

2022 10-Year Assessment Summary

PRESENTED BY

System Planning

November 7, 2022



Topics

- Messages
- Capital forecast
- Larger projects by zone

Messages

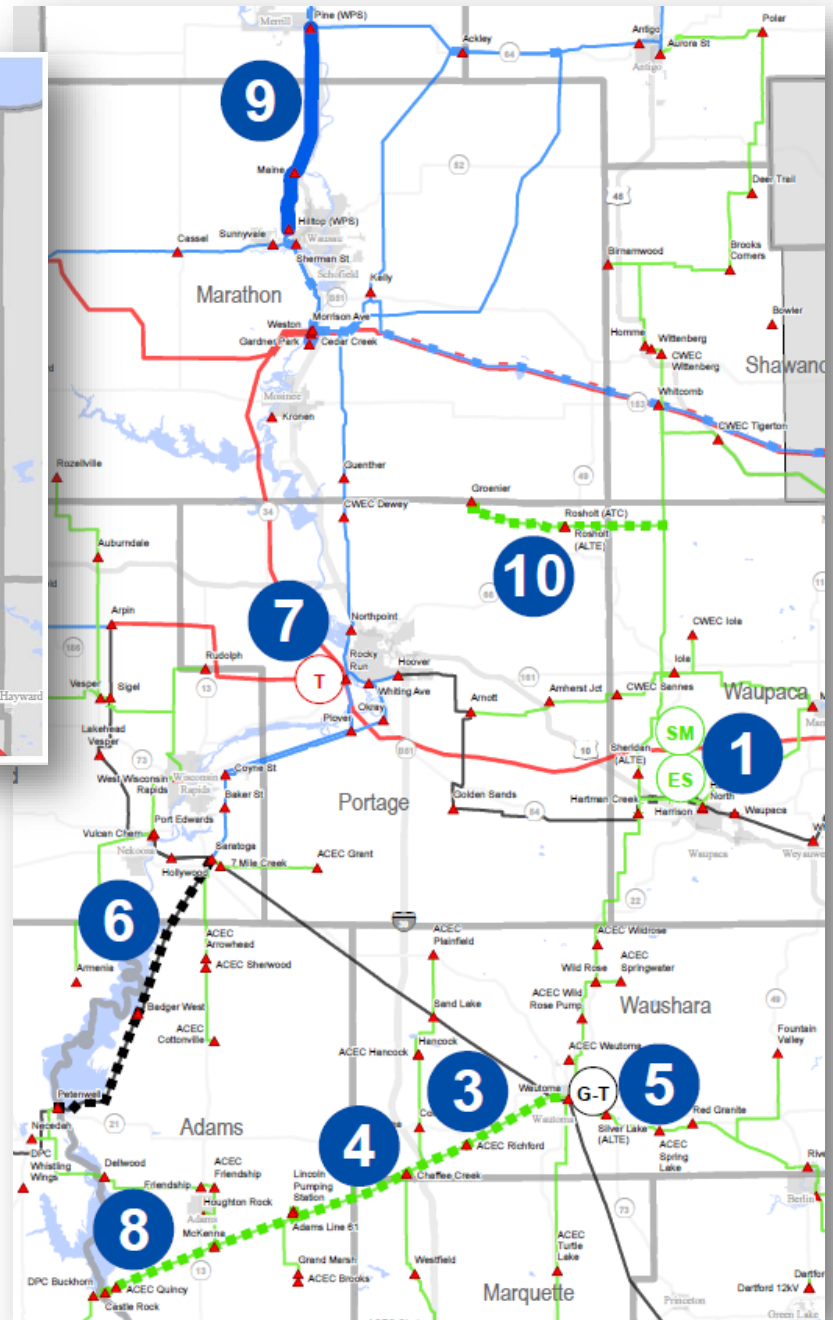
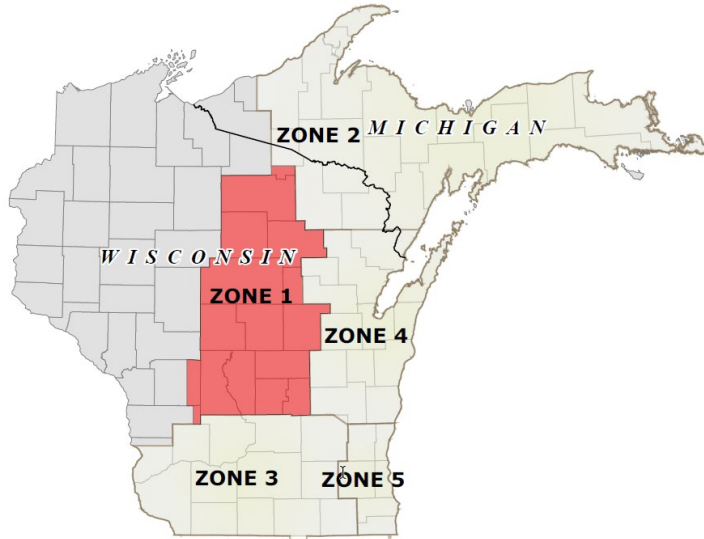
- Load forecast has similar growth rate as the 2021 Assessment
- 109 projects in our generation queue, totaling over 14.1 GW
- Continuing to see new network projects to support our customers' new generation and distribution interconnections
- New network projects are also supporting reliability and operational flexibility within ATC's footprint
- Nearly half of all projects are dedicated to maintaining and reinforcing the system and improving its resiliency

Capital Forecast (10-Year)

| | 2018 | 2019 | 2020 | 2021 | 2022 |
|--|---------------|---------------|---------------|---------------|---------------|
| Specific Network Projects | \$0.5B | \$0.4B | \$0.4B | \$0.6B | \$0.5B |
| Regional Multi-Value Projects | \$0.3B | \$0.2B | \$0.2B | \$0.2B | \$0.2B |
| MISO Long-Range Transmission Plan | - | - | - | \$0.0B | \$0.9B |
| Asset Renewal | \$1.5B | \$1.7B | \$1.8B | \$2.2B | \$2.8B |
| Other Capital Categories | \$0.5B/\$1.1B | \$0.6B/\$1.3B | \$0.5B/\$1.1B | \$0.5B/\$1.2B | \$0.7B/\$1.9B |
| Total 10-Year Capital Cost | \$2.8B/\$3.4B | \$2.9B/\$3.6B | \$2.9B/\$3.5B | \$3.5B/\$4.2B | \$5.1B/\$6.2B |

- MISO Long-Range Transmission Plan is in its second year, and we are increasing our capital forecast in that category.

Zone 1



| System Solutions Key | | |
|-------------------------------|--|--|
| Substation Key | Transmission Line Key | Existing Transmission Lines Key |
| (C) Capacitor Bank or Reactor | (Solid line) New Transmission Line | (Red zigzag) 345 kV |
| (SS) New Substation | (Dashed line) Rebuilt / Reconstructed Transmission Line | (Orange zigzag) 230 kV |
| (SM) Substation Modification | (Circle with dot) Line Rating Upgrade | (Purple zigzag) 161 kV |
| (T) Transformer | (Yellow bar) Voltage Conversion | (Black zigzag) 138 kV |
| (T-D) T-D Interconnection | (Purple bar) Communication | (Blue zigzag) 115 kV |
| (TL) Transmission Line | | (Green zigzag) 69 kV |
| (T-T) T-T Interconnection | Color denotes kV for both Substation and Transmission | (Grey line) MUF-Circuit - Color denotes kV |
| (ES) Energy Storage | To avoid clutter, map does not show 2026+ and some lower cost projects | (Grey line) Underground - Color denotes kV |
| (G-T) G-T Interconnection | | (Red zigzag) 345 kV Maintained by Others |

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.

Zone 1 Projects

| Project Description | TYA Project No. | In-Service Year | Need Driver | Status | Zone |
|--|-----------------|-----------------|---------------------------|-------------|------|
| Waupaca Area Energy Storage Project | 1 | 2023 | Operational Flexibility | Planned | 1 |
| J732 Superior SS Generator Interconnection and Network Upgrades | 2 | 2026 | G-T Interconnection | Planned | 1 |
| Wautoma - Chaffee Creek 69 kV (Y-49), Rebuild | 3 | 2023 | Condition and Performance | Planned | 1 |
| Chaffee Creek SS - Lincoln Pumping Station - McKenna 69 kV (Y-18/Y-145), Rebuild | 4 | 2023/2024 | Condition and Performance | Planned | 1 |
| J1002 Wautoma SS Network Upgrades and Interconnection Facilities | 5 | 2023 | G-T Interconnection | Planned | 1 |
| Petenwell - Saratoga 138 kV (X-43), Line Rebuild | 6 | 2023 | Reliability, Economic | Planned | 1 |
| Rocky Run Transformer Replacement | 7 | 2023 | Reliability | Planned | 1 |
| McKenna - Castle Rock 69 kV line (Y-47), rebuild | 8 | 2025 | Condition and Performance | Planned | 1 |
| North Central WI Reliability Project | 9 | 2026 | Reliability | Proposed | 1 |
| Groenier - Rosholt (ALTE) Tap, 69 kV (Y-71), Partial Rebuild and Rerate | 10 | 2026 | Condition and Performance | Proposed | 1 |
| Rocky Run – Werner West 345 kV (WERWL41), Rebuild | 11 | 2028 | Condition and Performance | Provisional | 1 |
| Rocky Run SS T2 and T4 Power Transformer Replacement | 12 | 2026 | Reliability | Provisional | 1 |

North Central WI Reliability Project (#9)



- Scope of Work:
 - Provide a 4th source into the Rhinelander Loop 115kV system
 - ◆ Add 115kV circuit path between Hilltop and Pine
 - ◆ Additional circuit will bypass Maine substation
 - ◆ Re-build and expand Pine SS Bus #2
- Estimated cost \$43.7 million.
- Challenges:
 - Construction outage planning
 - Material acquisition
- The project is scheduled to be in service in 2027.

Zone 2



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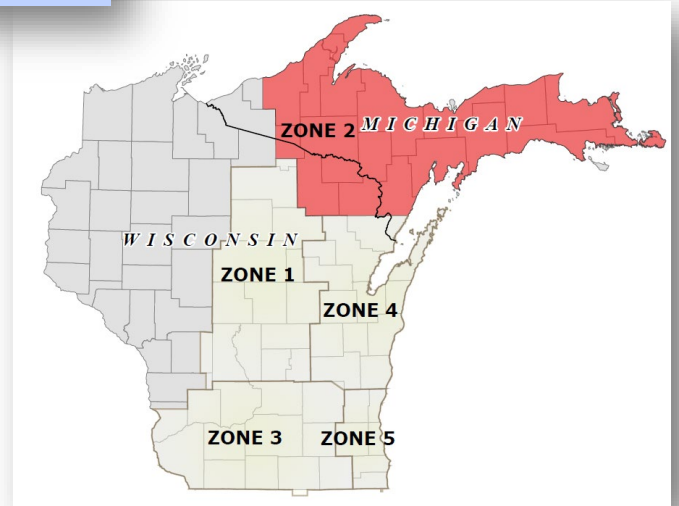


System Solutions Key

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| (C) Capacitor Bank or Reactor | ▬ New Transmission Line |
| (SS) New Substation | ▬ Rebuilt / Reconstructed Transmission Line |
| (SM) Substation Modification | ● Line Rating Upgrade |
| (T) Transformer | ⊗ Line Retirement |
| (T-D) T-D Interconnection | ▬ Voltage Conversion |
| (TL) Transmission Line | ▬ Communication |
| (T-T) T-T Interconnection | Color denotes kV for both Substation and Transmission |
| (ES) Energy Storage | To avoid clutter, map does not show 2026+ and some lower cost projects |
| (G-T) G-T Interconnection | |

Existing Transmission Lines Key

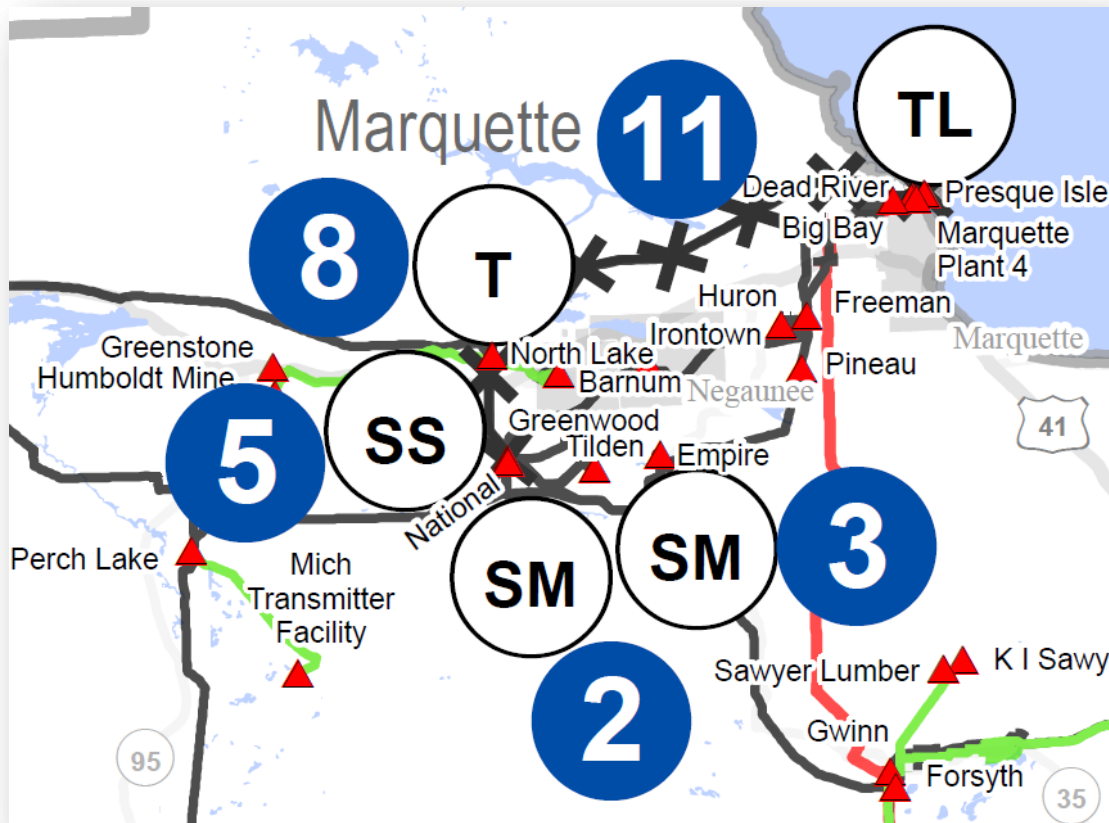
| | |
|---|----------------------------------|
| ▬ | 345 kV |
| ▬ | 230 kV |
| ▬ | 161 kV |
| ▬ | 138 kV |
| ▬ | 115 kV |
| ▬ | 69 kV |
| ▬ | Multi-Circuit - Color denotes kV |
| ▬ | Underground - Color denotes kV |
| ▬ | 345 kV Maintained by Others |



Zone 2 Projects

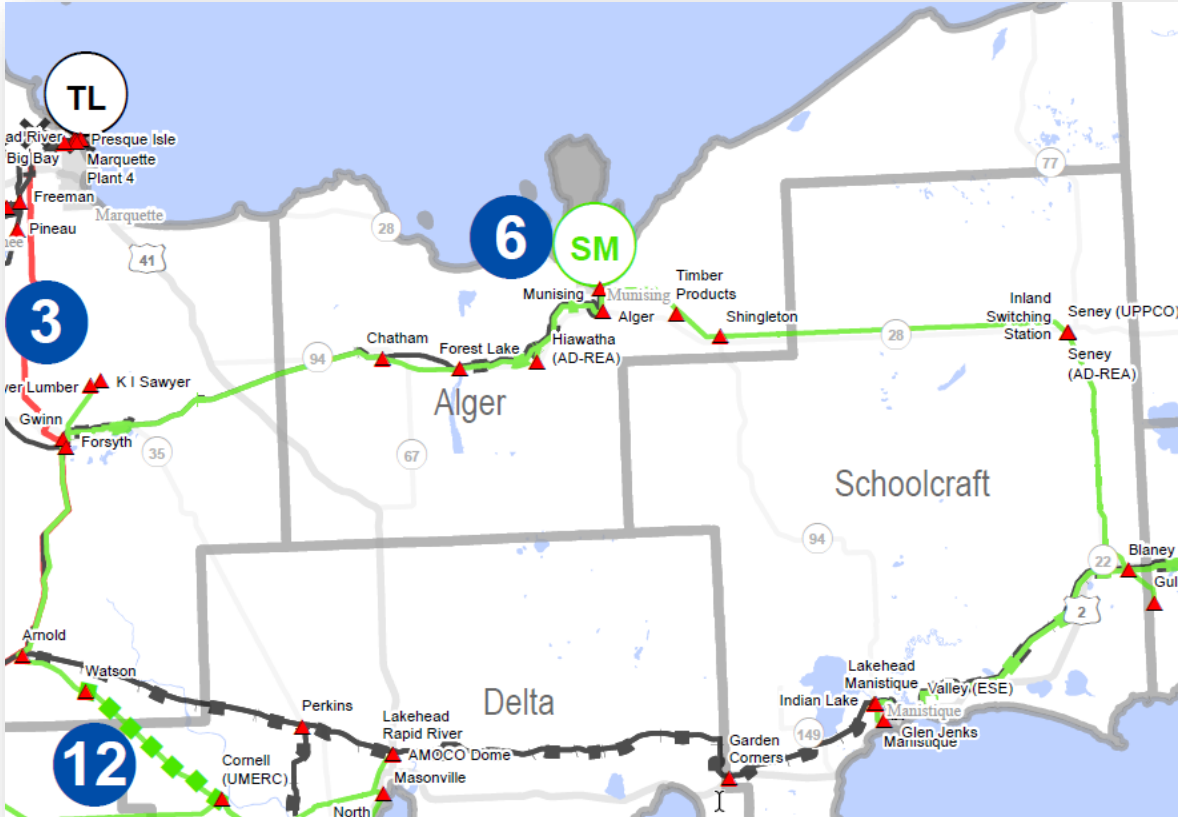
| Project Description | TYA Project No. | In-Service Year | Need Driver | Status | Zone |
|--|-----------------|-----------------|--|-------------|------|
| Atlantic SS, 138/69 kV Bus Reconfiguration and T transformer Addition | 1 | 2022 | Operational Flexibility, Condition and Performance | Planned | 2 |
| Tilden SS, Control House Replacement and Breaker & Relay Asset Renewal | 2 | 2023 | Condition and Performance | Planned | 2 |
| Empire SS, Control House Replacement and Breaker & Relay Asset Renewal | 3 | 2024 | Condition and Performance | Planned | 2 |
| Winona-Atlantic 69-kV (Winona69), rebuild | 4 | 2024 | Reliability | Planned | 2 |
| Marquette County Reactive Power Project | 5 | 2024 | Reliability | Planned | 2 |
| Munising Area Reactive Power Project | 6 | 2025 | Reliability | Planned | 2 |
| Pine Hy Tap – Pine Hy 69kV (ASPY31-1), Rebuild & OPGW | 7 | 2027 | Condition and Performance | Planned | 2 |
| North Lake SS, T transformer Asset Renewal | 8 | 2025 | Condition and Performance | Planned | 2 |
| Pine River - Mich Limestone Loading Dock 69 kV (ESE_6906), Rebuild | 9 | 2027 | Condition and Performance | Planned | 2 |
| Chandler-Delta 69 kV (Delta1 and Escanaba1), Partial Rebuild and OPGW | 10 | 2026 | Condition and Performance | Planned | 2 |
| Perch Lake- National 138kV (468) Partial Retirement Project | 11 | 2024 | Reliability | Provisional | 2 |
| Cornell Tap – Watson Tap 69kV (Chandler), Partial Rebuild | 12 | 2026 | Condition and Performance | Provisional | 2 |

Marquette County Reactive Power Project: +/- 50MVAR STATCOM (#5)



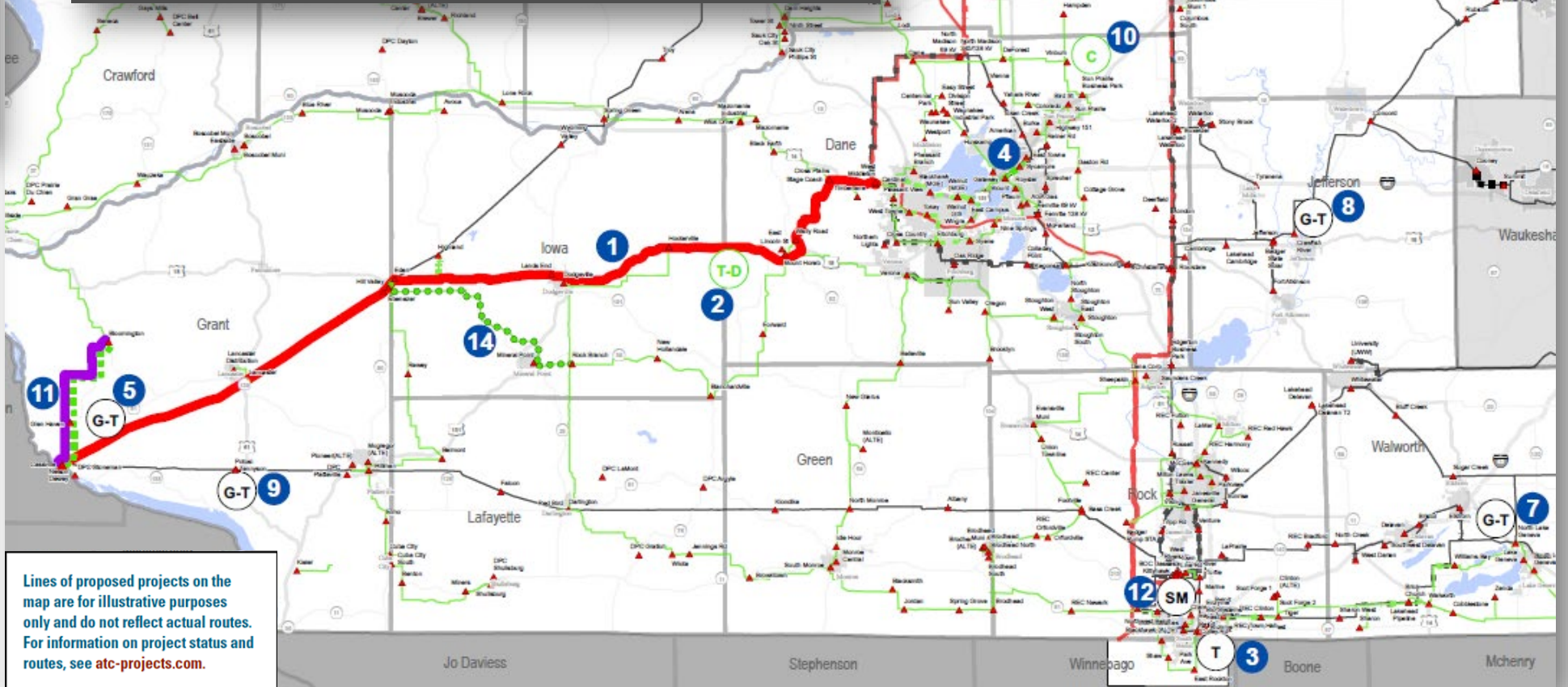
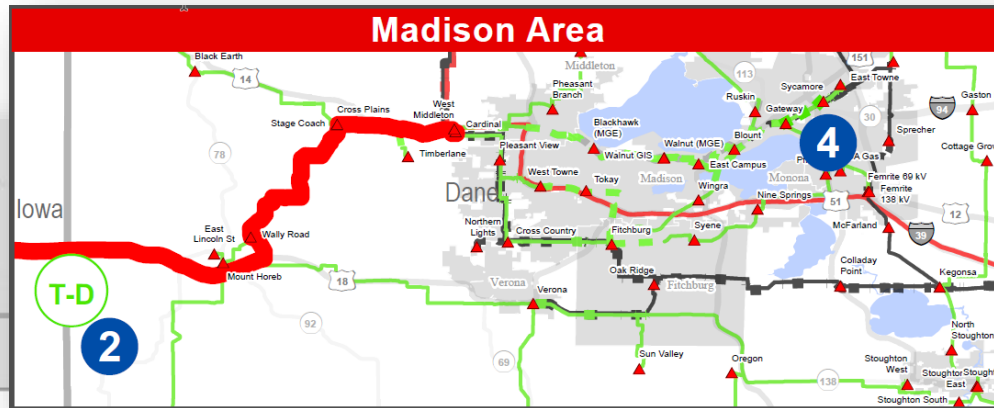
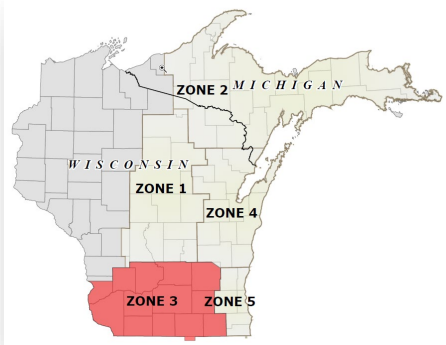
- Scope of Work:
 - Install +/- 50MVAR, STATCOM at new Greenwood Site and connect to National SS at 138kV
 - Add spare 138kV transformer
 - Add new 138kV bus and overhead connection from Greenwood Site to National
 - Install new 138kV circuit breaker and protection package
- Estimated cost: \$37.2 million.
- Construction scheduled in Q3 2024.
- Challenges:
 - Material acquisition
- The project is scheduled to be in service in 2024.

Munising Area Reactive Power Project (#6)



- Scope of Work:
 - Install +/- 10MVAR, STATCOM at new Munising 69kV Substation
 - Add spare 69kV transformer
 - Add new 69kV bus position to accommodate device
 - Install new 69kV circuit breaker and protection package
- Estimated cost: \$10 million.
- Construction scheduled in Q3 2025.
- Challenges:
 - Material acquisitioning
- The project is scheduled to be in service in 2025.

Zone 3



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 |
| (C) Capacitor Bank or Reactor | — New Transmission Line |
| (SS) New Substation | — Rebuilt / Reconstructed Transmission Line |
| (SM) Substation Modification | — Line Rating Upgrade |
| (T) Transformer | — Voltage Conversion |
| (T-D) T-D Interconnection | — Communication |
| (TL) Transmission Line | |
| (T-T) T-T Interconnection | Color denotes KV for both Substation and Transmission |
| (ES) Energy Storage | To avoid clutter, map does not show 2026+ and some lower cost projects |
| (G-T) G-T Interconnection | |

Existing Transmission Lines Key

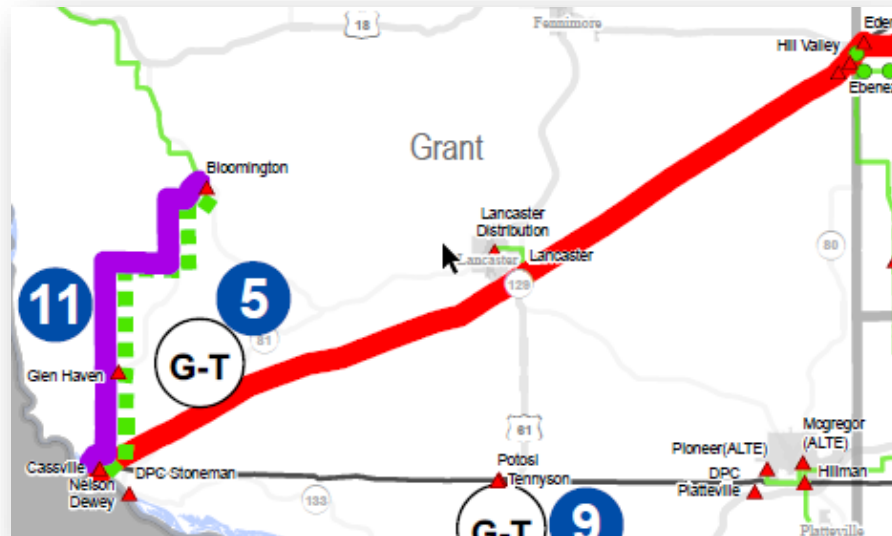
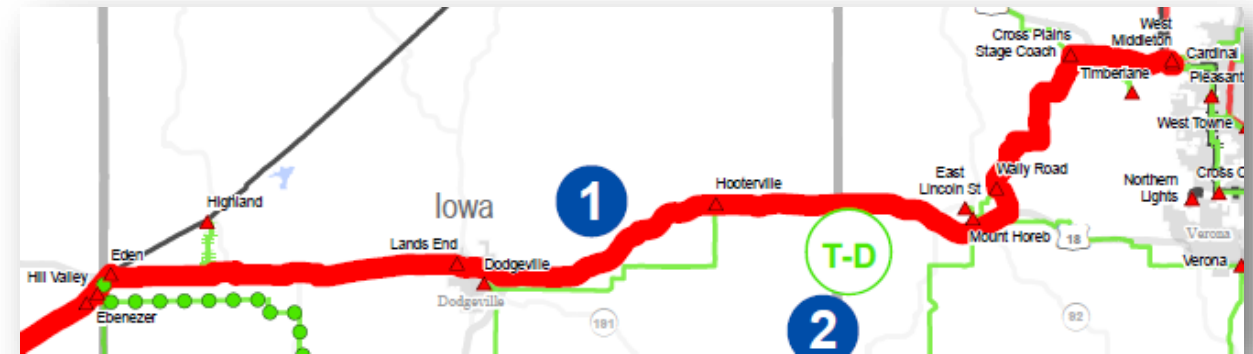
| | |
|--|----------------------------------|
| | 345 KV |
| | 230 KV |
| | 161 KV |
| | 138 KV |
| | 115 KV |
| | 69 KV |
| | Multi-Circuit - Color denotes KV |
| | Underground - Color denotes KV |
| | 345 KV Maintained by Others |

Zone 3 Projects

| Project Description | TYA Project No. | In-Service Year | Need Driver | Status | Zone |
|--|-----------------|-----------------|--|-------------|------|
| Cardinal SS - Hickory Creek SS 345-kV, line construction | 1 | 2023 | Reliability, Economic and Policy | Planned | 3 |
| Barneveld and Military Ridge SS, DIC, new substations | 2 | 2023 | T-D Interconnection | Planned | 3 |
| Colley Road SS, T transformer Replacement and Asset Renewal | 3 | 2023 | Condition and Performance | Planned | 3 |
| Gateway - Sycamore (6902), 69kV, rebuild | 4 | 2023 | Reliability | Planned | 3 |
| J1000 Comet SS Network Upgrades and Interconnection Facilities | 5 | 2023 | G-T Interconnection | Planned | 3 |
| J1003 North Beaver Dam SS Network Upgrades and Interconnection Facilities | 6 | 2023 | G-T Interconnection | Planned | 3 |
| J1042 North Lake Geneva SS Network Upgrades and Interconnection Facilities | 7 | 2023 | G-T Interconnection | Planned | 3 |
| J1154 Crawfish River Solar Network Upgrades | 8 | 2023 | G-T Interconnection | Planned | 3 |
| J947 Tennyson SS Generator Interconnection Facilities and Network Upgrades | 9 | 2023 | G-T Interconnection | Planned | 3 |
| Vinburn Substation 69 kV Capacitor Addition | 10 | 2024 | Reliability, Condition and Performance | Planned | 3 |
| Nelson Dewey - Bloomington (Y-184), 69kV, rebuild & OPGW | 11 | 2025 | Reliability, Condition and Performance | Planned | 3 |
| Rock County Reliability Project | 12 | 2024 | Reliability | Proposed | 3 |
| North Beaver Dam SS Asset Renewal & South Beaver Dam – North Beaver Dam, 69kV (Y-59) Line Rebuild | 13 | 2027 | Condition and Performance | Provisional | 3 |
| Eden – Rock Branch 69kV (Y-106) Uprate | 14 | 2026 | Economic, Condition and Performance | Provisional | 3 |

Cardinal - Hickory Creek 345-kV, line construction (#1)

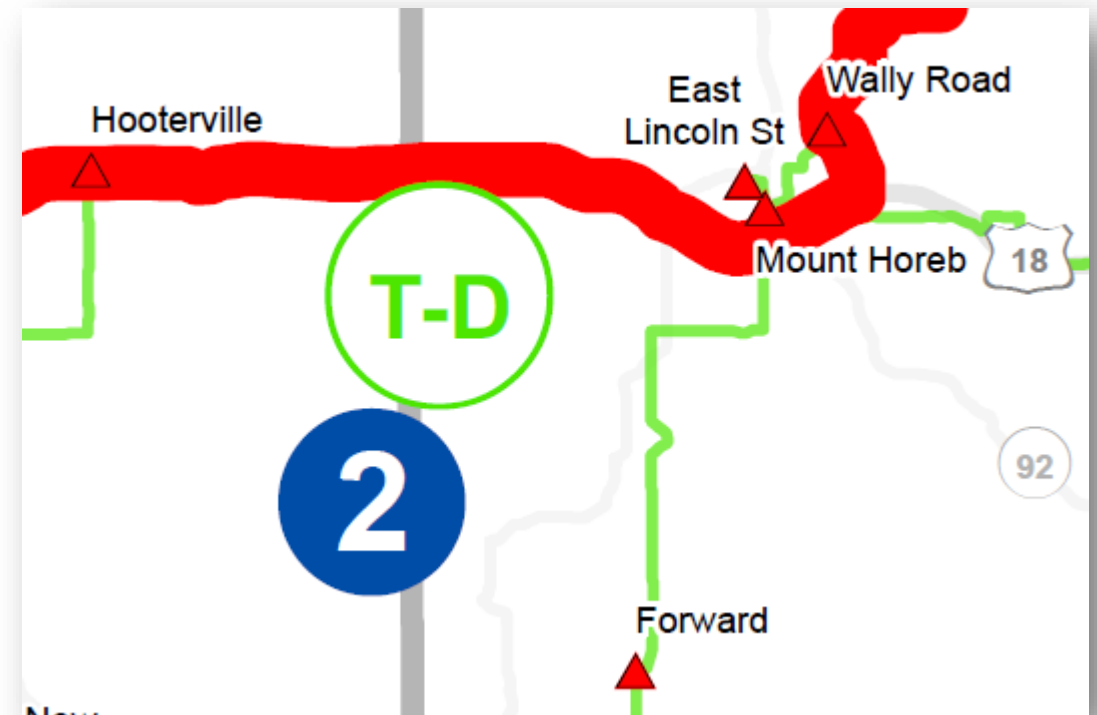
- Scope of Work:
 - 102-mile, 345-kV Transmission Line connecting Dubuque County, Iowa to Dane County, Wisconsin.
- Project is co-owned by ATC LLC, ITC Midwest LLC and Dairyland Power Cooperative.
- Initial estimated project cost: \$500 million.



- Public Service Commission of Wisconsin CPCN approval in 2019.
- Construction began in Iowa in April of 2021 and in Wisconsin in November of 2021.
- Challenges on ATC's scope of the project:
 - Construction coordination
 - Weather
- The project is scheduled to be in service in 2023.

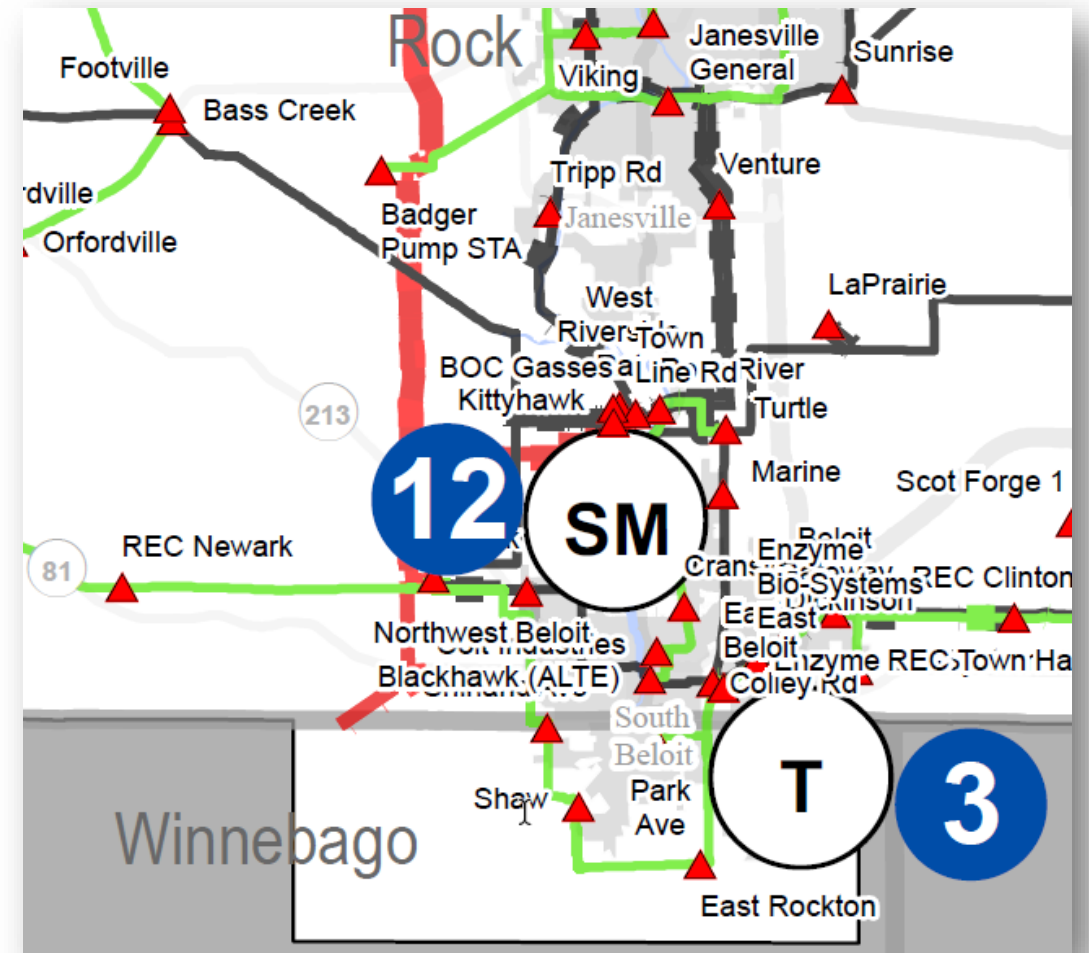
Barneveld and Military Ridge SS, DIC, new substations (#2)

- Scope of Work:
 - Construct a new Hooterville - Mount Horeb 69 kV line as the 2nd circuit along the Cardinal – Hickory Creek 345 kV corridor.
 - Connect new line with 2 new distribution substations: Barneveld and Military Ridge.
- Estimated cost \$13.1 million.
- Public Service Commission of Wisconsin CPCN approval Apr 2022.
- Construction scheduled in Q4 2022 and 2023.
- Challenges:
 - Y-36 extension common with Cardinal Hickory Creek project
 - Material acquisitioning
- The project is scheduled to be in service in 2023.

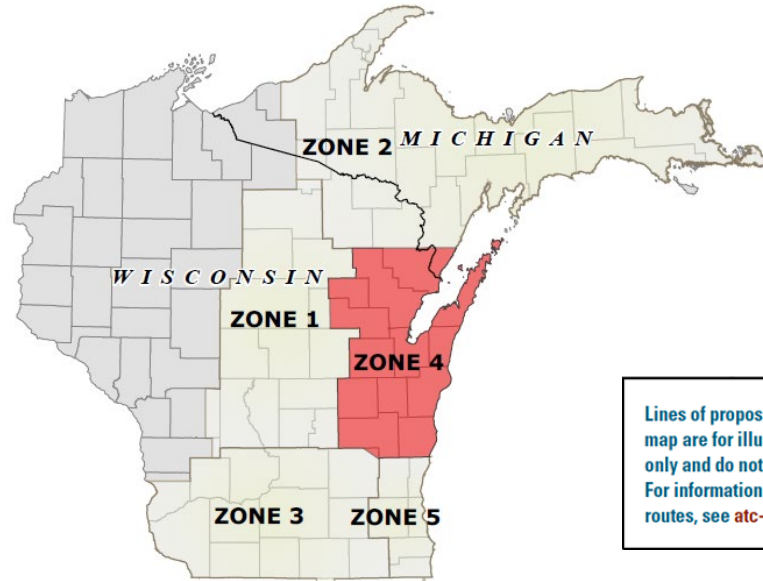


Rock County Reliability Project (#12)

- Scope of Work:
 - Connect 345-138 kV sources in Rock County at the Kittyhawk substation.
 - ◆ Build-out 138-kV side of Kittyhawk substation.
 - ◆ Construct a new 138-kV line connecting Kittyhawk and Townline Road substations.
 - ◆ Partial rebuild existing Rock River – Colley Road 138-kV and Rock River – Blackhawk 69-kV lines.
- Estimated cost: \$55 million.
- Public Service Commission of Wisconsin CA application in process.
- Construction scheduled in Q4 2023.
- Challenges:
 - Construction Outage Planning with local generation
 - Material acquisition
- The project is expected to be in service in 2024.

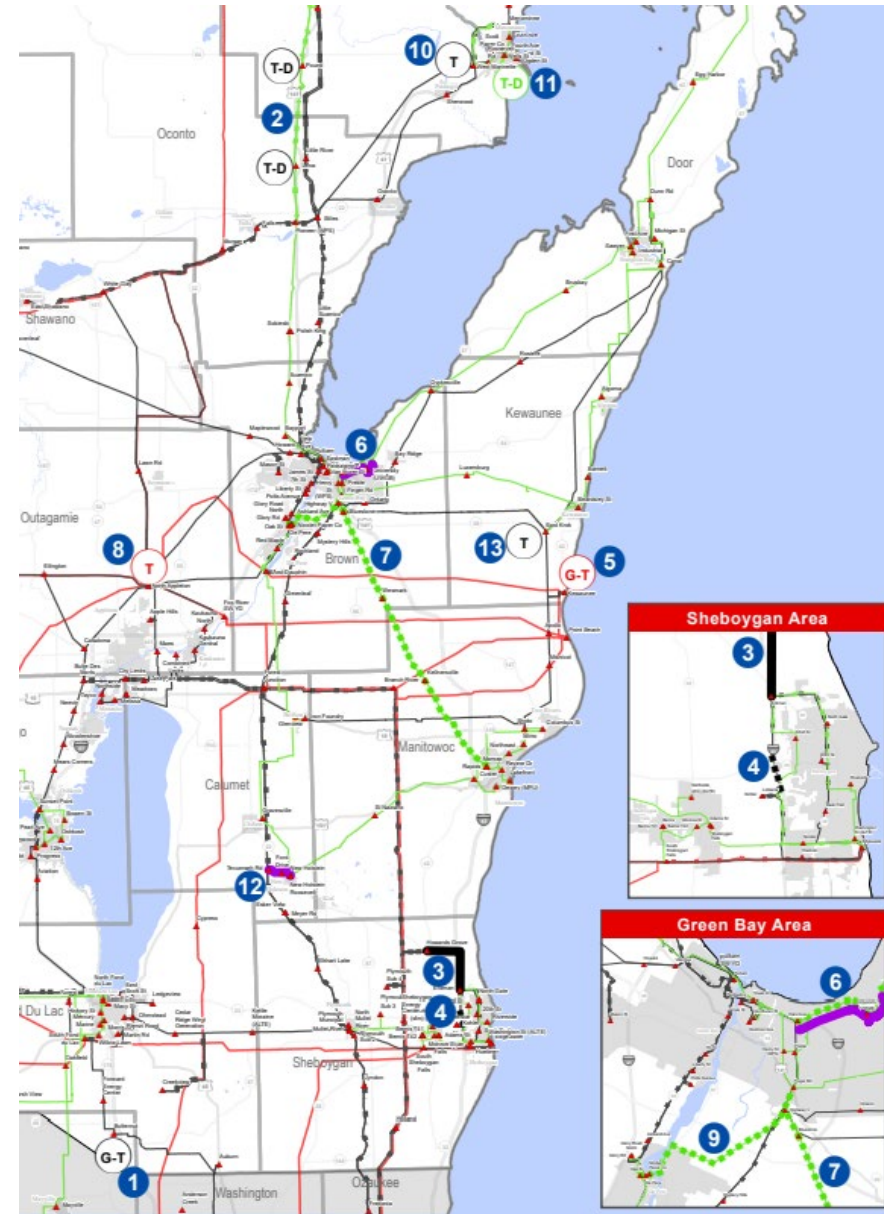


Zone 4



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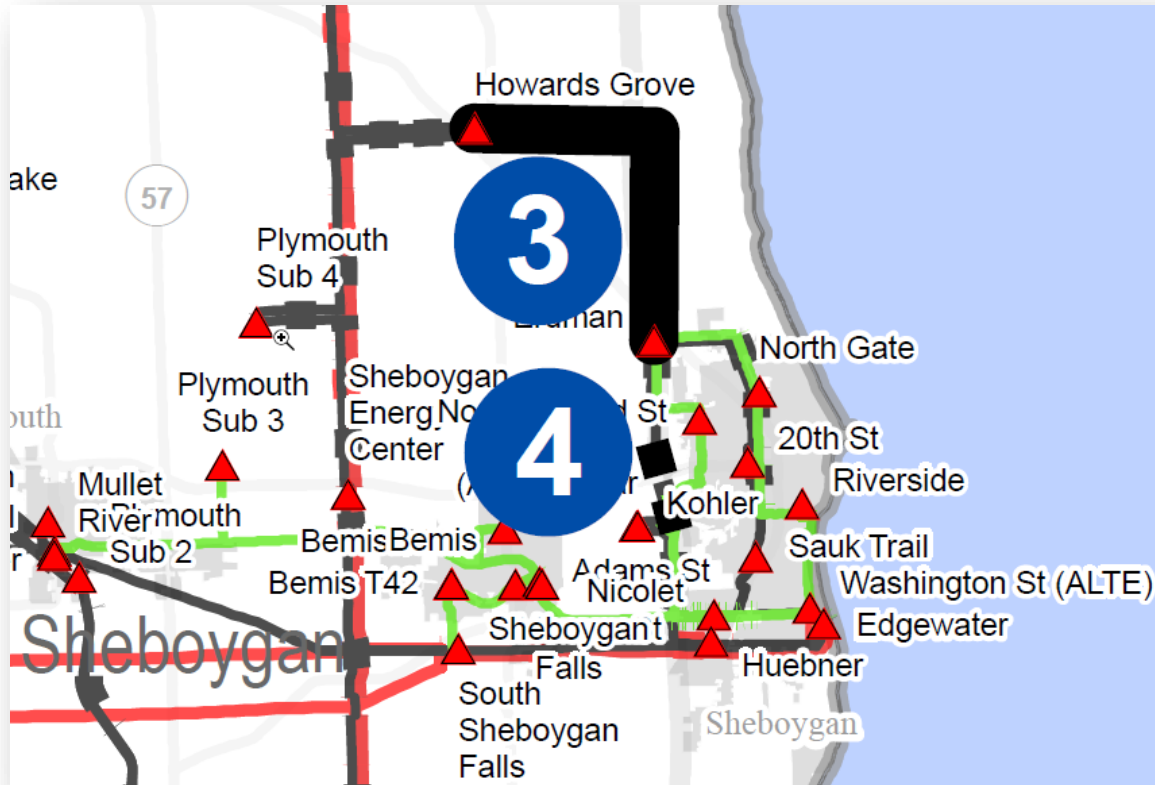
| System Solutions Key | |
|-------------------------------|--|
| Substation Key | Transmission Line Key |
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| (SS) New Substation | (Dashed Grey) Rebuilt / Reconductored Transmission Line |
| (SM) Substation Modification | (Grey Circle) Line Rating Upgrade |
| (T) Transformer | (Yellow) Voltage Conversion |
| (T-D) T-D Interconnection | (Purple) Communication |
| (TL) Transmission Line | |
| (T-T) T-T Interconnection | |
| (ES) Energy Storage | |
| (G-T) G-T Interconnection | |
| | Existing Transmission Lines Key |
| | (Red) 345 kV |
| | (Orange) 230 kV |
| | (Purple) 161 kV |
| | (Black) 138 kV |
| | (Blue) 115 kV |
| | (Green) 69 kV |
| | (Grey) Multi-Circuit - Color denotes kV |
| | (Dark Grey) Underground - Color denotes kV |
| | (Red with X) 345 kV Maintained by Others |
| | Color denotes kV for both Substation and Transmission |
| | To avoid clutter, map does not show 2026+ and some lower cost projects |



Zone 4 Projects

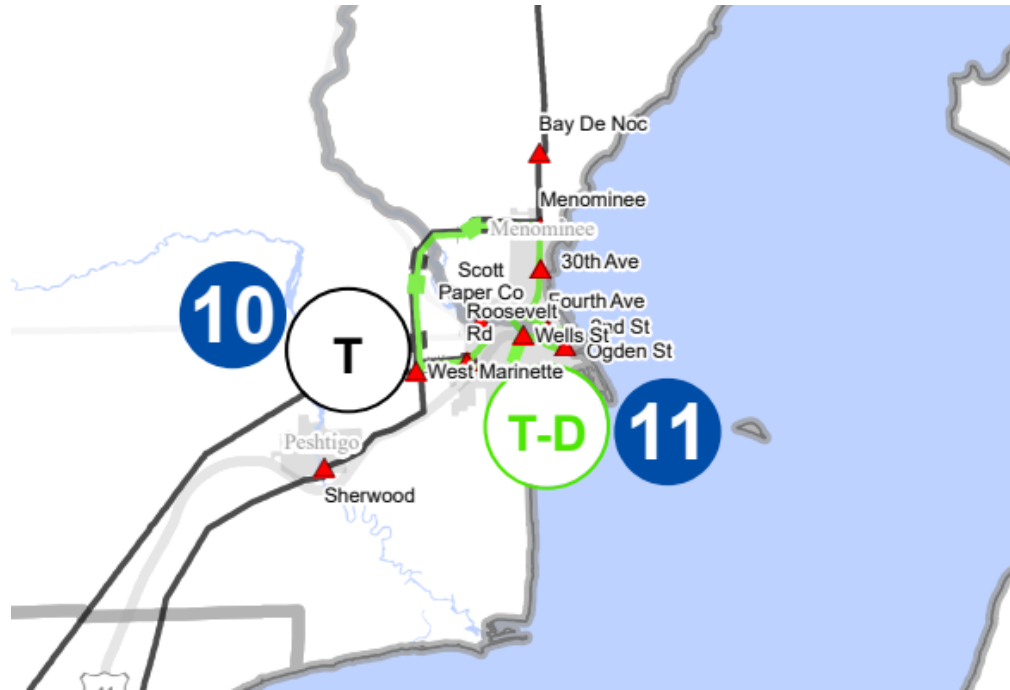
| Project Description | TYA Project No. | In-Service Year | Need Driver | Status | Zone |
|---|-----------------|-----------------|--|-------------|------|
| J1171 Butternut SS Network Upgrades and Interconnection Facilities | 1 | 2023 | G-T Interconnection | Planned | 4 |
| Pioneer SS – Crivitz SS 138-kV Line (E-83/B-2), Retire 69-kV and Reconfigure Load to 138-kV | 2 | 2023 | Condition and Performance, T-D Interconnection | Planned | 4 |
| Howards Grove – Erdman 138kV, new line | 3 | 2023 | Reliability | Planned | 4 |
| Edgewater SS - Lodestar SS 138 kV (X-48/Y-31), underground cable rebuild | 4 | 2023 | Condition and Performance | Planned | 4 |
| J1101 Kewaunee SS Network Upgrades and Interconnection Facilities | 5 | 2023 | G-T Interconnection | Planned | 4 |
| Danz Ave. SW STA - University (WPS) 69-kV line (O-15), underground rebuild & OPGW | 6 | 2023 | Condition and Performance | Planned | 4 |
| Finger Road SW STA - Wesmark- Rapids, 69-kV line (FIRY11/R-44), rebuild | 7 | 2024 | Condition and Performance | Planned | 4 |
| North Appleton SS - T transformer Replacement and Asset Renewal | 8 | 2024 | Condition and Performance | Planned | 4 |
| Oak St - Hwy V 69-kV line (Z-26), rebuild | 9 | 2025 | Condition and Performance | Planned | 4 |
| West Marinette SS – T transformer and Breaker Asset Renewal | 10 | 2025 | Condition and Performance | Planned | 4 |
| Wells St. DIC – new West Marinette-Wells St. 69 kV line | 11 | 2024 | T-D Interconnection | Planned | 4 |
| New Holstein Area Reliability Project | 12 | 2026 | Reliability | Provisional | 4 |
| East Krok T transformer Replacement | 13 | 2026 | Reliability | Provisional | 4 |

Howards Grove-Erdman 138 kV line (#3)



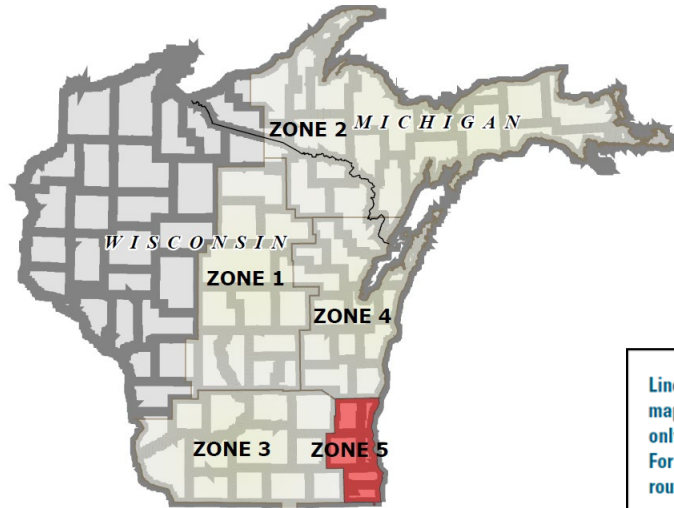
- Scope of Work
 - New 138kV transmission line between Howards Grove and Erdman
 - Howards Grove 138kV expansion
 - Erdman SS 138kV site reconfiguration
- Estimated Cost \$28.4 million
- Public Service Commission of Wisconsin CPCN approval April 2022
- Construction started in 2022
- Challenges:
 - Hybrid route ordered by PSC
 - Material acquisition
- Project scheduled to be in service in 2023

Wells St DIC – New West Marinette – Wells St 69kV line (#11)



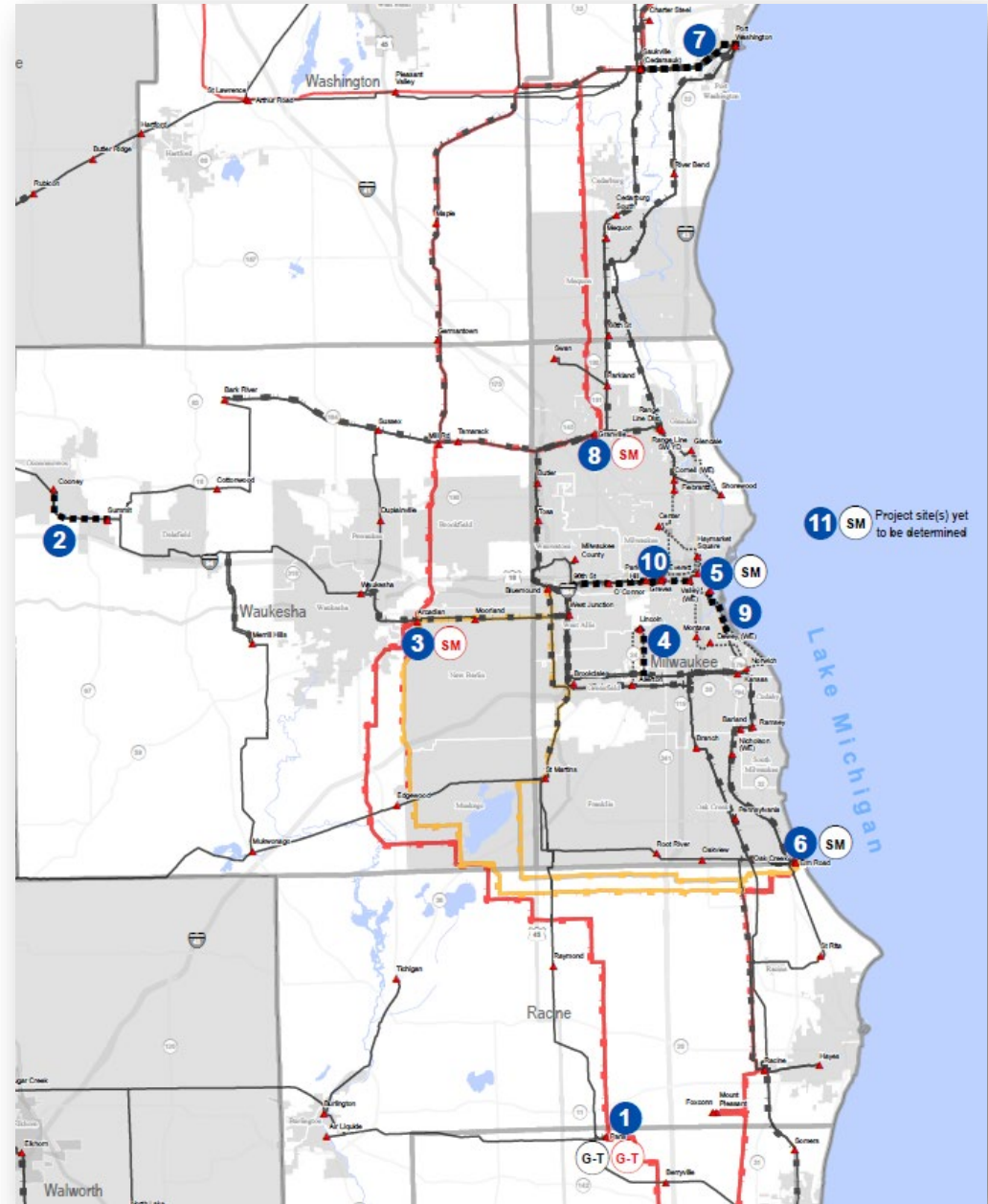
- Scope of Work:
 - Rebuild 1.6 miles of West Marinette – Wells St. 69-kV line as a double circuit 69-kV line
 - Build new 4-mile, 69-kV transmission line between West Marinette Substation and Wells St. Substation
 - Add 1.9 miles of new circuit between Roosevelt Substation and the Wells St. Substation
 - New 69kV Bus position at Wells St
 - Install 1.0-mile underground circuit from Riser Structure to Wells St. (in spare conduit duct)
- Estimated cost \$25.2 million.
- Public Service Commission of Wisconsin CA approval August 2022.
- Challenges:
 - Material acquisitioning
- The project is scheduled to be in service in 2024

Zone 5



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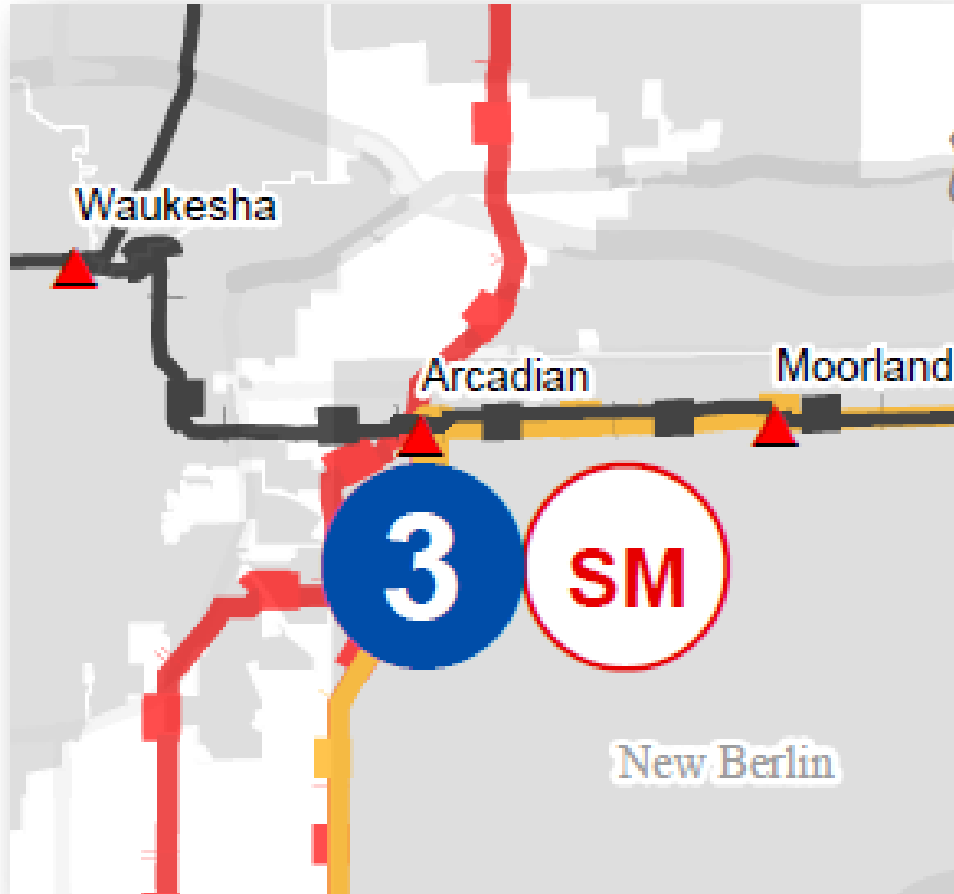
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| (G-T) G-T Interconnection | | (Red) 345 kV Maintained by Others |



Zone 5 Projects

| Project Description | TYA Project No. | In-Service Year | Need Driver | Status | Zone |
|--|-----------------|-----------------|--|-------------|------|
| J850/J878 MPFCA East Paris New Substation | 1 | 2022 | G-T Interconnection | Planned | 5 |
| Summit - Cooney 138-kV line (6431), rebuild | 2 | 2023 | Condition and performance | Planned | 5 |
| Arcadian SS, power transformer and control house replacement and asset renewal | 3 | 2025 | Condition and performance/ Reliability | Planned | 5 |
| Lincoln - 43rd Street Terminal 138 kV (5053), Replace with double circuit duct bank and XLPE cable | 4 | 2024 | Condition and Performance | Planned | 5 |
| Everett GIS Asset Renewal | 5 | 2025 | Condition and Performance | Planned | 5 |
| Oak Creek, Racine SS and Remote Ends, Control Buildings and Relaying Asset Renewal | 6 | 2025 | Condition and Performance | Planned | 5 |
| Port Washington – Saukville 138 kV (X-132/X-133) partial rebuild | 7 | 2025 | Condition and Performance | Planned | 5 |
| Granville SS, Control House and Relay Replacement and Asset Renewal | 8 | 2025 | Condition and Performance | Proposed | 5 |
| Norwich - Harbor 138kV, (893K11), underground line replacement | 9 | 2025 | Condition and Performance | Proposed | 5 |
| WisDOT I-94 Stadium Group of Projects | 10 | 2026 | Condition and Performance , Relocation | Proposed | 5 |
| Milwaukee Area Reactive Power Project | 11 | 2026 | Reliability | Provisional | 5 |

Arcadian SS Asset Renewal (#3)



- Scope of Work:
 - Asset renewals of 138-kV and 345-kV equipment
 - Reconfiguration of the 345-kV bus from a straight bus to a breaker-and-a-half
- Estimated cost \$51.6 million.
- Public Service Commission of Wisconsin CA approval May 2021.
- Construction started in 2022.
- Challenges:
 - Construction outage planning
 - Material acquisition
- The project is scheduled to be in service in 2025.

For More Information

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

Or contact

Allison Bartz

Email: abartz@atcllc.com

