

Our progress

ATC's interstate connections

Interstate 345-kV transmission connections prior to 2001

Interstate 345-kV transmission connections added since 2001

Proposed MVP transmission connections

Our long-term access initiative, launched in 2005, has demonstrated that reliability projects have significant economic benefits as well. Locational marginal prices in our service territory are now aligned with those in neighboring hubs. When we began operations in 2001, our interconnections with other states were used to import power. With the increased connections to neighboring transmission facilities, our customers now have the opportunity to export power when it is economically desirable to do so.

We have invested $2.7 billion in improvements that have enhanced system reliability in the last 11 years. Increasingly, we see those investments reflecting the trend toward more regional planning that improves broader-area reliability and strengthens the bulk electric markets. Even with this considerable investment, transmission cost remains the smallest component of a retail customer's electric bill – about 8 percent in our case. (Retail customers pay for the generation, transmission and distribution of electricity, plus fuel costs, through regulated utility rates. Generation and fuel make up the major portion of the bill, followed by distribution infrastructure.)

Effective management of existing assets complements our planning strategy for maintaining and improving reliability. Equipment life cycles and replacement plans are driven by safety, regulatory compliance, reliability performance and environmental stewardship.

Our asset management personnel have maintained top-tier reliability performance while managing a robust construction program. Our 115-kV, 138-kV and 345-kV lines operated in the top 10 percent for reliability performance in 2011, when benchmarked against 24 transmission entities. Our 69-kV lines were in the top 25 percent. While our facilities are performing well, targeted investment is needed to maintain reliability.

Major accomplishments to date

Since we were formed in 2001 as a utility solely focused on electric transmission, we have:

- upgraded more than 1,748 miles of transmission line,
- improved 155 electric substations and
- built 45 new transmission lines (557 miles).

A more reliable transmission system has enabled us to:

- meet a new peak load in 2011 with no customer interruption,
- maintain top reliability performance,
- support approximately 1,200 MW of new peak electric usage,
- connect 6,048 MW of new generation at 24 sites,
- increase the ability of our system to import power by 750 MW,
- reduce energy losses over the 40-year lives of our completed projects at a level that equates to:
  - 15-19 million megawatt hours of electricity saved (enough to power 36,000-45,500 homes each year)
  - 10-14 million tons of CO_2 emissions (associated with producing lost energy) eliminated
  - averting the need for a 124-154 megawatt generating plant to serve peak demand
- resolve problems in 18 specific areas to move power into or through our system:
  - Arrowhead-Weston (Northwestern Wisconsin)
  - Blackhawk-Colley Road (Rock County)
  - Christiana-Kegonsa (Dane County)
  - Cranberry-Conover-Plains (Northern Wisconsin and Upper Peninsula of Michigan)
  - Eau Claire-Arpin (Wood County)
  - Gardner Park-Central Wisconsin (Marathon and Shawano counties)
  - Kewaunee (Kewaunee County)
  - Manistique-Hiawatha (Schoolcraft and Mackinac Mich. counties)
  - Morgan-Werner West (Shawano, Waupaca, Outagamie and Oconto counties)
  - North Madison-Huiskamp (Dane County)
  - North Appleton-Lost Dauphin (Outagamie and Brown counties)
  - North Appleton-White Clay (Outagamie and Shawano counties)
  - Paddock-Rockdale (Dane and Rock counties)
  - Paris-St. Martins (Kenosha, Racine and Milwaukee counties)
  - Plains-Stiles (Oconto, Marinette, Menominee Wis., and Dickinson, Mich. counties)
  - Rhinelander area (Lincoln, Oneida and Langlade counties)
  - Wempletown-Paddock (Rock County and northern Illinois)
  - Whitewater-Mukwonago (Walworth and Waukesha counties)

We have made progress by actively seeking input and making our plans and proposals public. To date, ATC has:

- produced and issued 17 transmission system assessments to the public,
- held dozens of major public planning and siting meetings and
- participated in thousands of interactive local, state and industry discussions, both giving and receiving information to carry out our duties and responsibilities.

What drives the need for transmission system expansion?

Economics – We evaluate the impact of transmission congestion on energy market prices and study projects to determine economic savings to offset most or all of the congestion and loss costs. An example is evaluating increased access to markets outside our footprint.

Solution: Two projects have been completed, two are planned, four are proposed, and another two provisional projects are being studied.

Renewables/Public Policy – All of the states in which we operate and most other Midwestern states have adopted renewable portfolio standards.

Solution: We are participating in several regional transmission studies to identify the transmission needed to integrate renewable generation, including wind, much of which could be located in areas remote from large load centers.

Load growth – Demand for electricity during peak usage periods is projected to grow at a rate of approximately 0.9 percent across our service territory from 2013 through 2022.

Solution: More than **110** projects are planned for assuring reliability, at least in part due to load growth.

Distribution interconnections – The transmission system is dynamic; changes in the marketplace, as well as changes in generation – new plants coming on line, older units being retired – drive the need for additional transmission-to-distribution interconnections.

Solution: **197** interconnections are planned in the next 10 years. More than **297** new or improved T-D interconnections have been made since 2001.

New generation – When a new generating facility is proposed, we conduct a system impact study and, if requested, a facilities study. If the existing transmission system is inadequate to ensure generator stability or reliable transmission service, we will determine what system expansion will be needed.

Solution: **11** generators are active in our generation queue, and many reflect the growing development of wind energy. **24** generators added since 2001 required construction of transmission facilities.

Asset renewal – Keeping transmission lines, substations and related equipment in good operating condition extends the life of the facilities, improves system performance and safety, and minimizes the potential for outages. Part of the $3.9 to $4.8 billion investment ATC will make over the next 10 years is dedicated to asset renewal. Major projects at substations include replacing circuit breakers, protective relays, lightning protection and transformers. Major work on transmission lines involves rebuilding or upgrading aging power lines, including the replacement of structures, conductors, insulators and other equipment.

Solution: More than **100** projects to address asset renewal needs are planned in the next 10 years.

Transmission service requests – Virtually all entities that own power plants or provide electric service to customers, or both, seek to buy and sell electricity with other entities. We evaluate those requests to determine whether the transmission system will operate reliably if the request is granted. If the request can't immediately be granted, we will identify transmission system reinforcements needed to grant the request.

Solution: More than **35** projects to meet transmission service requests have been completed since 2001.

Generator retirements – Similar to new generator requests, when a large generator is retired due to age or other reasons, we will determine how system requirements will be affected. Environmental regulations, market conditions and other factors are expected to impact retirements across the U.S. in the next 5 to 10 years.

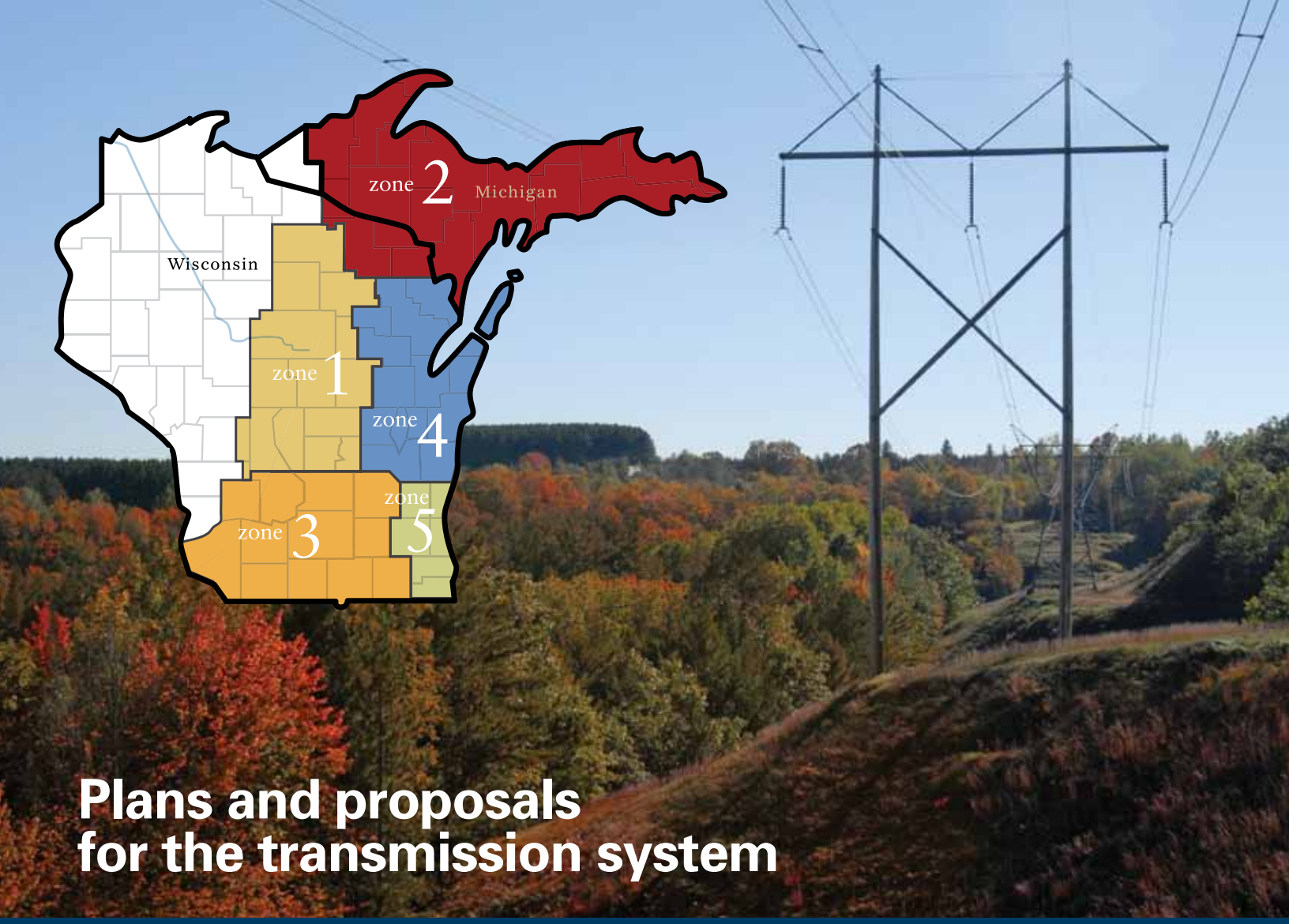
Solution: Generation uncertainties are growing due to a number of factors. We are working closely with generation owners and MISO to anticipate reliability impacts to our transmission system.

Regulatory environment – Physical and cyber security and reliability standards continue to increase, which affect planning criteria.

Solution: We are participating in the NERC standards process to help anticipate the future impacts of these changes on our planning processes and systems.

Integration of new technologies – Demand-side management, variable generation, distributed resources and smart grid technologies all require changes in how the grid is planned and operated to maintain reliability.

Solution: The type of flow-control device between Upper and Lower Michigan will be one of few utilized in the U.S.



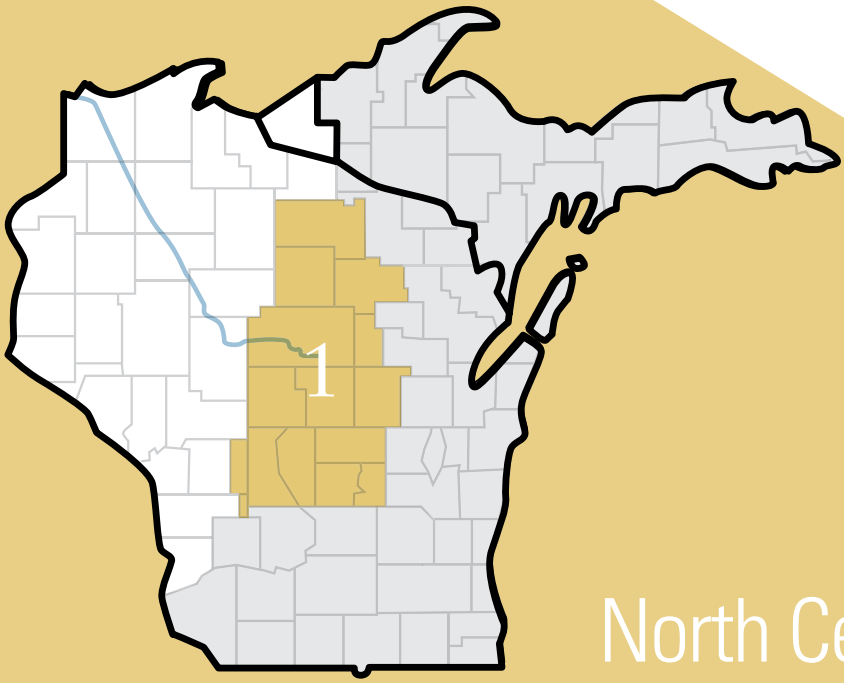
Plans and proposals for the transmission system

For planning purposes, we divide our service area into five zones representing distinct geographic or usage areas. Within each zone, we compile and assess the transmission system needs.

Project classifications

Within each zone, we have recommended network and asset renewal projects to address system limitations. The network projects are classified into one of three possible categories – **Planned, Proposed or Provisional** – depending upon the stage a project may be in. These categories are consistent with those used by MISO.

	Planned	Proposed	Provisional
Status of ATC planning activities	Studies complete	Studies not complete	Studies not complete
Application for regulatory approval	Application pending or issued	None	None
Project status	Project in construction planning phase or under construction	Project identified as preferred alternative	Placeholder project; not necessarily a preferred project alternative
System solution included in generation interconnection power flow models	Project included	Project not included	Project not included



Zone 1

North Central Wisconsin

ADAMS

FOREST
(southwestern portion)

FOND DU LAC
(northwestern portion)

GREEN LAKE

JUNEAU

LANGLADE

LINCOLN

MARATHON

MARQUETTE

MONROE
(eastern portion)

ONEIDA

PORTAGE

SHAWANO
(western portion)

VERNON
(eastern portion)

VILAS
(southern portion)

WAUPACA

WAUSHARA

WINNEBAGO
(western portion)

WOOD

www.atc10yearplan.com

North Central Wisconsin – Zone 1

Transmission system characteristics in Zone 1

ATC delivers power in Zone 1 with various transmission facilities including:

- East-west 345-kV line from Arpin Substation through Stevens Point extending to the Appleton area,
- 345-kV line extending from Wausau to northeastern Minnesota,
- 345-kV line extending from Wausau to Stevens Point to eastern Outagamie County (Highway 22),
- 115-kV network in the northern portion of the zone, and
- 138-kV and 69-kV network in the southern portion of the zone.

There are a number of transmission system performance issues in Zone 1, including overloaded lines and equipment, and low system voltages.

Transmission system limitations in Zone 1

Key system performance issues from this Assessment in Zone 1 include low voltages and thermal overloads in the southern portion of the zone. These issues will necessitate a combination of reinforcements. In addition, for the northern portion of the zone, other studies occurring in parallel with this Assessment, including Northern Area Studies performed by ATC and MISO, have identified several voltage and thermal limitations. The most severe limitations occur during off-peak periods.

Electric System Overview

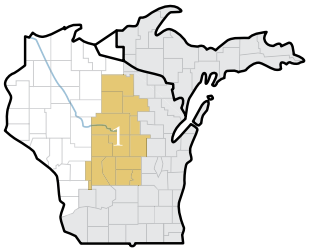
Slight increases expected in population, employment

Population in Zone 1 is projected to grow at 0.7 percent annually between now and 2021. Employment is projected to grow at 1.1 percent annually between now and 2021. Marathon County will realize the largest increase in population and employment, while Adams County will have the highest growth rate.

Electricity usage growing

Peak electric demand typically occurs during the summer months, with some winter peaks appearing in the northern portion. Primary electricity users in Zone 1 include a number of large paper mills and food processing plants.

Electric load is projected to grow approximately 0.53 percent annually through 2021.



Transmission projects in Zone 1

North Central Wisconsin – Zone 1

We have implemented one network project in Zone 1 since the 2011 Assessment, which was the construction of a new 115-kV line to the new Woodmin Substation from the Clear Lake Substation.

Our current plans in Zone 1 include 22 system reliability and economic projects between 2012 and 2026, eight of which are related to our new Study-Based Ratings Methodology, described on page 3. These projects are in various stages of development. The most notable planned, proposed, provisional and asset renewal projects in Zone 1, 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	Monroe County-Council Creek 161-kV line construction	2014	Low voltages, economics, avoid reconfiguration during emergencies
	Provisional projects		
2	Fairwater-Mackford Prairie 69-kV line construction	2018	Overloads and low voltages
	Asset Renewal projects		
3	Montello-Wautoma 69-kV line rebuild	2017	Condition and performance
4	Plover-Whiting 115-kV line rebuild	2019	Condition and performance
5	Coyne-Saratoga 115-kV line partial rebuild	2020	Condition and performance

System Solutions Key

SUBSTATION KEY

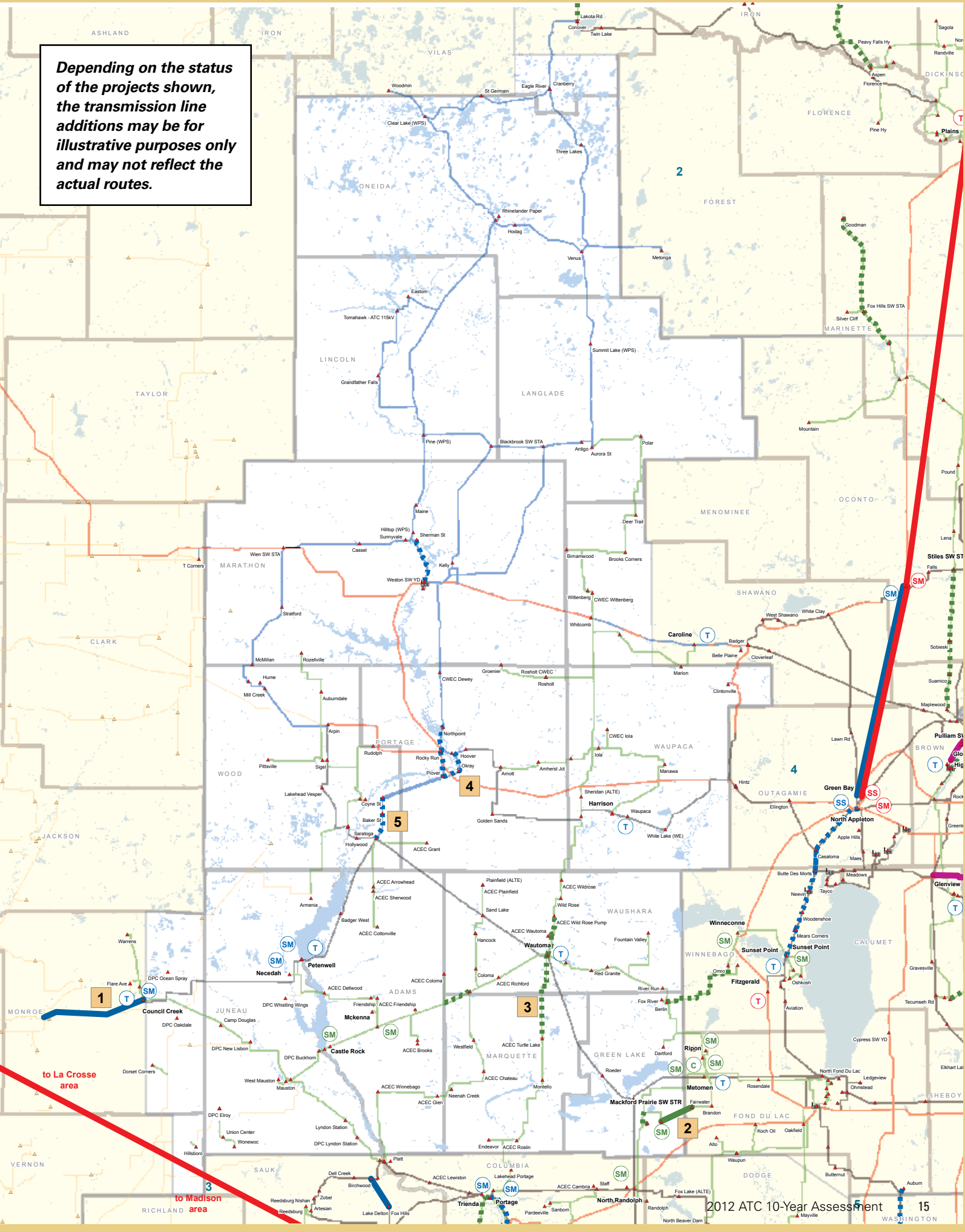
- **SS** — **New substation**: Supports transmission system expansion
- **SM** — **Substation modifications**: Upgrades equipment ratings to avert facility overloads
- **T** — **Transformer**: Supports local growth and improves voltage levels
- **C** — **Capacitor bank or reactor**: Relieves low voltages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

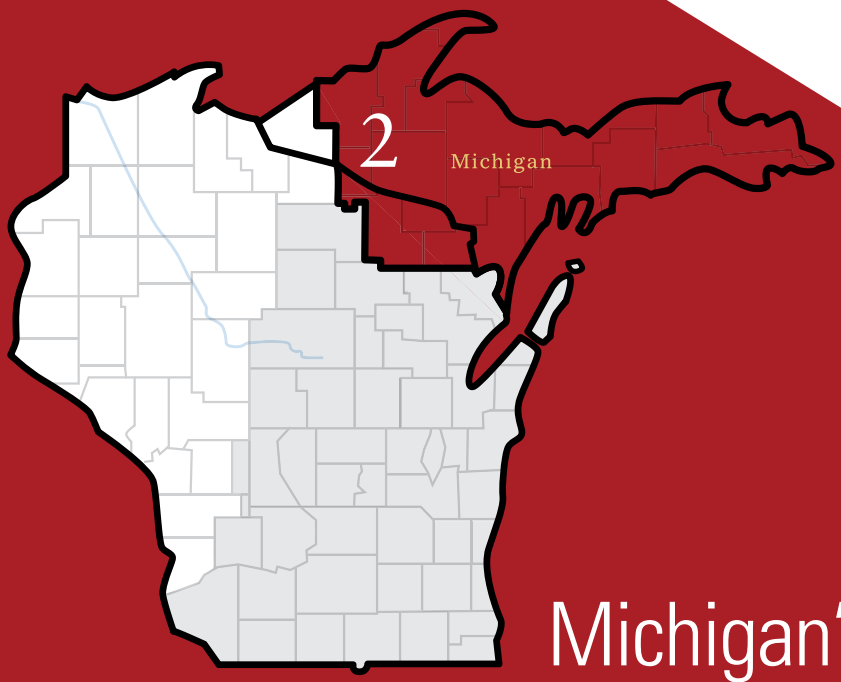
TRANSMISSION LINE KEY

- 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
- 161 kV
- 115 kV
- 230 kV
- 138 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.
ASHLAND
IRON
VILAS
ONEIDA
FOREST
FLORENCE
DICKINSON
MARINETTE
LINCOLN
TAYLOR
LANGLADE
OCONTO
MENOMINEE
MARATHON
CLARK
SHAWANO
WOOD
PORTAGE
WAUPACA
OUTAGAMIE
BROWN
JACKSON
WAUSHARA
WINNEBAGO
CALUMET
ADAMS
JUNEAU
MONROE
MARQUETTE
GREEN LAKE
FOND DU LAC
SHEBOYGAN
COLUMBIA
DODGE
WASHINGTON
SAUK
VERNON
RICHLAND
Lakota Rd
Conover
Twin Lake
Peavy Falls Hy
Sagola
Randville
Aspen
Florence
Pine Hy
Plains
Woodmin
St Germain
Eagle River
Cranberry
Clear Lake (WPS)
Three Lakes
Rhinelander Paper
Hodag
Venus
Metonga
Goodman
Fox Hills SW STA
Silver Cliff
Eastom
Tomahawk - ATC 115kV
Summit Lake (WPS)
Grandfather Falls
Mountain
Pine (WPS)
Blackbrook SW STA
Antigo
Aurora St
Polar
Pound
Maine
Hilltop (WPS)
Sunnyvale
Sherman St
Cassel
Deer Trail
Wien SW STA
T Corners
Kelly
Weston SW YD
Birnamwood
Brooks Corners
Lena
Stiles SW STA
Falls
Wittenberg
CWEC Wittenberg
Stratford
Whitcomb
West Shawano
White Clay
Caroline
Badger
Belle Plaine
Cloverleaf
Sobieski
McMillan
Rozellville
Hume
Mill Creek
Auburndale
Groenier
CWEC Dewey
Rosholt CWEC
Rosholt
Marion
Clintonville
Suamico
Maplewood
Arpin
Northpoint
Rudolph
Rocky Run
Hoover
Okray
Plover
Pittsville
Sigel
Amherst Jct
Arnott
CWEC Iola
Iola
Manawa
Lawn Rd
Pulliam SW
Hintz
Green Bay
Ellington
Sheridan (ALTE)
Harrison
Waupaca
White Lake (WE)
North Appleton
Apple Hills
Lakehead Vesper
Coyne St
Baker St
Saratoga
Hollywood
Golden Sands
ACEC Grant
Casaloma
Maes
Butte Des Morts
Meadows
Neevin
Tayco
Glenview
ACEC Arrowhead
ACEC Sherwood
Armenia
Badger West
ACEC Cottonville
Plainfield (ALTE)
ACEC Plainfield
Sand Lake
ACEC Wildrose
Wild Rose
ACEC Wild Rose Pump
Winneconne
Woodenshoe
Mears Corners
Sunset Point
Warrens
Flare Ave
DPC Ocean Spray
Necedah
Petenwell
ACEC Wautoma
Wautoma
Hancock
Fountain Valley
Omro
Fitzgerald
Oshkosh
Aviation
Gravesville
Tecumseh Rd
ACEC Dellwood
ACEC Coloma
Coloma
ACEC Richford
Red Granite
River Run
Fox River
Berlin
DPC Whistling Wings
Friendship
ACEC Friendship
Mckenna
Council Creek
DPC Oakdale
Camp Douglas
DPC New Lisbon
DPC Buckhorn
Castle Rock
ACEC Brooks
Westfield
ACEC Turtle Lake
Dartford
Ripon
Cypress SW YD
Elkhart Lake
Dorset Corners
West Mauston
Mauston
ACEC Chateau
Montello
Roeder
Metomen
Rosendale
North Fond Du Lac
Ledgeview
Ohmstead
ACEC Winnebago
ACEC Glen
Neenah Creek
Mackford Prairie SW STR
Fairwater
Brandon
Koch Oil
Oakfield
DPC Elroy
Union Center
Wonewoc
Lyndon Station
DPC Lyndon Station
Endeavor
ACEC Roslin
Alto
Waupun
Butternut
Auburn
Hillsboro
Platt
Dell Creek
Birchwood
ACEC Lewiston
Lakehead Portage
ACEC Cambria
Staff
Fox Lake (ALTE)
Reedsburg Nishan
Zobel
Reedsburg
Artesian
Lake Delton
Fox Hills
Trienda
Portage
Pardeeville
Sanborn
North Randolph
Randolph
North Beaver Dam
Mayville
to La Crosse area
to Madison area
1
2
3
4
5
SM
T
SS
C



Zone 2

Michigan's Upper Peninsula and Northern Wisconsin

ALGER, MICH.

BARAGA, MICH.

CHIPPEWA, MICH.

DELTA, MICH.

DICKINSON, MICH.

FLORENCE, WIS.

FOREST, WIS.
(northern portion)

GOGEBIC, MICH.
(eastern portion)

HOUGHTON, MICH.

IRON, MICH.

KEWEENAW, MICH.

LUCE, MICH.

MACKINAC, MICH.

MARINETTE, WIS.
(northern portion)

MARQUETTE, MICH.

MENOMINEE, MICH.
(northern portion)

ONTONAGON, MICH.
(eastern portion)

SCHOOLCRAFT, MICH.

VILAS, WIS.
(northern portion)

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Michigan's Upper Peninsula and Northern Wisconsin – Zone 2

Transmission system characteristics of Zone 2

ATC delivers power in Zone 2 with various transmission facilities including:

- Morgan-Plains and Plains-Dead River 345-kV lines,
- Plains-Stiles 138-kV double-circuit line
- Conover-Plains 138-kV line, and
- 138-kV facilities tying the Upper Peninsula of Michigan to the Lower Peninsula.

There are a number of transmission system performance issues in Zone 2 including limited ability to import or export power, generator instability, overloaded lines and equipment, low system voltages and chronic limitations to transmission service. Primary drivers of these issues include a mismatch of load to generation in the Upper Peninsula and aging facilities in poor or obsolete condition.

Transmission system limitations in Zone 2

In the analysis of Zone 2, we identified low voltages, high voltages, transmission facility overloads and transmission service limitations. In addition, other studies occurring in parallel with this Assessment, including Northern Area Studies performed by ATC and MISO, have identified several voltage and thermal limitations. The most severe limitations occur during off-peak periods.

Electric System Overview

Small increases expected in population, employment

Population in Zone 2 is projected to grow about 0.2 percent annually between now and 2021, and employment is expected to grow about 1.0 percent each year in the same time period. Marquette County, Mich., is projected to realize the largest increase in employment, while Houghton County is projected to have the highest growth rate.

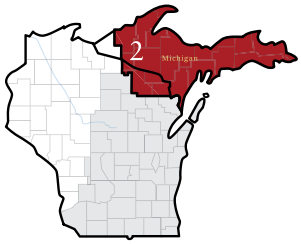
Electricity usage growing

Zone 2 typically experiences peak electric demand during the winter months. Ore mining and paper mills are the largest electricity users in the zone.

Electric load is projected to increase by 0.35 percent annually through 2021. Also, locally generated electricity is declining in the area with smaller, coal-fired generators most at risk. This includes generation owned by industry, municipalities and utilities.

Transmission projects in Zone 2

Michigan's Upper Peninsula and Northern Wisconsin – Zone 2



Transmission projects in Zone 2

We have implemented three network projects in Zone 2 since the 2011 Assessment, including installing a second 138/69-kV transformer and a 138-kV ring bus at the Chandler Substation.

Our current plans in Zone 2 include 20 system reliability and economic projects between 2012 and 2026, three of which are related to our new Study-Based Rating Methodology. These projects are in various stages of development. The most notable planned, proposed, provisional and asset renewal projects in Zone 2, along with their projected year of completion and the factors driving the need for the projects, are listed.

System Solutions Key

SUBSTATION KEY

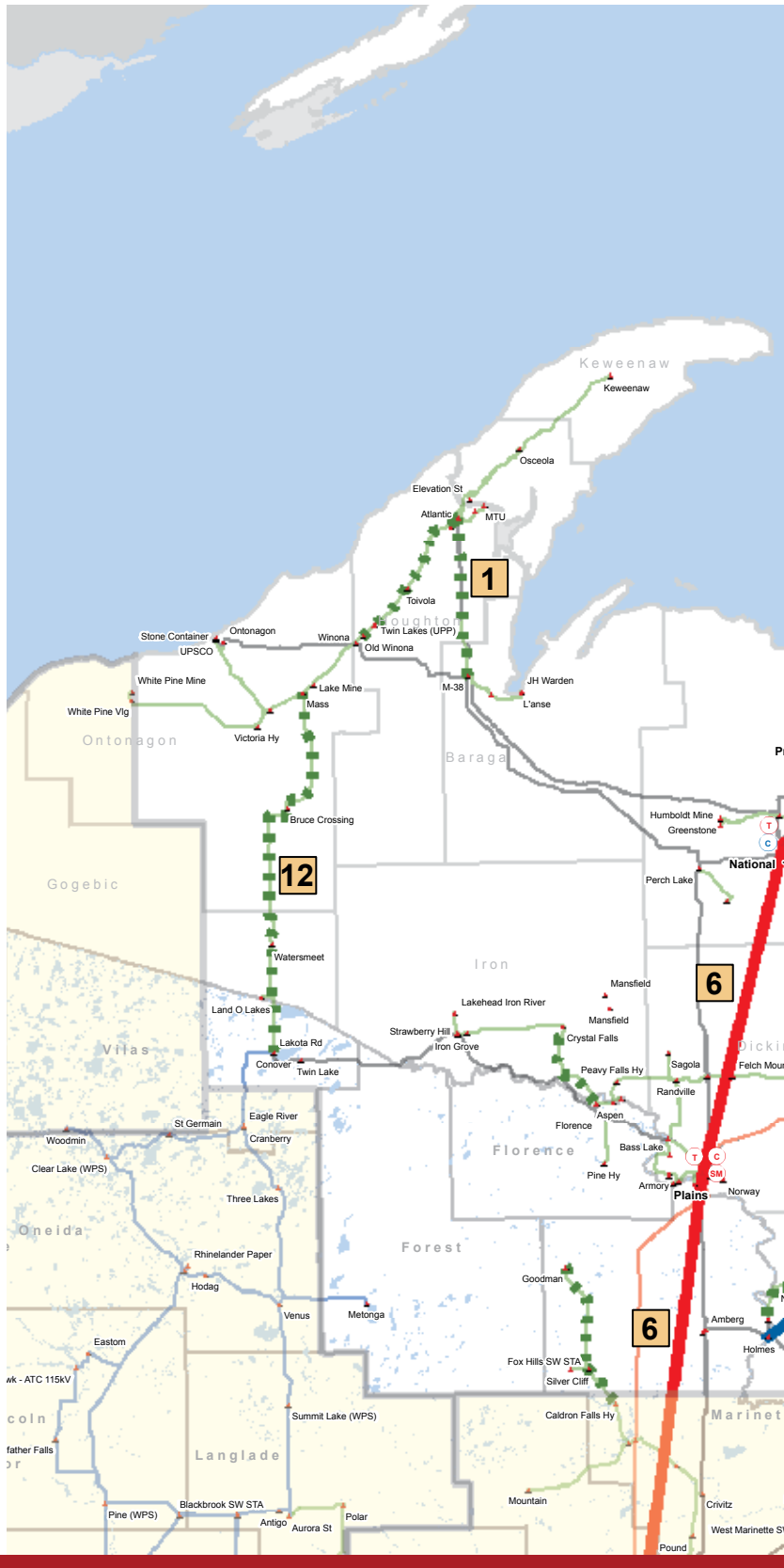
- **SS** — **New substation**: Supports transmission system expansion
- **SM** — **Substation modifications**: Upgrades equipment ratings to avert facility overloads
- **T** — **Transformer**: Supports local growth and improves voltage levels
- **C** — **Capacitor bank or reactor**: Relieves low voltages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

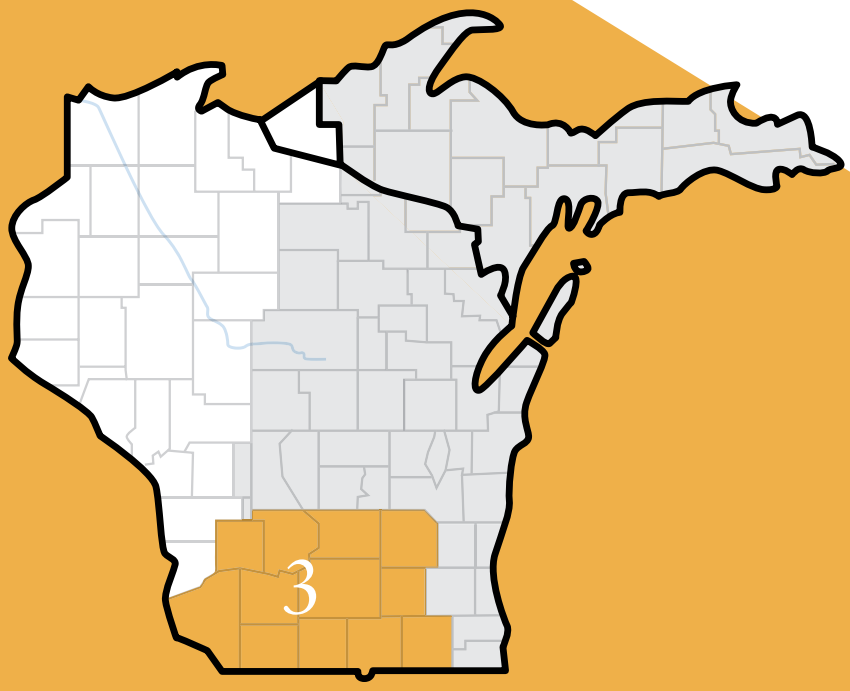
EXISTING TRANSMISSION LINES KEY

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



	Project description	In-service year	Need driver
	Proposed projects		
1	Atlantic-M38 69-kV line rebuild	2013	Overloads, low voltages, condition and performance
2	Straits-Pine River 69-kV double circuit rebuild	2014	Overloads and low voltages
3	Mackinac 138-kV Substation; Installation of back-to-back HVDC flow control device	2014	Address/control flow across eastern U.P., overloads and low voltages
	Proposed projects		
4	Chandler-Old Mead Road 138-kV double circuit lines	2014	Overloads and low voltages
5	Arnold 345-kV Substation construction and 345/138-kV transformer	2014	Overloads and low voltages
6	Bay Lake: Green Bay-Morgan-Plains-National 345-kV line construction	2016-2018	Overloads and low voltages
7	Bay Lake: Holmes-Escanaba 138-kV project	2016-2018	Overloads and low voltages
	Provisional projects		
8	Seney-Blaney Park 69-kV line uprate	2015	Overloads, low voltages, condition and performance
	Asset Renewal projects		
9	Nine Mile-Roberts 69-kV line partial rebuild	2012	Condition and performance
10	Munising-Gwinn 69-kV line partial rebuild	2012-2013	Condition and performance
11	Rexton-Hiawatha 69-kV line partial rebuild	2015	Condition and performance
12	Conover-Mass 69-kV line partial rebuild	2018	Condition and performance
13	Powers-Chalk Hill 69-kV line partial rebuild	2018	Condition and performance
14	Straits-McGulpin 138-kV submarine cable replacements	2020	Condition and performance

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.



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)

www.atc10yearplan.com

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:

- Columbia-North Madison 345-kV lines,
- Columbia-Rockdale 345-kV line,
- Paddock-Rockdale 345-kV line,
- Paddock-Wempletown 345-kV line,
- Rockdale-Wempletown 345-kV line, and
- 138-kV facilities from the Nelson Dewey Power Plant, around the Madison area, and in the northwest and southeast portions of Zone 3.

Transmission system performance issues in Zone 3 include voltage instability, limited import capability, overloaded lines and equipment and low system voltages. The causes of these emerging issues include steady growth in certain areas, new power plants and different generation dispatch scenarios.

Transmission system limitations in Zone 3

In our analysis of Zone 3, we identified low voltages, high voltages and transmission-facility overloads. Low voltages are located in the Verona, Beloit, Hustisford and Waunakee areas. Several overloads on 138-kV and 69-kV facilities in Zone 3 are emerging concerns.

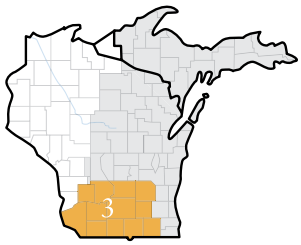
Electric System Overview

Increases expected in population, employment

Population in Zone 3 is projected to grow about 0.9 percent annually between now and 2021, and employment is projected to grow about 1.3 percent each year for the same time period. Dane County is projected to realize the largest increase in population, and Sauk County is projected to have the largest increase in employment.

Electricity usage growing

Electric load is expected to grow approximately 1.38 percent annually through 2021 for all of Zone 3.



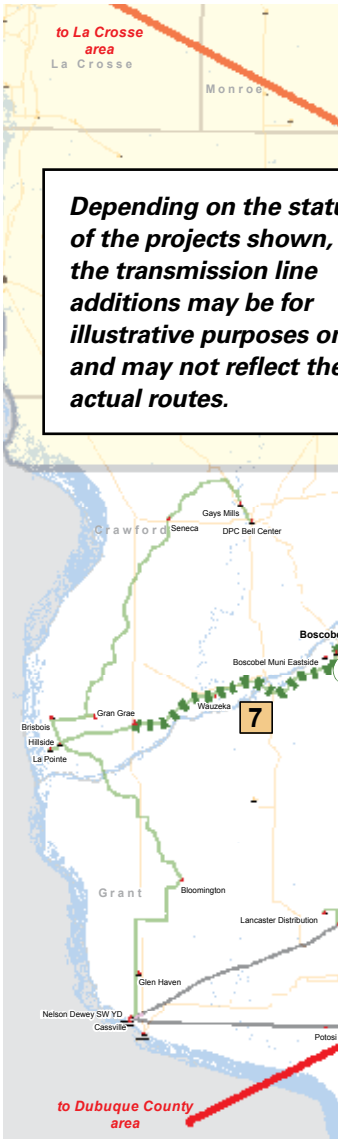
Transmission projects in Zone 3

South Central/Southwest Wisconsin and North

We have implemented two network projects in Zone 3 since the 2011 Assessment, most notably the Brodhead to South Monroe 69-kV line rebuild project.

Our current plans in Zone 3 include 49 system reliability and economic projects between 2012 and 2026, 15 of which are driven by our new Study-Based Rating Methodology. 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 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	Rockdale-Cardinal 345-kV line	2013	Overloads and low voltages, improve transfer capability to Madison area, avert voltage collapse, lower system losses
	Proposed projects		
2	Sun Valley Tap-Oregon 69-kV line rebuild	2016	Overloads and improve line condition and area voltages
3	Badger Coulee: La Crosse area-North Madison-Cardinal	2018	Reliability, economics and public policy
4	Spring Valley-North Lake Geneva 138-kV line construction	2019	Overloads and low voltages, provide network service
5	Cardinal Bluffs: Dubuque County area-Cardinal 345-kV line construction	2019	Reliability, economics and public policy
	Provisional projects		
6	Colley Road-Brick Church 69-kV line rebuild	2018	Overloads and low voltages
7	Gran Grae-Boscobel 69-kV line rebuild	2019	Overloads
8	Lake Delton-Birchwood 138-kV line construction	2020	Overloads and low voltages
9	Cardinal-Blount 138-kV line construction	2020	Overloads and low voltages
10	Hubbard-East Beaver Dam 138-kV line construction	2022	Overloads and low voltages
11	West Middleton-Pheasant Branch 69-kV line rebuild	2022	Overloads and low voltages
	Asset Renewal projects		
12	Doylestown-Rio Pumping Station 69-kV line rebuild	2013	Condition and performance
13	Dam Heights-Portage 69-kV line rebuild	2016	Condition and performance
14	Darlington-Hillman 138-kV line rebuild	2016	Condition and performance
15	Concord-Rubicon-Butler Ridge-Hartford 138-kV line rebuild	2016	Condition and performance
16	Belmont-Rewey 69-kV line rebuild	2018	Condition and performance
17	Boscobel-Lone Rock 69-kV line rebuild	2018	Condition and performance
18	West Middleton-Stagecoach 69-kV underground cable replacement	2019	Condition and performance



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

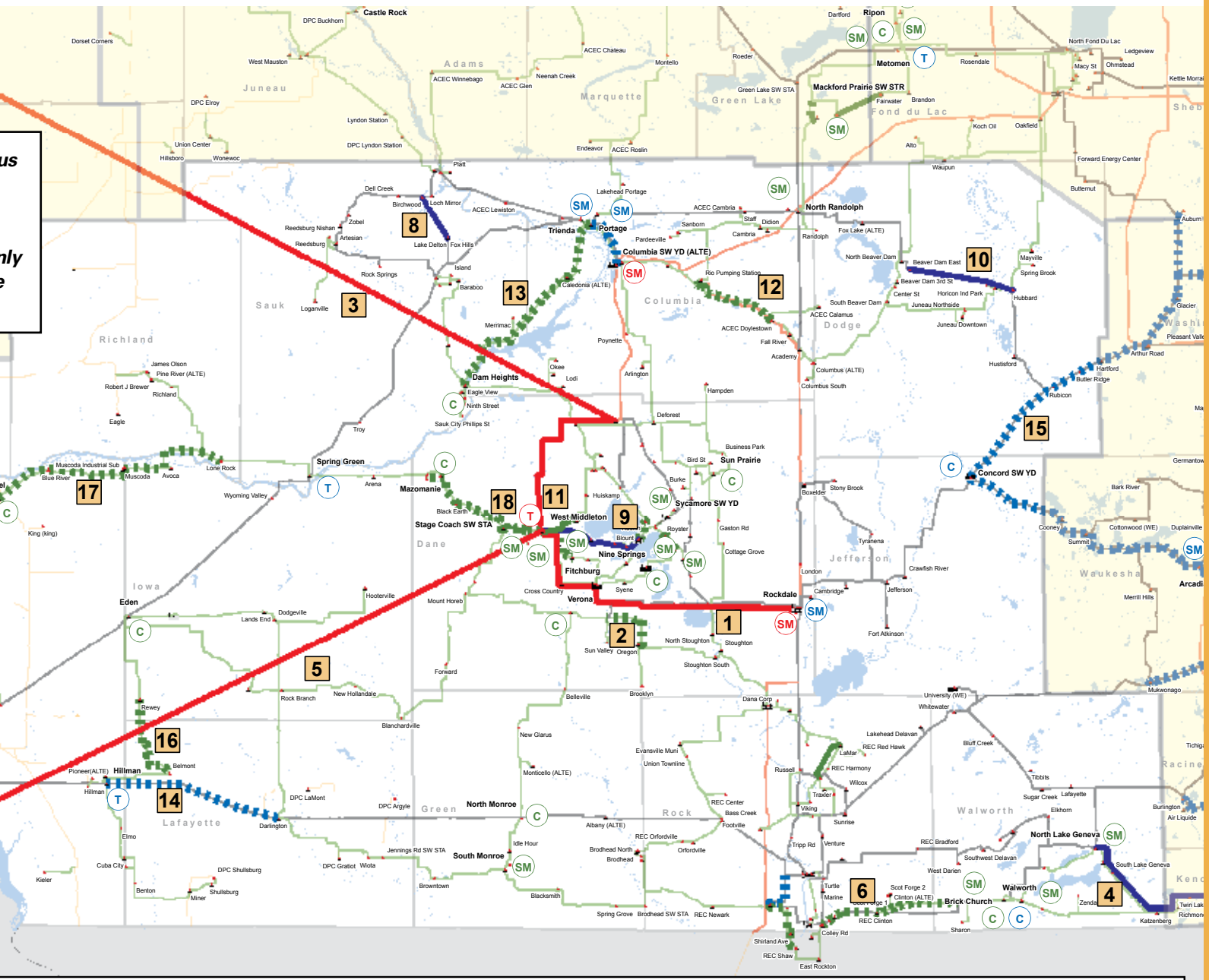
SUBSTATION

SS **New substation**
Supports transmission system expansion

SM **Substation modifications**
Upgrades equipment ratings to avert facility overloads

T **Transformer**
Supports local growth and improvesvoltage levels

Central Illinois – Zone 3



System Solutions Key

KEY

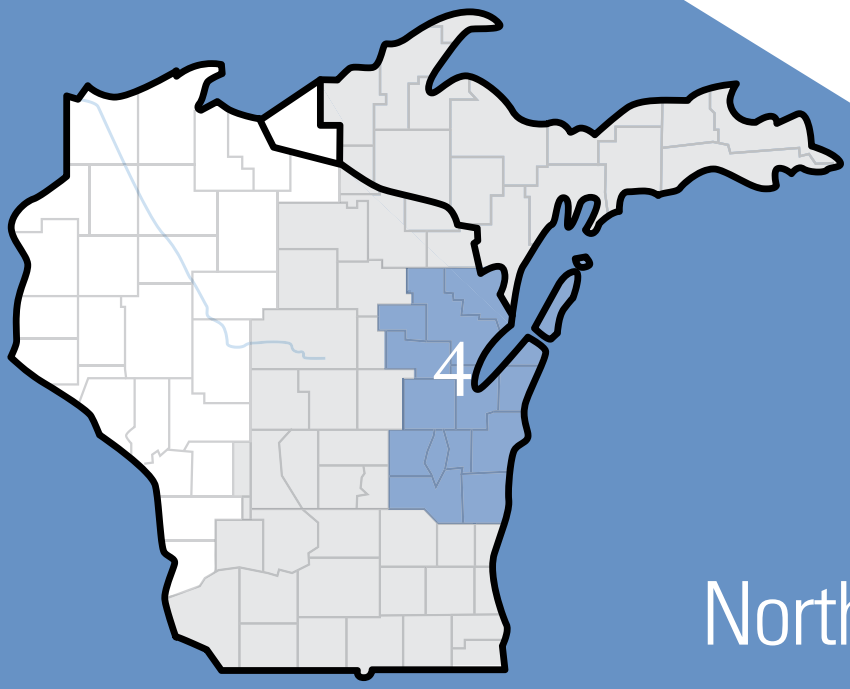
- **C — Capacitor bank or reactor**
  Relieves low voltages or high voltages
- **T-D — T-D interconnection**
  Supports local growth

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**



Zone 4
Northeast Wisconsin

BROWN

CALUMET

DODGE
(northeastern corner)

DOOR

FOND DU LAC
(eastern portion)

KEWAUNEE

MANITOWOC

MARINETTE
(southern portion)

MENOMINEE, MICH.
(southern portion)

MENOMINEE, WIS.

OCONTO

OUTAGAMIE

SHAWANO
(eastern portion)

SHEBOYGAN

WINNEBAGO
(eastern portion)

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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,
- 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

For the analysis of Zone 4, other studies occurring in parallel with tis Assessment, including Northern Areas Studies performed by ATC and MISO, have identified several voltage and thermal limitations. The most severe limitations occur during the off-peak periods.

Electric System Overview

Increases expected in population, employment

Population in Zone 4 is projected to grow 0.8 percent annually between now and 2021. Brown County is expected to realize the largest increase in population. Employment is projected to grow 1.1 percent annually in the same time period, with the largest increase projected in Brown County.

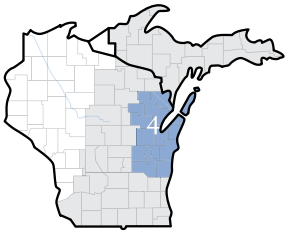
Electricity usage growing

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 0.59 percent annually through 2021. Also, locally generated electricity is declining in the area with smaller, coal-fired generators most at risk. This includes generation owned by industries, municipalities and utilities.

Transmission projects in Zone 4

Northeast Wisconsin – Zone 4



We have completed two network projects in Zone 4 since the 2011 Assessment, most notably the construction of a new 138-kV line from Canal Substation to Dunn Road Substation and the installation of a 138/69-kV transformer at Dunn Road Substation.

Our current plans in Zone 4 include 16 system reliability projects between 2012 and 2026, three of which are related to our new Study-Based Rating Methodology. 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 in the table below.

	Project description	In-service year	Need driver
	Proposed projects		
1	Bay Lake: Green Bay area-Morgan 138-kV line construction	2016	Overloads and low voltages
2	Pulliam-Glory Road 138-kV line conversion	2016	Overloads and low voltages
3	Bay Lake: Green Bay area-Morgan-Plains-National 345-kV line construction	2016-2018	Overloads and low voltages
4	Barnhart-Branch River project	2018	Accommodate new generation
5	Barnhart-Plymouth-Howards Grove-Erdman 138-kV line*	2018	Accommodate new generation
	Provisional projects		
6	Shoto-Custer 138-kV line	2022	Overloads
	Asset Renewal projects		
7	Replace Edgewater 138/69-kV transformers	2013	Condition and performance
8	Pulliam-Stiles 138-kV line shield wire replacement	2013	Condition and performance
9	First Avenue-Redwood 69-kV submarine cable replacement	2015	Condition and performance
10	North Appleton-Kewaunee 345-kV line cross-arm replacement	2015	Condition and performance
11	Dyckesville-Sawyer 69-kV line rebuild	2016	Condition and performance
12	University-Danz Avenue 69-kV underground cable replacement	2017	Condition and performance
13	Bayport-Sobieski-Pioneer 69-kV line rebuild	2018	Condition and performance
14	Oak Street-Highway V-Finger Road-Danz Ave 69-kV line rebuild	2018	Condition and performance
15	Caldron Falls-Goodman 69-kV line rebuild	2019	Condition and performance
16	Erdman-Lodestar 138-kV underground cable replacement	2019	Condition and performance
17	Custer-New Holstein 69-kV line rebuild	2019	Condition and performance
18	Wesmark-Manrap 69-kV line rebuild	2020	Condition and performance
19	Finger Road-Canal 69-kV line rebuild	2020	Condition and performance
20	North Appleton-Butte des Morts-Neevin-Woodenshoe-Mears Corners-Sunset Point 138-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

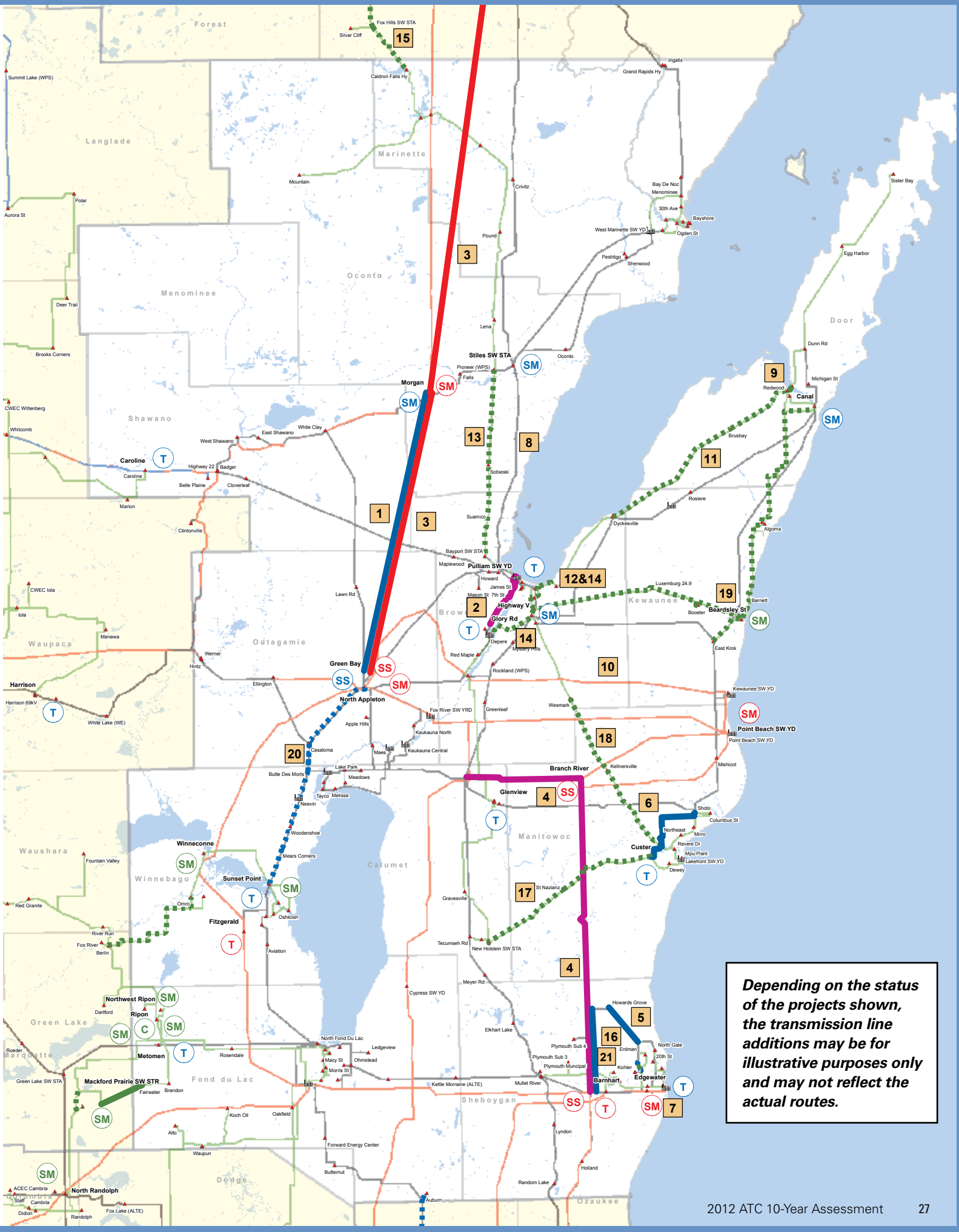
- **SS** — **New substation** — Supports transmission system expansion
- **SM** — **Substation modifications** — Upgrades equipment ratings to avert facility overloads
- **T** — **Transformer** — Supports local growth and improves voltage levels
- **C** — **Capacitor bank or reactor** — Relieves low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

TRANSMISSION LINE KEY

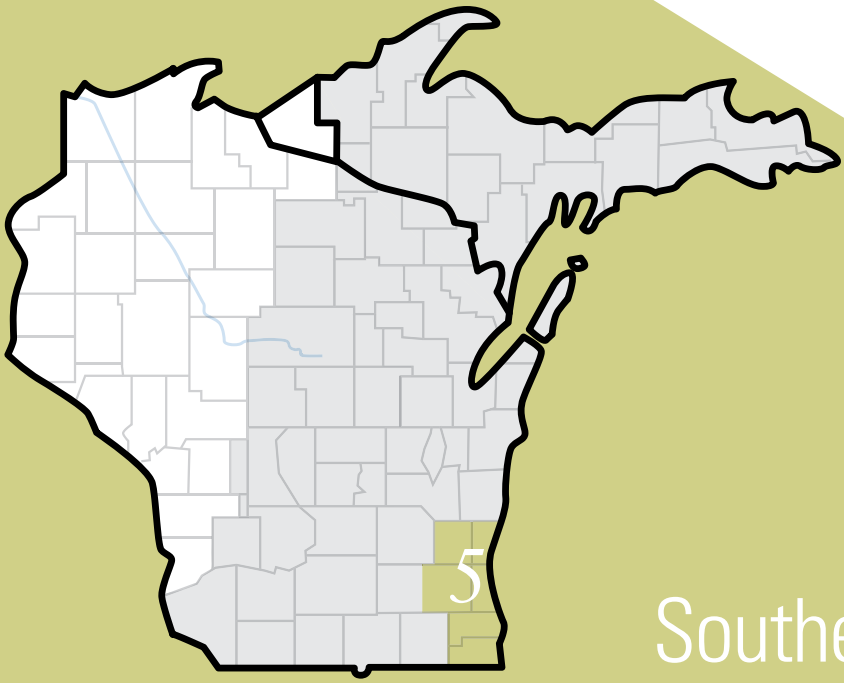
- 345-kV transmission line
- 115-, 138- or 161-kV transmission line
- Rebuilt 115- or 138-kV transmission line
- Transmission line voltage conversion
- 69-kV transmission line
- Rebuilt 69-kV transmission line

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.



Zone 5

Southeast Wisconsin

KENOSHA
MILWAUKEE
OZAUKEE
RACINE
WASHINGTON
WAUKESHA

www.atc10yearplan.com

Southeast Wisconsin – Zone 5

Transmission system characteristics in Zone 5

ATC delivers power in Zone 5 with various transmission facilities including:

- The southern portion of 345-kV lines from Point Beach and Edgewater,
- The Saukville, Arcadian, Granville, Oak Creek and Racine 345/138-kV substations,
- The transmission lines emanating from the Pleasant Prairie and Oak Creek power plants,
- 230-kV facilities near Milwaukee, and
- A significant 138-kV network in the Milwaukee area, a portion of which is underground.

Apart from the analysis performed in this Assessment, there is one major area event that could impact transmission plans in Zone 5. The proposed road rebuild of the Zoo Interchange is moving forward with the following in-service dates:

- Expand/update Watertown Plank area (2013),
- Expand/update Highway 100/Highway 45 area (2014), and
- Expand/update remainder of freeway (2015-2018).

The road relocation project results in new projects to reconfigure the transmission system around Brookdale, Bluemound and 96th Street substations, as well as the construction of an 8-position ring bus at 96th Street.

Transmission system limitations in Zone 5

Key system performance issues in Zone 5 include:

- Heavy flows on aging facilities,
- Heavy flows from the west (Zone 3) resulting in heavily loaded 138-kV facilities in the western portion of Zone 5,
- Heavy market flows from and to the south, resulting in high 345-kV and 138-kV line loadings and the need to monitor potential multiple contingency conditions, and
- Sagging voltage profile in portions of Washington and Waukesha counties.

Transmission system reinforcements needed to interconnect and deliver the new generation at the Oak Creek Power Plant comprised much of the recent expansion to Zone 5. Load growth in Waukesha and Washington counties is projected to exceed the capabilities of the existing 138-kV system in those areas, signaling the need for future transmission system reinforcements.

Electric System Overview

Small increases expected in population, employment

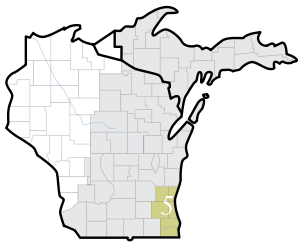
Population in Zone 5 is projected to grow 0.4 percent annually between now and 2021, and employment is projected to grow 1.1 percent in the same time period.

Waukesha County is projected to realize the largest increase in both population and employment.

Electricity usage growing

Peak electric demand typically occurs during the summer months. Large industrial loads in the Milwaukee metropolitan area, including Charter Steel and Miller Brewing, are among the largest electricity users in the zone.

Electric load is projected to grow approximately 1.01 percent annually through 2021.



Transmission projects in Zone 5

Southeast Wisconsin – Zone 5

Our current plans in Zone 5 include 23 system reliability and economic projects between 2012 and 2026, 14 of which are related to our new Study-Based Rating Methodology. These projects are in various stages of development. The most notable planned, proposed, provisional and asset renewal projects in Zone 5, 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
	Proposed projects		
1	Pleasant Prairie-Zion Energy Center 345-kV line construction	2013	Economics
2	Milwaukee County T-D 138-kV lines	2015	T-D interconnection
3	Arcadian-Waukesha 138-kV line rebuilds	2016	Overloads
4	Spring Valley-North Lake Geneva 138-kV line construction	2019	Overloads and low voltages, provide network service
	Provisional projects		
5	Replace Arcadian 345/138-kV transformers with single transformer	2020	Overloads
	Asset Renewal projects		
6	Bluemound 230/138-kV transformer replacement	2012	Condition and performance
7	St. Lawrence-Hartford 138-kV line rebuild	2014	Condition and performance
8	Concord-Cooney 138-kV line rebuild	2015	Condition and performance
9	Waukesha-Merrill Hills 138-kV line partial rebuild	2016	Condition and performance
10	Paris-Albers 138-kV line rebuild	2017	Condition and performance
11	Merrill Hills-Summit 138-kV line partial rebuild	2017	Condition and performance
12	Mukwonago-Edgewood-St. Martins 138-kV line rebuild	2017	Condition and performance
13	Oak Creek-Hayes 138-kV line rebuild	2019	Condition and performance
14	Summit-Cooney 138-kV line rebuild	2021	Condition and performance
15	Paris-Burlington 138-kV line rebuild	2021	Condition and performance
16	St. Lawrence-Barton-Auburn 138-kV line rebuild	2022	Condition and performance

System Solutions Key

SUBSTATION KEY

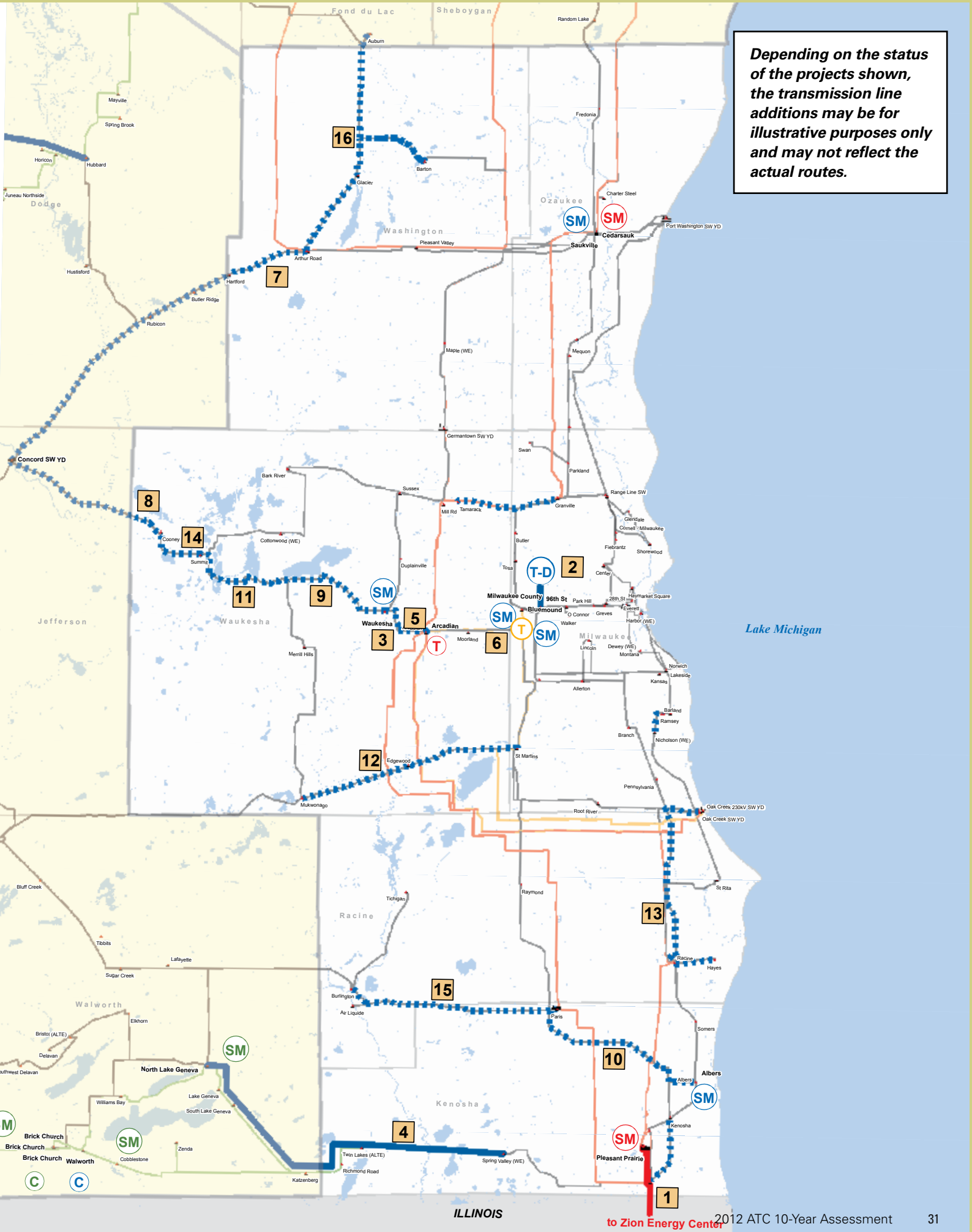
- **SS** — **New substation**: Supports transmission system expansion
- **SM** — **Substation modifications**: Upgrades equipment ratings to avert facility overloads
- **T** — **Transformer**: Supports local growth and improves voltage levels
- **C** — **Capacitor bank or reactor**: Relieves low voltages 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
- 161 kV
- 115 kV
- 230 kV
- 138 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.
Fond du Lac
Sheboygan
Random Lake
Auburn
Mayville
Spring Brook
Horicon
Hubbard
Juneau Northside
Dodge
Fredonia
Charter Steel
Ozaukee
Washington
Cedarsauk
Port Washington SW YD
Saukville
Pleasant Valley
Barton
Glacier
Arthur Road
Hustisford
Hartford
Butler Ridge
Rubicon
Maple (WE)
Mequon
Germantown SW YD
Swan
Parkland
Concord SW YD
Bark River
Sussex
Range Line SW
Granville
Mill Rd
Tamarack
Glendale
Cornell - Milwaukee
Fiebrantz
Shorewood
Butler
Cooney
Cottonwood (WE)
Summa
Duplainville
Tosa
Center
Milwaukee County
96th St
Park Hill
28th St
Haymarket Square
Everett
Bluemound
O Connor
Greves
Harbor (WE)
Walker
Jefferson
Waukesha
Waukesha
Arcadian
Moorland
Merrill Hills
Lincoln
Dewey (WE)
Montana
Milwaukee
Lake Michigan
Norwich
Lakeside
Kansas
Allerton
Barland
Ramsey
Branch
Nicholson (WE)
St Martins
Edgewood
Pennsylvania
Mukwonago
Root River
Oak Creek 230kV SW YD
Oak Creek SW YD
Bluff Creek
Tichigan
Raymond
St Rita
Racine
Tibbits
Lafayette
Racine
Hayes
Sugar Creek
Walworth
Burlington
Air Liquide
Paris
Somers
Elkhorn
Bristol (ALTE)
Delavan
North Lake Geneva
Albers
Albers
Williams Bay
Lake Geneva
South Lake Geneva
Kenosha
Kenosha
Brick Church
Brick Church
Brick Church
Walworth
Cobblestone
Zenda
Twin Lakes (ALTE)
Spring Valley (WE)
Pleasant Prairie
Richmond Road
Katzenberg
ILLINOIS
to Zion Energy Center
16
7
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14
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- Meeting electric needs of more than **five million people** in 72 counties in four states: Wisconsin, Michigan, Minnesota and Illinois
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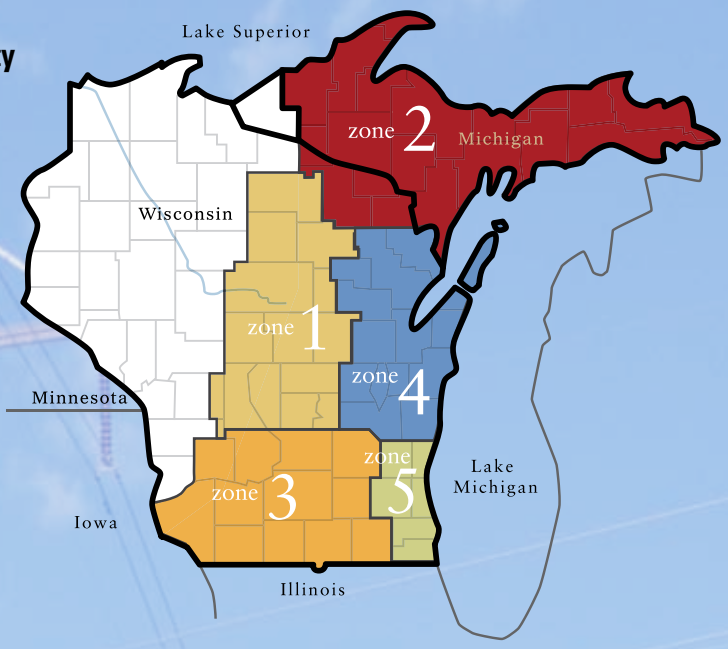

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