Transmission Cost Recovery Rider
Descriptions of Projects Proposed to be
Eligible Under SDCL 49-34A-25.1

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL12-035 and re-affirmed for cost recovery most recently in Docket No. EL18-036:

- CapX2020 Brookings – Twins Cities 345 kV transmission line
- CapX2020 Fargo – Twin Cities 345 kV transmission line
- CapX2020 La Crosse-Local 345 kV transmission line
- CapX2020 La Crosse-MISO
- CapX2020 La Crosse-WI
- Glencoe – Waconia
- Sioux Falls Northern

The following projects were approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL13-006 and re-affirmed for cost recovery most recently in Docket No. EL18-036:

- Bluff Creek – Westgate transmission line
- Chaska Area transmission line
- Minn Valley transmission line
- Big Stone – Brookings 345 kV Line
- Lake Marion – Burnsville
- Maple Lake – Annandale

The following project was approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL15-030 and re-affirmed for cost recovery most recently in Docket No. EL18-036:

- Minot Load Serving Transmission Line

The following project was approved for recovery by the Commission in the Company's Transmission Cost Recovery Rider filing in Docket No. EL18-036 and re-affirmed for cost recovery most recently in Docket No. EL19-032:

- Huntley-Wilmarth 345 kV Transmission Line

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

- West St. Cloud – Black Oak
- La Crosse – Madison

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

- Avon – Albany Rebuild
- Belgrade – Paynesville Rebuild
- Canisota Junction – Salem Rebuild
- CEN LCO 69 KV Rebuild
- Long Lake – Baytown

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.

- **Avon – Albany**
  Segment of 0795 Line Freeport to West St. Cloud 69 kV Rebuild
  The Avon – Albany Rebuild project shows a $1.1 million (or 21%) reduction in capital costs since last year's filing. This is a result of the segmentation of the project scope to optimize construction resources. The Avon – Albany project is one segment of an approximately 25-mile rebuild of the Company's 0795 69kV Transmission line between Freeport, MN and St. Joseph, MN. The costs removed from the Avon – Albany project are now included in a new project being requested for recovery, Line 0795 Avon to Brockway Tap 69kV Rebuild discussed further below.

  About 5 years ago, the Company started to budget for rebuild projects differently. Instead of budgeting for a 25-mile long rebuild project as one project (using the Level 4 WBS account numbers to separate project segments) we started to budget for each segment separately at the Level 2 WBS number.

Our riders pull in projects at the Level 2 WBS account numbers, and so in the past, we would have described the full 25-mile long project when adding it to the TCR Rider. In subsequent years, we would have done work on various segments of a line, but the full project scope would have already been described, reviewed, and approved.

In last year's TCR docket, when we added the Avon – Albany project, we noted that the line was a 7-mile segment of a 25-mile long rebuild project. The individual segment met SD Statute requiring that a project length be at least 5 miles long for inclusion in a rider request. However, several of the remaining segments of the 25-mile long 0795 Line Freeport to West St. Cloud 69 kV Rebuild project do not individually meet the statutory requirement.

We believe that since the segments taken together are part of a larger, contiguous line rebuild project necessary for the same purpose, they should be recoverable through the TCR Rider as one project. To make the full project scope more clear, we have organized the attachments to group the project segments together, and we provide a description of each requested segment below. This year, we have added two additional segments of the 25-mile long 0795 Line Freeport to West St. Cloud 69 kV Rebuild project to our rider request:

- 0795 Rebuild Avon to Brockway Tap 69kV Segment (2.5 miles); and
- Line 0795 St. John's to Watab River 69kV Segment (4.3 miles).

There will be several additional segments added in future years:

- NSPM 0795 Brockway Tap – St. John's (3.2 miles);
- NSPM 0795 Riverview – Wobegon Trail (1.4 miles);
- NSPM 0795 St. Joseph – Westwood Tap (1.7 miles)
- NSPM 0795 Watab River – St. Joseph (0.7 miles);
- NSPM 0795 Westwood Tap – West St. Cloud (.8 miles);
- and NSPM 0795 Wobegon Trail – Albany (6.2 miles).

- **Belgrade – Paynesville**
  The Belgrade – Paynesville project is forecasting an increase in total project cost of approximately $1.5 million due to field conditions and timing. The increase was forecasted after construction and field crews assessed the project's field conditions and accessibility. It should be noted that with favorable weather and field conditions, the additional cost of this project could be

reduced in the future if the need for alternative access and matting is found to be unnecessary to execute the work.

- **Huntley – Wilmarth**
  The Company is currently forecasting an approximate reduction in total cost of $18.3 million for the Huntley – Wilmarth project. This reduction is primarily related to an overall reduction in Company overhead costs to the project. Forecasted estimates were originally based on 2017 estimates; however, the realized actual cost of these overhead rates during the construction of the project are significantly less than estimated. Additionally we reduced the budget for the remainder of the construction schedule as we experienced savings in contractor bids, route alignment adjustments during the permitting process that reduced costs, and efficient outage coordination. Finally, the reduction can also be attributed to overall construction savings in easement costs, actual materials cost, strategic competitive contractor bidding, and construction oversight.

- **La Crosse – Madison**
  The La Crosse – Madison project went into service in 2018, and now that the final costs have been recorded, we are closing the accounting records for the project. During the project closing process, we identified project costs that had been inadvertently and inaccurately classified as Construction Work in Progress (CWIP) expenses that were actually Removal Work in Progress (RWIP) expenses. We made an accounting adjustment to reclassify those costs in 2021. Because RWIP costs are excluded from our rider revenue requirements, this adjustment appears as a reduction of $9.5 million in capital expense on Attachment 3.

New Projects

The Company seeks eligibility determination for the following projects:

1. Bayfield Loop

Project Description and Context

The Bayfield Loop Project, which is also referred to as the Bayfield Second Circuit Transmission Project, is needed to improve system reliability by adding redundancy to the system through construction of a second 34.5 kV transmission line and two new

substations in the Bayfield Peninsula area of Wisconsin. The new transmission line will extend approximately 19 miles and will connect two new substations: the Fish Creek Substation, located approximately four miles west of Ashland, Wisconsin, and Pikes Creek Substation, located approximately two miles west of Bayfield, Wisconsin.[1] The project will increase electric reliability and reduce power outages across the Bayfield Peninsula by providing voltage support and a second source of power to the east side of the Bayfield Peninsula. The 34.5 kV transmission line is called the "second circuit" or "second source" because there is an existing 34.5 kV line extending to Bayfield. The Public Service Commission of Wisconsin granted a Certificate of Authority for the Bayfield Loop Project on February 7, 2020,[2] and we expect the project to be placed in-service in 2022. As noted in past TCR proceedings, new transmission facilities located in our NSPW service territory must be placed in-service before project costs can be included in the TCR Rider.

2. Helena to Scott County MISO Interconnections

Project Description and Context

The Helena to Scott County interconnection project is required by MISO to increase the capacity of the existing Xcel Energy 345kV Line 0982 from Scott County to Helena substations, approximately 16.4 miles. The capacity will be increased in order to transfer the power of four wind generators in the Southwest Minnesota wind through Line 0982. The project will involve a total rebuild of the line segment by using new poles and conductor. To reduce the potential for galloping in this area, the project is utilizing a Company-standard vertical bundle configuration with twisted pair "Ibis" 795 TACSR/VR2 conductors, which is a high temperature conductor from Southwire.

3. Line 0723 Bird Island to Lake Lillian 69kV Rebuild
Segment of Line 0723 Bird Island to Atwater 69kV Rebuild

Project Description and Context

The Line 0723 Bird Island to Lake Lillian 69kV Rebuild project is an approximately 23.5 mile segment of a 38.4 mile transmission line rebuild of the Company's Line 0723 between the Company's Bird Island Substation and Great River Energy's

[1] *Application of N. States Power Co.-Wisc. for a Certificate of Auth. to Construct the Bayfield Second Circuit Transmission Project, to be Located in Bayfield Cnty., Wisc.*, PSCW Docket No. 4220-CE-182, APPLICATION FOR A CERTIFICATE OF AUTHORITY (Mar. 8, 2019).

[2] *Application of N. States Power Co.-Wisc. for a Certificate of Auth. to Construct the Bayfield Second Circuit Transmission Project, to be Located in Bayfield Cnty., Wisc.*, PSCW Docket No. 4220-CE-182, FINAL DECISION (Feb. 7, 2020).

Atwater Tap in west Central Minnesota. This line is important because it serves the Company's as well as other utilities' distribution loads in the area.

This project was initially identified as part of the Company's systematic Major Line Rebuild program. The Company identified Line 0723 as being a poor performer due to its age and condition; a review of this line from January 1, 2015 through June 18, 2020 reported 54 outage events. The 1953 vintage line consists of direct-embedded cedar wood poles with signs of insulator deterioration, cross-arm physical decay, along with failure-prone conductor.

As described above, about 5 years ago, the Company started to budget for rebuild projects differently. Instead of budgeting for a 38.4 mile long rebuild project as one project (using the Level 4 WBS account numbers to separate project segments) we started to budget for each segment separately at the Level 2 WBS number. Our riders pull in projects at the Level 2 WBS account numbers, and so in the past, we would have described the full 48.4-mile long project when adding it to the TCR Rider. In subsequent years, we would have done work on various segments of a line, but the full project scope would have already been described, reviewed, and approved.

We believe that since the segments taken together are part of a larger, contiguous line rebuild project necessary for the same purpose, they should be recoverable through the TCR Rider as one project. To make the full project scope more clear, we have organized the attachments to group the project segments together. This year, we have added both of the two segments of the 38.4 mile Line 0723 Bird Island to Atwater 69kV Rebuild line to our rider request:

- 0723 Bird Island to Lake Lillian 69kV Rebuild (23.5); and
- 0723 Cosmos to Lake Lillian 69kV Rebuild (14.9 miles).

4. Line 0723 Cosmos to Lake Lillian 69kV Rebuild Segment of Line 0723 Bird Island to Atwater 69kV Rebuild

Project Description and Context

The Line 0723 Cosmos to Lake Lillian 69kV Rebuild project is an approximately 14.9 mile segment of a 38.4 mile transmission line rebuild of the Company's Line 0723 between the Company's Bird Island Substation and Great River Energy's Atwater Tap in west central Minnesota. This line is important because it serves the Company's as well as other utilities' distribution loads in the area.

This project was initially identified as part of the Company's systematic Major Line Rebuild program. The Company identified Line 0723 as being a poor performer due to its age and condition; a review of this line from January 1, 2015 through June 18, 2020 reported 54 outage events. The 1953 vintage line consists of direct-embedded cedar wood poles with signs of insulator deterioration, cross-arm physical decay, along with failure prone conductor.

About 5 years ago, the Company started to budget for rebuild projects differently. Instead of budgeting for a 38.4 mile long rebuild project as one project (using the Level 4 WBS account numbers to separate project segments) we started to budget for each segment separately at the Level 2 WBS number. Our riders pick up the Level 2 WBS account numbers, and so in the past, we would have described the full 48.4-mile long project when adding it to the TCR Rider. In subsequent years, we would have done work on various segments of a line, but the full project scope would have been described, reviewed, and approved.

We believe that since the segments taken together are part of a larger, contiguous line rebuild project necessary for the same purpose, they should be recoverable through the TCR Rider as one project. To make the full project scope more clear, we have organized the attachments to group the project segments together. This year, we have added both of the two segments of the 38.4 mile Line 0723 Bird Island to Atwater 69kV Rebuild line to our rider request:

- 0723 Bird Island to Lake Lillian 69kV Rebuild (23.5); and
- 0723 Cosmos to Lake Lillian 69kV Rebuild (14.9 miles).

5. Line 0761 Lake City to Zumbrota 69kV Rebuild

Project Description and Context

The 0761 Lake City to Zumbrota 69kV Rebuild project is a 19.8 rebuild of the Company's line between the Company's switch 207 at the tap to line 0739 and Zumbro Falls Substation in order to improve the reliability of the line. This line's cross-arms as well as the two vertical cap and pin insulators located on the cross-arms have a history of failing.

This project was initially identified as part of the Company's systematic Major Line Rebuild program. The Company identified Line 0761 as being a poor performer due to its age and condition. The 1960 vintage line consists of direct-embedded cedar

wood poles with signs of insulator deterioration, cross-arm physical decay, along with failure prone conductor.

6. Line 0790 Dassel to Cokato 69kV Rebuild
Segment of Line 0790 Big Swan to Delano 69 kV Rebuild

Project Description and Context

The Line 0790 Dassel to Cokato 69kV Rebuild is an approximately 8 mile segment of a 48.4 mile transmission line rebuild of the Company's Line 0790 between Great River Energy's Big Swan Substation and the Company's Delano Substation in west central Minnesota. This line is important because it serves the Company's as well as other utilities' distribution loads in the area.

This project was initially identified as part of the Company's systematic Major Line Rebuild program. The Company identified Line 0790 as being a poor performer due to its age and condition; most of this circuit does not have shield wire for lightening protection. The 1930 vintage line consists of direct-embedded cedar wood poles with signs of insulator deterioration, cross-arm physical decay, along with failure prone conductor.

About 5 years ago, the Company started to budget for rebuild projects differently. Instead of budgeting for a 48.4 mile long rebuild project as one project (using the Level 4 WBS account numbers to separate project segments) we started to budget for each segment separately at the Level 2 WBS number. Our riders pull in projects at the Level 2 WBS account numbers, and so in the past, we would have described the full 48.4-mile long project when adding it to the TCR Rider. In subsequent years, we would have done work on various segments of a line, but the full project scope would have been described, reviewed, and approved.

We believe that since the segments taken together are part of a larger, contiguous line rebuild project necessary for the same purpose, they should be recoverable through the TCR Rider as one project. To make the full project scope more clear, we have organized the attachments to group the project segments together. This year, we have added one segment of the Line 0790 Big Swan to Delano 69 kV Rebuild 48.4-mile long line to our rider request:

- Line 0790 Dassel to Cokato 69kV Rebuild.

There will be several additional segments added in future years:

- NSM0790 Cokato - Howard Lake Rebuild (6.2 miles);
- NSM0790 Howard Lake- Waverly Rebuild (7.7 miles);
- NSM0790 Montrose- Delano Rebuild (8.5 miles);
- NSM0790 Victor - 4N185 Rebuild (7 miles);
- NSM0790 Victor - Winsted Rebuild (7.5 miles); and
- NSM0790 Waverly-Montrose Rebuild (3.5 miles).

7. Line 0794 Black Oak to Douglas County 69kV Rebuild

Project Description and Context

The 0794 Black Oak to Douglas County 69kV Rebuild project is a 6.6 mile rebuild of the Company's line between the Company's Black Oak Substation, near Melrose, MN and Sauk Centre Substation in order to improve the reliability of the line.

This project was initially identified as part of the Company's systematic Major Line Rebuild program. The Company identified Line 0761 as being a poor performer due to its age and condition. Rebuilding this line will reduce the likelihood of forced outages and increase the capacity for future load growth. The 1951 vintage line consists of direct-embedded cedar wood poles with signs of significant pole deterioration, insulator deterioration, cross-arm physical decay.

8. Line 0795 Rebuild Avon to Brockway Tap 69kV Segment
Segment of 0795 Line Freeport to West St. Cloud 69 kV Rebuild

Project Description and Context

The 0795 Rebuild Avon to Brockway Tap 69kV Segment project is an approximately 2.5 mile segment of transmission line that involves rebuilding the Company's Line 0795, which is a 63-year old 69 kV transmission line originating at Great River Energy's West St. Cloud Substation in St. Joseph, Minnesota and running westerly approximately 25 miles to the Millwood Tap Switch in Freeport, Minnesota. This line is important because it serves the Company's as well as other utilities' distribution loads in the area.

This project was initially identified as part of the Company's systematic Major Line Rebuild program. The Company identified Line 0795 as being a poor performer due to its age and condition. The 1953 vintage line consists of direct-embedded cedar wood poles. Many of the poles are past their useful life and over the years, many have been replaced through the Storm and Emergency program due to their poor

condition. Continuing to replace singular structures is no longer an option due to the number of structures requiring replacement as well as the poor condition of the existing cross-arms and conductor. The cross-arms show evidence of physical decay and the conductor has failed in several locations.

About 5 years ago, the Company started to budget for rebuild projects differently. Instead of budgeting for a 25-mile long rebuild project as one project (using the Level 4 WBS account numbers to separate project segments) we started to budget for each segment separately at the Level 2 WBS number. Our riders pull in projects at the Level 2 WBS account numbers, and so in the past, we would have described the full 25-mile long project when adding it to the TCR Rider. In subsequent years, we would have done work on various segments of a line, but the full project scope would have been described, reviewed, and approved.

We believe that since the segments taken together are part of a larger, contiguous line rebuild project necessary for the same purpose, they should be recoverable through the TCR Rider as one project. To make the full project scope more clear, we have organized the attachments to group the project segments together. Last year, we included the following segment of the 25-mile 0795 Line Freeport to West St. Cloud 69 kV Rebuild project in our rider request:

- Avon - Albany

This year, we have added two additional segments:

- 0795 Rebuild Avon to Brockway Tap 69kV Segment (2.5 miles); and
- Line 0795 St. John's to Watab River 69kV Segment (4.3 miles).

There will be several additional segments added in future years:

- NSPM 0795 Brockway Tap – St. John's (3.2 miles);
- NSPM 0795 Riverview – Wobegon Trail (1.4 miles);
- NSPM 0795 St. Joseph – Westwood Tap (1.7 miles);
- NSPM 0795 Watab River – St. Joseph (0.7 miles);
- NSPM 0795 Westwood Tap – West St. Cloud (.8 miles); and
- and NSPM 0795 Wobegon Trail – Albany (6.2 miles).

9. Line 0795 St. John's to Watab River 69kV Segment
Segment of 0795 Line Freeport to West St. Cloud 69 kV Rebuild

Project Description and Context

The Line 0795 St. John's to Watab River 69kV Segment project is an approximately 4.3 mile segment of transmission line that involves rebuilding the Company's Line 0795, which is a 63-year old 69 kV transmission line that originates at Great River Energy's West St. Cloud Substation in St. Joseph, Minnesota and runs westerly approximately 25 miles to the Millwood Tap Switch in Freeport, Minnesota. This line is important because it serves the Company's as well as other utilities' distribution loads in the area.

This project was initially identified as part of the Company's systematic Major Line Rebuild program described above. Through the Company's Line Prioritization Matrix, the Company identified Line 0795 as being a poor performer due to its age and condition. The 1953 vintage line consists of direct embedded cedar wood poles. Many of the poles are past their useful life and over the years, many have been replaced through the Storm and Emergency program due to their poor condition. Continuing to replace singular structures is no longer an option due to the number of structures requiring replacement as well as the poor condition of the existing cross-arms and conductor. The cross-arms show evidence of physical decay and the conductor has failed in several locations.

About 5 years ago, the Company started to budget for rebuild projects differently. Instead of budgeting for a 25-mile long rebuild project as one project (using the Level 4 WBS account numbers to separate project segments) we started to budget for each segment separately at the Level 2 WBS number. Our riders pick up the Level 2 WBS account numbers, and so in the past, we would have described the full 25-mile long project when adding it to the TCR Rider. In subsequent years, we would have done work on various segments of a line, but the full project scope would have been described, reviewed, and approved.

We believe that since the segments taken together are part of a larger, contiguous line rebuild project necessary for the same purpose, they should be recoverable through the TCR Rider as one project. To make the full project scope more clear, we have organized the attachments to group the project segments together. Last year, we included the following segment of the 25-mile 0795 Line Freeport to West St. Cloud 69 kV Rebuild project in our rider request:

- Avon - Albany

This year, we have added two additional segments:

- 0795 Rebuild Avon to Brockway Tap 69kV Segment (2.5 miles); and

- Line 0795 St. John's to Watab River 69kV Segment (4.3 miles).

There will be several additional segments added in future years:

- NSPM 0795 Brockway Tap – St. John's (3.2 miles);
- NSPM 0795 Riverview – Wobegon Trail (1.4 miles);
- NSPM 0795 St. Joseph – Westwood Tap (1.7 miles)
- NSPM 0795 Watab River – St. Joseph (0.7 miles);
- NSPM 0795 Westwood Tap – West St. Cloud (.8 miles); and
- and NSPM 0795 Wobegon Trail – Albany (6.2 miles).

10. Line 5401 Maple Lake to Wakefield 69kV Rebuild

Project Description and Context

The 5401 Maple Lake to Wakefield 69kV Rebuild project is a 6.6 mile segmented rebuild of the Company's line between the Company's Kimball substation and Great River Energy's Watkins Substation in west central Minnesota in order to improve the reliability of the line. This line's cross-arms as well as the two vertical cap and pin insulators located on the cross-arms have a history of failing.

This project was initially identified as part of the Company's systematic Major Line Rebuild program. The Company identified this segment of Line 05401 as being a poor performer due to its age and condition. The 1929 vintage line consists of direct-embedded cedar wood poles with signs of insulator deterioration, cross-arm physical decay, along with failure prone conductor.