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2015 10-Year Assessment Summary

February 2016

Topics

- Key Messages
- Capital Forecast
- Larger Projects by Zone

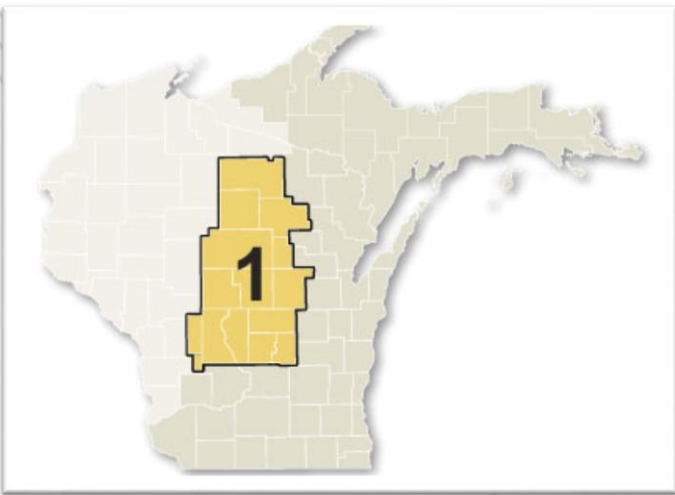
Key Messages

- Load forecast growth slightly higher in early years, but has a slightly lower long-term growth rate relative to 2014 Assessment.
- Some generation assumption changes
- Minor impacts of implementing TPL-001-4
 - 2 new projects
- Continue to participate in Regional Studies

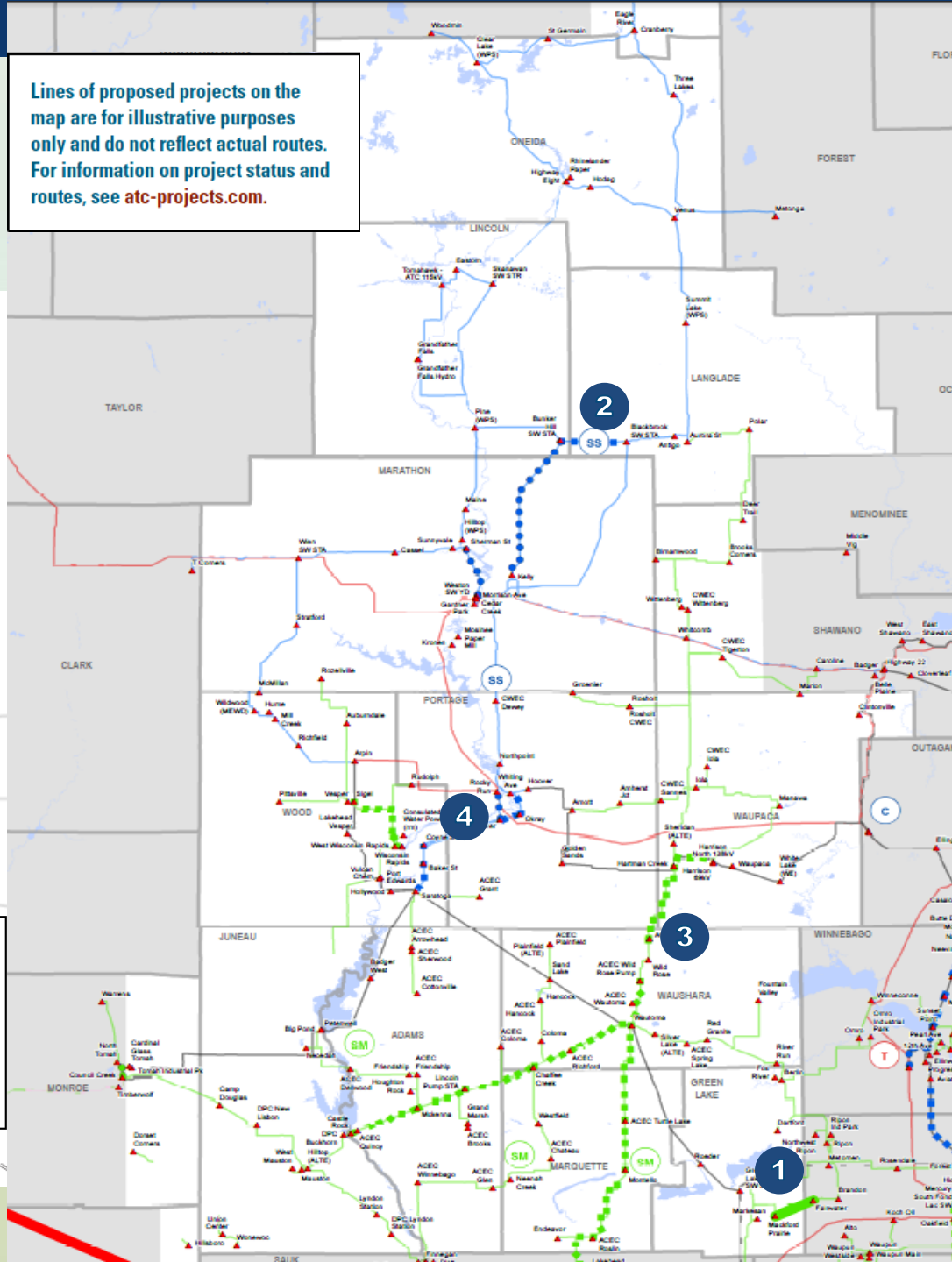
Capital Forecast

	2011	2012	2013	2014	2015
Specific Network Projects	\$1.0B	\$1.9B	\$1.2B	\$1.4B	\$1.4B
Regional Multi-Value Projects	\$0.7B	\$0.8B	\$0.5B	\$0.5B	\$0.5B
Asset Maintenance	\$1.0B	\$1.1B	\$1.1B	\$1.2B	\$1.4B
Other Capital Categories	\$1.1B/\$1.7B	\$0.1B/\$1.0B	\$0.2B/\$0.8B	\$0.2B/\$0.8B	\$0.4B/\$1.2B
Total 10-Year Capital Cost	\$3.8B/\$4.4B	\$3.9B/\$4.8B	\$3.0B/\$3.6B	\$3.3B/\$3.9B	\$3.7B/\$4.5B

Zone 1



Lines of proposed projects on the map are for illustrative purposes only and do not reflect actual routes. For information on project status and routes, see atc-projects.com.



System Solutions Key

SUBSTATION KEY		TRANSMISSION LINE KEY		EXISTING TRANSMISSION LINES KEY	
SS	New substation Supports transmission system expansion		345-kV transmission line		69 kV
SM	Substation modifications Upgrades equipment ratings to avert facility overloads		115-, 138- or 161-kV transmission line		115 kV
T	Transformer Supports local growth and improves voltage levels		69-kV transmission line		230 kV
C	Capacitor bank or reactor Relieves low voltages or high voltages		Rebuilt 115- or 138-kV transmission line		345 kV
T-D	T-D interconnection Supports local growth		Rebuilt 69-kV transmission line		
			115- or 138-kV transmission line rating upgrade		
			69-kV transmission line rating upgrade		

Zone 1 projects

PROJECT DESCRIPTION

IN-SERVICE YEAR

NEED DRIVER

Planned Projects

1	Fairwater-Mackford Prairie 69-kV line construction	2017	Network service, condition, overloads and low voltages
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Proposed Projects

2	M13 Reinforcement Bunker Hill-Blackbrook	2019	Overloads and condition
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Provisional Projects

None

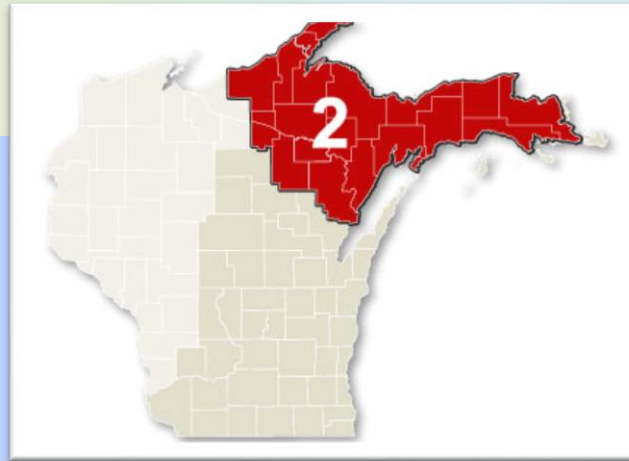
Asset Renewal Projects

3	Montello-Wautoma 69-kV line rebuild	2016	Condition and performance
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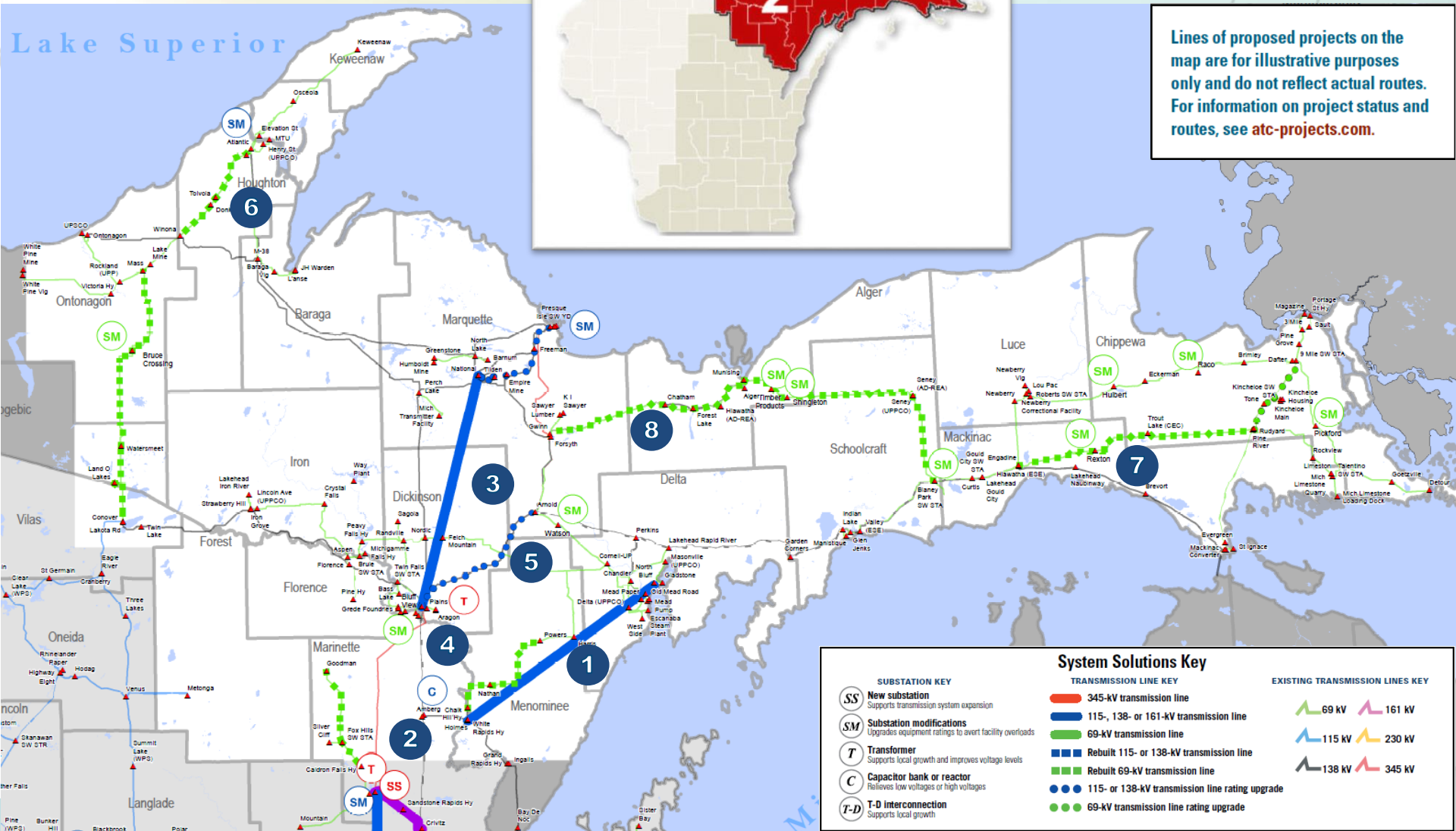
4	Plover-Whiting 115-kV line rebuild	2019	Condition and performance
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Additional projects may be found in the full 10-Year Assessment at atc10yearplan.com.

Zone 2



Lines of proposed projects on the map are for illustrative purposes only and do not reflect actual routes. For information on project status and routes, see atc-projects.com.



SUBSTATION KEY		TRANSMISSION LINE KEY		EXISTING TRANSMISSION LINES KEY	
SS	New substation Supports transmission system expansion		345-kV transmission line		69 kV
SM	Substation modifications Upgrades equipment ratings to avert facility overloads		115-, 138- or 161-kV transmission line		115 kV
T	Transformer Supports local growth and improves voltage levels		Rebuild 69-kV transmission line		230 kV
C	Capacitor bank or reactor Supports local growth and improves voltage levels		Rebuild 115- or 138-kV transmission line		138 kV
T-D	T-D Interconnection Supports local growth		115- or 138-kV transmission line rating upgrade		345 kV
			69-kV transmission line rating upgrade		

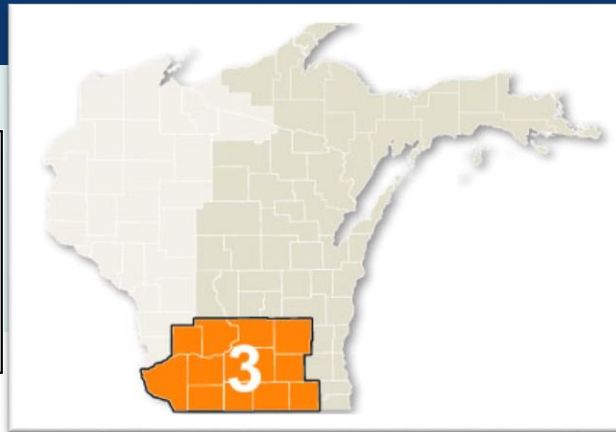
Zone 2 projects

	PROJECT DESCRIPTION	IN-SERVICE YEAR	NEED DRIVER
Planned Projects			
1	Bay Lake: Holmes-Old Mead Road 138-kV project	2016	Overloads and low voltages
2	Bay Lake: Benson Lake 138-kV Substation – Installation of SVC	2019	Overloads and low voltages
Proposed Projects			
None			
Provisional Projects			
3	Plains-National 138-kV project	2020	Overloads and low voltages
4	Plains 345/138-kV project	2020	Overloads and low voltages
5	Plains-Arnold 138-kV uprate	2020	Overloads and low voltages
6	Winona-Atlantic 69-kV line rebuild	2022	Overloads and low voltages
Asset Renewal Projects			
7	Pine River-Hiawatha 69-kV line partial rebuild	2018	Condition and performance
8	Munising-Gwinn 69-kV line partial rebuild	2018	Condition and performance

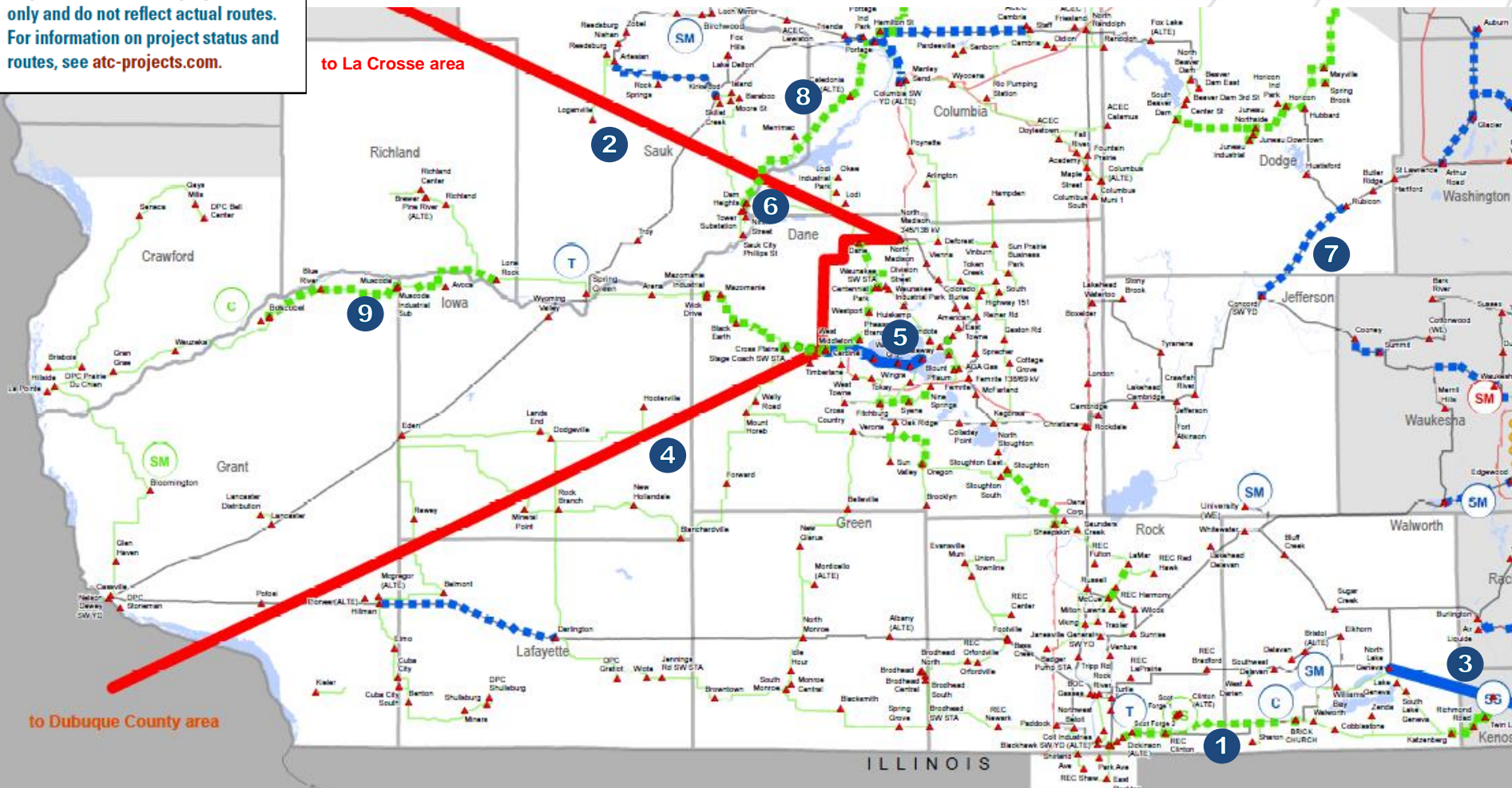
Additional projects may be found in the full 10-Year Assessment at atc10yearplan.com.

Zone 3

SUBSTATION KEY		TRANSMISSION LINE KEY		EXISTING TRANSMISSION LINES KEY	
SS	New substation Supports transmission system expansion		345-kV transmission line		69 kV
SM	Substation modifications Upgrades equipment ratings to avert facility overloads		115-, 138- or 161-kV transmission line		115 kV
T	Transformer Supports local growth and improves voltage levels		69-kV transmission line		230 kV
C	Capacitor bank or reactor Relieves low voltages or high voltages		Rebuilt 115- or 138-kV transmission line		138 kV
T-D	T-D interconnection Supports local growth		Rebuilt 69-kV transmission line		161 kV
			115- or 138-kV transmission line rating upgrade		345 kV
			69-kV transmission line rating upgrade		



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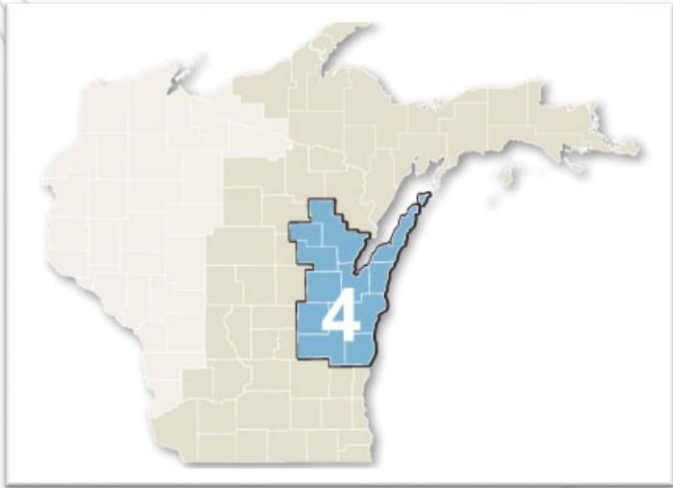


Zone 3 projects

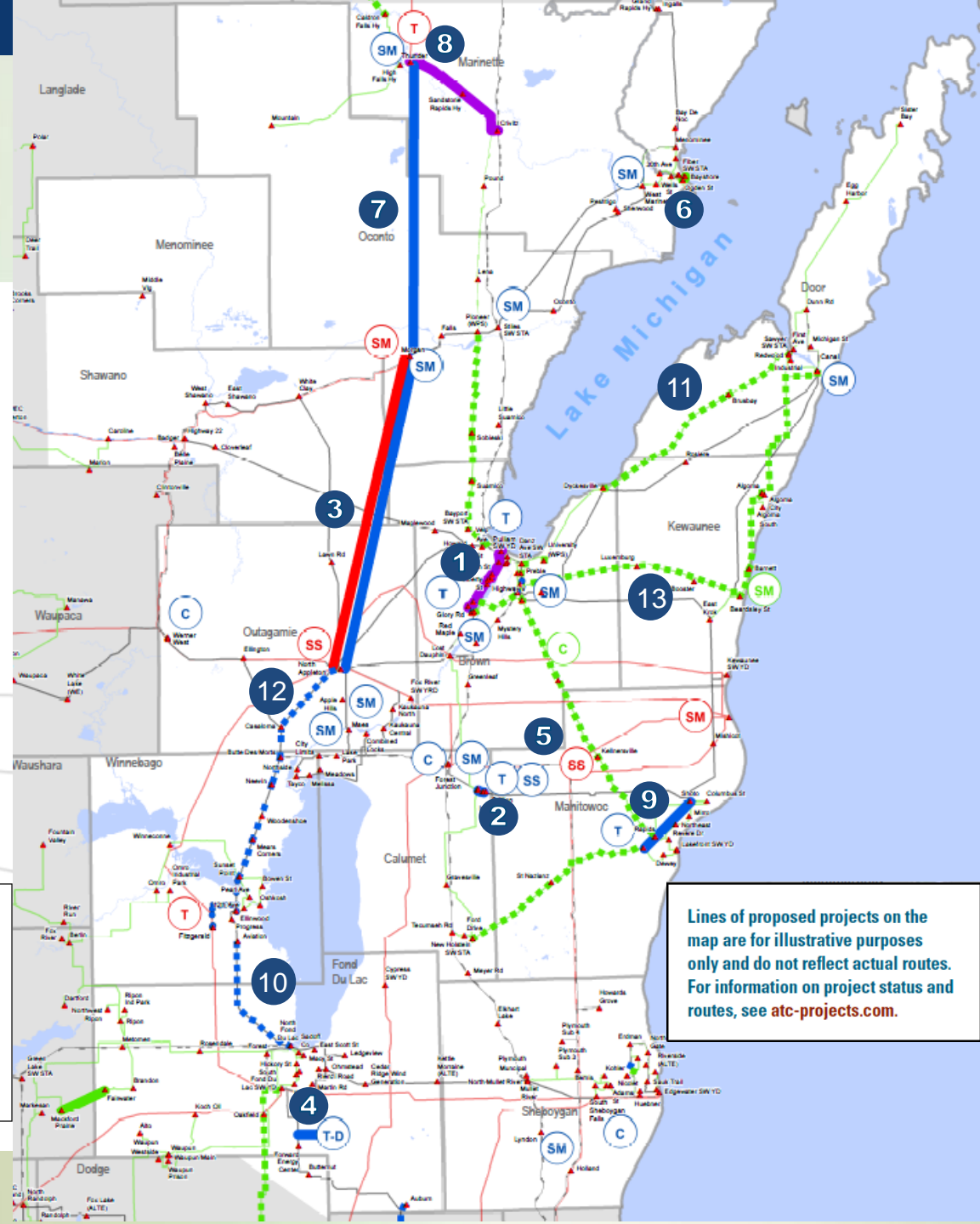
PROJECT DESCRIPTION	IN-SERVICE YEAR	NEED DRIVER
Planned Projects		
1 Colley Road-Brick Church 69-kV line	2018	Overloads, low voltages and condition
2 Badger Coulee: La Crosse area-North Madison-Cardinal 345-kV line construction	2018	Reliability, economics and public policy
3 Spring Valley-North Lake Geneva 138-kV line	2019	Overloads and low voltages, provide network service
Proposed Projects		
4 Cardinal-Hickory Creek	2020	Reliability, economics and public policy
Provisional Projects		
5 Cardinal-Blount 138-kV line construction	2029	Overloads and low voltages
Asset Renewal Projects		
6 Dam Heights-Dane 69-kV line re-route at dam	2015	Condition and performance
7 Concord-Rubicon 138-kV line rebuild (portion of Quad County Electric Reliability Project)	2016	Condition and performance
8 Dam Heights-Portage 69-kV line rebuild	2017	Condition and performance
9 Boscobel-Lone Rock 69-kV line rebuild	2019	Condition and performance

Additional projects may be found in the full 10-Year Assessment at atc10yearplan.com.

Zone 4



SUBSTATION KEY		TRANSMISSION LINE KEY		EXISTING TRANSMISSION LINES KEY	
SS	New substation Supports transmission system expansion		345-kV transmission line		69 kV
SM	Substation modifications Upgrades equipment ratings to avert facility overloads		115-, 138- or 161-kV transmission line		161 kV
T	Transformer Supports local growth and improves voltage levels		69-kV transmission line		115 kV
C	Capacitor bank or reactor Relieves low voltages or high voltages		Transmission line voltage conversion		230 kV
T-D	T-D interconnection Supports local growth		Rebuilt 345-kV transmission line		345 kV
			Rebuilt 115- or 138-kV transmission line		138 kV
			Rebuilt 69-kV transmission line		115- or 138-kV transmission line rating upgrade
			69-kV transmission line rating upgrade		69-kV transmission line rating upgrade



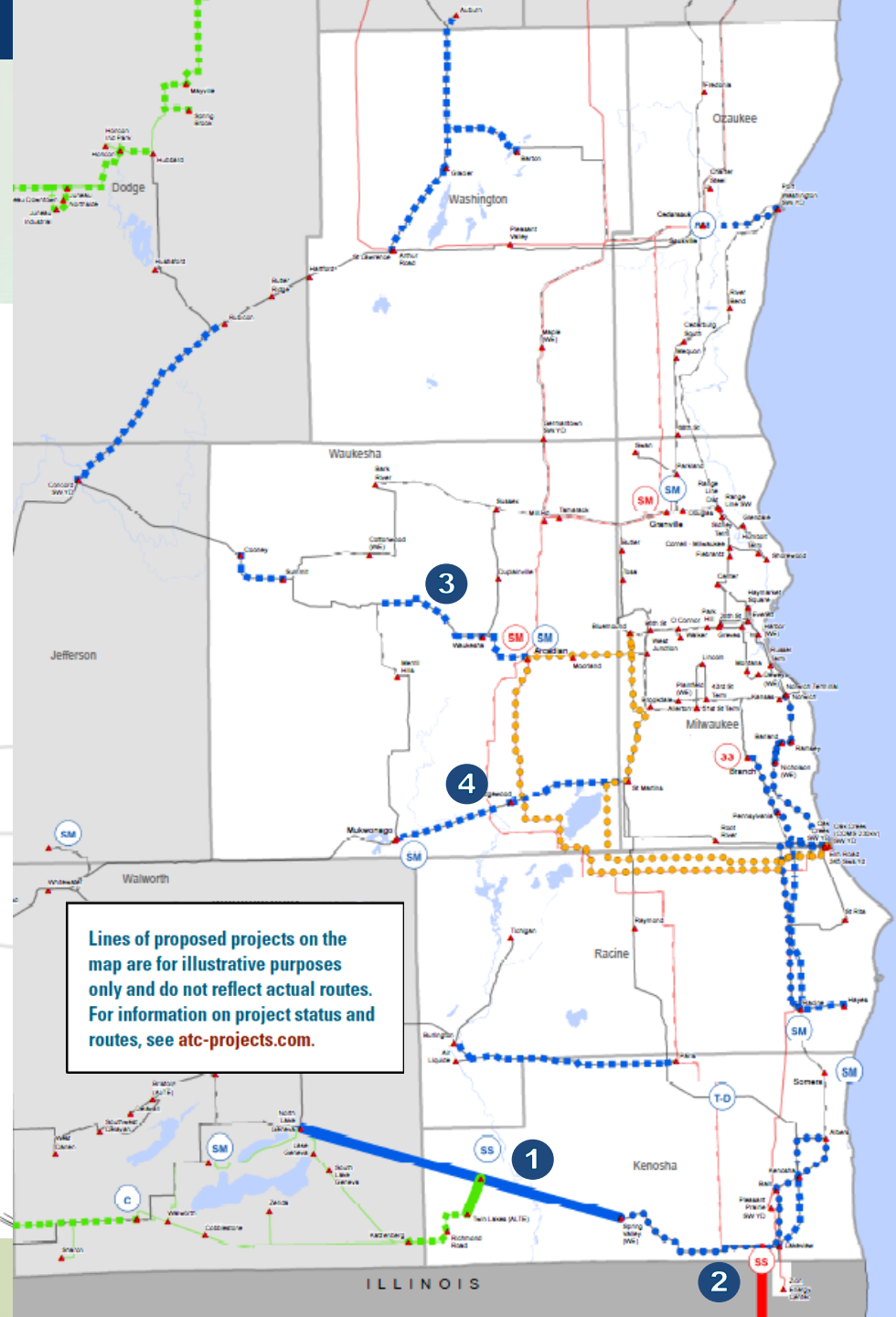
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Zone 4 projects

PROJECT DESCRIPTION	IN-SERVICE YEAR	NEED DRIVER
Planned Projects		
1 Pulliam-Glory Road 138-kV line conversion	2016	Overloads and low voltages
2 Iron Foundry 138/69-kV Substation construction and Glenview-Iron Foundry 69-kV line extension	2016 2016	T-D interconnection Overloads and low voltages
3 Bay Lake: North Appleton-Morgan 345-kV and 138-kV line construction	2019	
4 Creekview Substation: 138-kV line construction to serve T-D interconnection	2017	T-D interconnection 2017
5 Branch River 345-kV Substation construction	2018	Accommodate new generation
Proposed Projects		
6 Ogden St.-Bayshore 69-kV line construction	2018	Provide network service
Provisional Projects		
7 Morgan-Thunder 138-kV project	2020	Overloads and low voltages
8 Morgan-Plains 345-kV loop into new Thunder 345-kV Substation	2020	Overloads and low voltages
9 Shoto-Custer 138-kV line	2022	Overloads and low voltages
10 Aviation-North Fond du Lac 138-kV line rebuild	2025	Overloads
Asset Renewal Projects		
11 Dyckesville-Sawyer 69-kV line rebuild	2016	Condition and performance
12 North Appleton-Butte des Morts 138-kV rebuild	2017	Condition and performance
13 Finger Road-Canal 69-kV line rebuild	2019	Condition and performance

Additional projects may be found in the full 10-Year Assessment at atc10yearplan.com.

Zone 5



Lines of proposed projects on the map are for illustrative purposes only and do not reflect actual routes. For information on project status and routes, see atc-projects.com.

- 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

- System Solutions Key**
- | | |
|---|--|
| TRANSMISSION LINE KEY | EXISTING TRANSMISSION LINES KEY |
| 345-kV transmission line | 69 kV |
| 115-, 138- or 161-kV transmission line | 161 kV |
| 69-kV transmission line | 115 kV |
| Rebuilt 115- or 138-kV transmission line | 230 kV |
| Rebuilt 69-kV transmission line | 138 kV |
| 345-kV transmission line rating upgrade | 345 kV |
| 230-kV transmission line rating upgrade | |
| 115- or 138-kV transmission line rating upgrade | |
| 69-kV transmission line rating upgrade | |

Zone 5 projects

PROJECT DESCRIPTION

IN-SERVICE YEAR

NEED DRIVER

Planned Projects

1	Spring Valley-North Lake Geneva line 138-kV construction	2019	Overloads and low voltages, provide network service
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Proposed Projects

2	Southeast Wisconsin- Northeastern Illinois Interface Project	2020	Overloads
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Provisional Projects

None

Asset Renewal Projects

3	Waukesha-Merrill Hills 138-kV line partial rebuild (portion of Quad County Electric Reliability Project)	2015	Condition and performance
4	Mukwonago-Edgewood-St. Martins 138-kV line rebuild	2018	Condition and performance

Additional projects may be found in the full 10-Year Assessment at atc10yearplan.com.

For more information

Visit the ATC 10-Year Assessment
website: www.atc10yearplan.com

Or contact

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