

## **Transmission Cost Recovery Rider Descriptions of Projects**

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL19-032:

- Eau Claire 345 kv Upgrade

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL20-025:

- Line 0795 Rebuild: Freeport to West St. Cloud
  - Avon to Albany
- Belgrade to Paynesville Rebuild
- Canisota Junction to Salem Rebuild
- CEN LCO 69 kV Rebuild
- Long Lake to Baytown

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL21-025:

- Bayfield Loop
- Helena to Scott County MISO Interconnections
- Line 0723 Rebuild: Bird Island to Atwater
  - Bird Island to Lake Lillian
  - Cosmos to Lake Lillian
- Line 0761 Rebuild: Lake City to Zumbrota
- Line 0790 Rebuild: Dassel to Delano<sup>1</sup>
  - Dassel to Cokato
- Line 0794 Rebuild: Black Oak to Douglas County
- Line 0795 Rebuild: Freeport to West St. Cloud
  - Avon to Brockway Tap
  - St. John's to Watab River
- Line 5401 Rebuild: Maple Lake to Wakefield

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<sup>1</sup> We have updated the Line 0790 project name to "Dassel to Delano" to better reflect the end points of the project.

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL22-022:

- Huntley-South Bend 161 kV Rebuild
- Line 0714 Rebuild: Watonwan to Madelia
- Line 0717/0771 Thru Flow Mitigation
- Line 0726 Rebuild: Pipestone to Rock River to Woodstock
- Line 0741 Rebuild: Big Swan to Atwater
- Line 0749 Rebuild: Waseca to ITC Tap
- Line 0754 Rebuild: Linn Street to Becker
- Line 0782 Rebuild: Westgate to Gleason Lake
- Line 0795 Rebuild: Freeport to West St. Cloud New Segments in 2023
- Line 0859 Rebuild: Inver Hills to Chemolite

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL23-026:

- Brookings Second Circuit
- Line 0708 Rebuild: Eagle Lake to Waterville
- Line 0736 Rebuild: Arden Hills to Lawrence Creek
- Line 0822 Rebuild: Str 107 to Empire

### **Project Updates**

Below we discuss project scope changes and any significant variances between projects' current capital cost forecast and the forecast presented in last year's TCR Rider Petition.

- **Line 0795 Rebuild: Avon to Brockway Tap**

The forecasted capital cost increase for the Line 0795 Rebuild: Avon to Brockway Tap project is due to unanticipated delays of material delivery and securing outages for the transmission line due to coordination of work schedules. This shifted the forecasted in-service date from April 2024 to September 2024.

- **Brooking Second Circuit**

The forecasted capital cost increase for the Brookings Second Circuit project is due to unexpected permitting delays and a conflicting outage in the spring of 2024, which delayed construction leading to planned additional construction labor to complete the project. This project is expected to be placed in-service as planned in fall 2024, and the second phase is still expected to be placed in-service in fall 2025.

- **Canisota Junction to Salem Rebuild**

The forecasted capital cost increase for the Canisota Junction to Salem Rebuild project is due to unanticipated delays of material delivery causing additional costs for prioritizing construction schedules. This shifted the forecasted in-service date. This project was originally planned to be placed in-service December 2022. Delays in material delivery pushed in-servicing to 2023, and then outage sequencing pushed it to December 2024.

- **Huntley to South Bend 161 kV**

The primary reason for an overall cost increase to the Huntley-South Bend 161 kV project is due to unanticipated large changes in commodity prices from initially estimated, such as steel, conductor, hardware and insulators.

- **Line 0708 Rebuild: Eagle Lake to Waterville**

The forecasted capital cost increase for the Line 0708 Rebuild: Eagle Lake to Waterville project is due to coordination of the project with MISO Tranche 1 LRTP4 Wilmarth to North Rochester to Tremval project. Line 0708 is in consideration for the routing of LRTP 4, which has led to resequencing of engineering and siting/land rights activities.

- **Line 0714 Rebuild: Watonwan to Madelia**

The primary reason for an overall cost increase to the Line 0714 Rebuild: Watonwan to Madelia project is unexpected additional construction costs due to poor soil conditions along the route which required larger poles to accommodate the new design and the addition of OPGW shield wire.

- **Line 0723 Rebuild: Bird Island to Atwater**

The primary reason for an overall cost decrease to the Line 0723 Rebuild: Bird Island to Atwater project is due to construction coordination and excess materials being returned to inventory. There was excess material ordered for the project, and it was returned to the Company's stock, which lowered the total cost for the project. The Company was able to align with its other transmission line rebuilds in the area to complete the project concurrently with others on line 0723 and reduced expenditures accordingly.

- **Line 0726 Pipestone to Rock River to Woodstock Rebuild**

The primary reason for an overall cost increase to the Line 0726 Rebuild: Pipestone to Rock River- to Woodstock project is due to unexpectedly hard rock conditions which led to drastically extended drilling times for foundations. This, in turn, led to additional construction time spent on the project.

- **Line 0736 Rebuild: Arden Hills to Lawrence Creek**

The forecasted capital cost decrease for the Line 0736 Rebuild: Arden Hills to Lawrence Creek project is due to a re-prioritization of transmission projects. This project's construction schedule has been delayed in order to move other projects ahead. Construction is now forecasted to begin in May 2026 with phased in-service dates between 2026 and 2029.

- **Line 0749 Rebuild: Waseca to ITC Tap**

The forecasted capital cost decrease for the Line 0749 Rebuild: Waseca to ITC Tap project is due to a re-prioritization of transmission projects. This project's construction schedule has been delayed in order to move other projects ahead. Construction is now forecasted to begin in February 2025 with an in-service date of August 2025.

- **Line 0761 Rebuild: Lake City to Zumbrota**

The primary reason for an overall cost increase to the Line 0761 Rebuild: Lake City to Zumbrota project is due to unanticipated underground utilities installed in the right of way causing pole installation times to increase significantly.

- **Line 0782 Rebuild: Westgate to Gleason Lake**

The primary reason for an overall cost increase to the Line 0782 Rebuild: Westgate to Gleason Lake project is because the project went through re-scoping to increase conductor size. Other drivers of increased cost is the extensive siting and land rights and construction complexity of working in this tightly packed suburban area, which has added to scope and the timeline of construction. The project's in-service date has been delayed from February 2025 to December 2028, though engineering and design and material procurement will occur throughout 2025 and 2026.

- **Line 0790 Rebuild: Dassel to Cokato**

The primary reason for an overall cost increase to the Line 0790 Rebuild: Dassel to Cokato project is because wet spring weather conditions caused construction delays and work to be slower than anticipated and added approximately four weeks to construction. This delayed in-servicing from May 2022 to December 2022.

- **Line 0794 Rebuild: Black Oak to Douglas County**

The primary reason for an overall cost increase to the Line 0794 Rebuild: Black Oak to Douglas County project is due to material delivery delays which caused the project to schedule to be delayed increasing construction costs. This delayed in-servicing from April 2023 to August 2023.

- **Line 0795 Rebuild: Freeport to West St. Cloud - New 2023 Segments**

The forecasted capital cost increase for the Line 0795 Rebuild: Freeport to West St. Cloud - New 2023 Segments project is due to unanticipated delays of material delivery and securing outages for the transmission line due to coordination of work schedules.

- **Line 0859 Rebuild: Inver Hills to Chemolite**

The forecasted capital cost increase for the Line 0736 Rebuild: Inver Hills to Chemolite project is due to unanticipated scope changes to use bundled conductor and additional costs due to a major river crossing.

- **Line 5401 Rebuild: Maple Lake to Wakefield**

The primary reason for an overall cost decrease to the Line 5401 Rebuild: Maple Lake to Wakefield project is due to efficient construction coordination and excess materials. The Company was able to align the transmission line rebuild to complete the project concurrently with other transmission line projects in the area. There was also excess material, and returning it to into stock lowered the total cost for the project.

### **New Projects**

The Company seeks eligibility determination for the following projects:

1. **Line 732: Black Oak to Elrosa 69 kV Rebuild**

The Line 732 Black Oak to Elrosa 69 kV Rebuild project is a 9.5 mile major line rebuild of a 69 kV transmission line that spans between the Company's Black Oak Substation and Paynesville transmission substation. The project consists of rebuilding a 69 kV transmission line from the Company's Black Oak substation located west of Melrose, MN in Stearns County, MN south 9.5 miles to structure 235 on line 0732, which is approximately 5.0 miles east of the City of Elrosa, MN in Stearns County, MN. The 0732 transmission line was originally built in 1952 and has no record of being rebuilt. This line is important because it serves the region south of the Company's as well as other utilities transmission loads in the area.

See the Project Map (Attachment 18) for the estimated construction start date and estimated in-service date for each segment of this project.

2. **Line 982: Crandall to Lake Crystal 345 kV Rebuild**

The Line 982 Crandall to Lake Crystal 345kV Rebuild is a 31 mile rebuild that spans between the Company's Crandall substation and Wilmarth substation. The project consists of rebuilding a 345 kV transmission line from the Company's Crandall substation located northwest of Trimont, MN in Martin County, MN to where line 0982 begins 5.5 miles southwest of the City of Lake Crystal, MN in Blue Earth County, MN. The 0982 transmission line was originally built in 1955 and has no record of being rebuilt. See project map for estimated construction start date and estimated in-service date for the project. The 0982 transmission line is important because it serves the Company's as well as other utilities' transmission loads in the area and contributes to reducing congestion.

See the Project Map (Attachment 18) for the estimated construction start date and estimated in-service date for each segment of this project.

### **Midcontinent Independent System Operator's (MISO) Long Range Transmission Planning (LRTP) Tranche 1 Projects**

MISO's LRTP is a key initiative to improve system reliability. The focus of LRTP is to improve the ability to move electricity across the MISO region from where it is generated to where it is needed – reliably and at the lowest possible cost. The need for LRTP is urgent, given the resource changes already happening, the speed of portfolio change desired by many of MISO's members, and the length of time it takes a transmission project to go from concept to reality. Not only is there an increased urgency to identify future transmission solutions, but these solutions must also holistically address the needs of the MISO region. LRTP looks comprehensively at MISO's region and is very much a collaborative effort with stakeholders.

MISO has selected and approved a Tranche 1 portfolio that includes the MISO LRTP projects included in this Petition. We include them here and at this stage of the process because they are part of MISO's established planning cycle and considered eligible for regional cost sharing. The Company is already receiving revenue credits from MISO for these projects. A complete list of RECB calculations for these projects are shown in Attachment 15. The Company also believes it is important to synchronize costs and revenue credits now in order to mitigate rate volatility in the future due to deferred project costs. We discuss the details and the importance of each of the included MISO LRTP portfolio projects in more detail below.

#### **3. LRTP2 Alexandria to Big Oaks**

The MISO LRTP2 Alexandria to Big Oaks project consists of adding a second circuit to two 345 kV lines, associated substation upgrades, installing a new greenfield 345 kV segment, building a new 345 kV substation and re-terminating four existing 345 kV lines into the new substation. The first segment adds a 42-mile new circuit (Line Number 5656) on existing transmission line 0954 between Mississippi River Energy Services' (MRES) Alexandria Substation near the City of Alexandria, MN in Douglas County, MN and Great River Energy's (GRE) Riverview substation near Freeport, MN in Stearns County, MN. The second segment adds a 59-64 mile new circuit (Line Number 5657) on existing transmission lines 0954 and 0973 and 1-4 mile(s) new circuit on new structures between GRE's Riverview substation and the Company's new Big Oaks substation near Becker, MN in Sherburne County, MN. Line 0954 is a

345 kV transmission line and was constructed in 2014. Line 0973 is a 345 kV transmission line and was constructed in 2011. Both line 0954 and 0973 were constructed with the capacity to allow a second circuit to be installed at a future date.

Additionally, four existing 345 kV transmission lines, (0984/0985/0991/0992) will be re-terminated into the new Big Oaks Substation. The new Big Oaks Substation will be a seven-row 345 kV breaker and half configuration with 50mVar reactor and future capability to expand to eight 345 kV rows and four 115 kV rows.

This project would improve reliability, relieve congestion, improve system resilience and increase access to lower cost generation.

See the Project Map (Attachment 18) for the estimated construction start date and estimated in-service date for this project.

#### **4. LRTP4 Wilmarth to North Rochester to Tremval**

The MISO LRTP4 Wilmarth to North Rochester to Tremval project consists of installing two new 345 kV circuits, associated substation upgrades and relocating an existing 161 kV circuit. The first two segments build a new 75-80 mile 345 kV circuit (Line Number 5662) on rebuilt double circuit structures with existing 69 kV or 115 kV circuits and some greenfield single circuit structures depending on route selection between the Company's Wilmarth substation near the city of Mankato, MN in Blue Earth County, MN and the Company's North Rochester substation near the city of Pine Island, MN in Goodhue County, MN.

The third segment modifies the existing double circuit capable 345 kV line 0965 that runs between the Company's North Rochester substation and the Company's Briggs Road substation near the village of Holmen, WI in La Crosse County, WI in the following ways: 1) Increases voltage on the existing 161 kV line 5309 that is double circuited with line 0965 for 16 miles to make it 345/345 kV double circuit 0965/5663; 2) Adds 16 miles of new 345 kV circuit (Line number 5663) to the existing 0965 double circuit capable structures; and 3) Increases the voltage on the existing 161 kV Dairyland Power Cooperative (DPC) line that is double circuited with line 0965 for ten miles to the Mississippi River to make it 345/345 kV double circuit 0965/5663. Line 0965 is a 345 kV transmission line and was constructed in 2015 with the capacity to allow a second circuit to be installed at a future date. Line 5309 and DPC's 161 kV line were built 345 kV capable in the second circuit position of line 0965 to be utilized at 345 kV at a future date.



The fourth segment relocates the existing 161kV line 5309 between the Company's North Rochester Substation and Rochester Public Utilities' (RPU) Chester Substation near the city of Rochester, MN in Olmsted County, MN to a new alignment that could be greenfield, or rebuilt double circuit with existing 161 kV lines depending on route selection. Line 5309 is a 161 kV transmission line and was constructed in 2016. The Wilmarth substation footprint will be expanded to accommodate a new 345 kV breaker row. The North Rochester substation will build out two 345 kV breaker rows within the existing substation footprint.

This project would improve reliability, relieve congestion, improve system resilience and increase access to lower cost generation.

See the Project Map (Attachment 18) for the estimated construction start date and estimated in-service date for this project.

## **5. LRTP5 Tremval to Eau Claire to Jump River**

The MISO LRTP5 Tremval to Eau Claire to Jump River project consists of installing two new 345 kV circuits, building a new substation, expanding an existing substation, and either expanding another substation or building a second new substation. The first segment builds a new 41-49 mile 345 kV circuit (Line Number W3105) between either the Company's Eau Claire substation near the city of Eau Claire, WI in Eau Claire County, WI or the Company's new Elk Farm substation near the Town of Seymour, WI in Eau Claire County, WI and American Transmission Company's (ATC) new Jump River Substation that will either be located near the Town of Longwood, WI in Clark County, WI or near the Town of Ruby in Chippewa County, WI depending on route selection.

The new circuit will include single circuit greenfield and double and triple circuit rebuilds with existing 69 kV/115 kV/161 kV/345 kV lines depending on route selection. The second segment builds a new 39-45 mile 345 kV circuit (Line Number W3106) between either the Company's Eau Claire substation or new Elk Farm Substation and the Company's Tremval substation near the Town of Preston, WI in Trempealeau County, WI depending on route selection. The new circuit will include single and double circuit portions with potential rebuild of existing 115 kV/161 kV/345 kV circuits depending on route selection.

Substation scope is all route dependent. The Jump River substation would be a new 345 kV 4-position ring bus expandable to a 6-position breaker and a half configuration in the future. The Eau Claire substation would expand from a 345 kV 4-

position ring bus to an 8-position breaker and a half configuration. The Elk Farm substation would be a new 345 kV (6) position breaker and a half configuration expandable to ten positions with potential 161 kV yard in the future. The Tremval substation would be expanded to add a new 345 kV yard with a 6-position ring bus configuration expandable to a 10-position breaker and a half configuration and a potential 161 kV yard in the future. The Briggs Road substation would be expanded from a 3-position ring bus to four positions to reconfigure an existing line reactor to a bus position.

This project supports MISO's goals to maintain robust and reliable performance in future conditions with greater uncertainty and variability in supply, enable access to lower-cost energy production, provide cost-effective solutions allowing the future resource fleet to serve load across the footprint and allow more flexibility in the fuel mix for customer choice.

See the Project Map (Attachment 18) for the estimated construction start date and estimated in-service date for this project.

## **6. LRTP6: Tremval to Rocky Run to Columbia**

The MISO LRTP6 Tremval to Rocky Run to Columbia project consists of installing a new 345 kV circuit. The larger project builds a new 80-mile 345 kV circuit (Line Number W3107) between the Company's Tremval substation near the Town of Preston, WI in Trempealeau County, WI and ATC's Arpin substation near the Village of Pepin, WI in Pepin County, WI. The new line will be partial greenfield single circuit and partial rebuilt double circuit with existing 69 kV lines. The Company will be responsible for constructing 39-43 miles of this segment, depending on route selection, from the Company's Tremval substation to a golden spike point at which location ATC will build the remainder of the segment to their Arpin substation.

This project supports MISO's goals to maintain robust and reliable performance in future conditions with greater uncertainty and variability in supply, enable access to lower-cost energy production, provide cost-effective solutions allowing the future resource fleet to serve load across the footprint and allow more flexibility in the fuel mix for customer choice.

See the Project Map (Attachment 18) for the estimated construction start date and estimated in-service date for this project.