



2) Facility 27051 (GRE)

- a) Please update the table below, which is derived from MTEP21 Appendix A, with any proposed changes. When updating, please craft “Description” verbiage at approximately the same summary-level shown in the “Original” column of the table. There will be an opportunity to provide additional details below the table.

Facility ID	27051 – Original	27051 – Updated
Facility Type	LN	
From Sub	Cassie's Crossing (aka, Big Oaks)	
To Sub	Structure(s) at estimated GPS Coordinates: 45°27'37.5"N 93°53'32.5"W	
Max kV	345	
Min kV		
Emerg. Rating	3000 A	
Expected ISD	6/1/2030	
Description	Replace existing GRE single circuit 230kV transmission line with double circuit 345kV transmission line. Both lines will tie to Benton County.	
Miles Upgrade		
Miles New	12.5	
Estimated Cost 2022\$	\$48,800,000	
Estimated Cost Nominal\$	Not calculated in MTEP	

- b) **Scope:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the scope of work for this facility (as summarized above in the “Description,” “Miles Upgrade,” “Miles New,” or “Emerg. Rating” fields). For substation facilities, describe any scope changes along with the rationale; for existing substation modifications, include substation one-line drawings that depict the substation before the project and after the project with the proposed project modifications called out; for new substations, include substation one-line drawings that highlight the scope changes. For transmission line facilities, describe any scope changes along with the rationale; include a simplified transmission diagram that illustrates the scope changes.
- c) **Schedule:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive delays in the schedule for energization of this facility (as shown above in “Expected ISD” field) that would cause a delay in the expected ISD for the entire LRTP Project.
- d) **Cost:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the estimated cost for this facility (as shown above in the “Estimated Cost 2022\$” field). Please update both the 2022\$ and Nominal\$ fields if documenting a change to the estimated cost.
- e) Please provide additional details (cause, rationale, circumstances, etc.) about any other fields that you have updated in the table above.
- f) Please provide any other information about this facility that you would like MISO to consider for Variance Analysis.



3) Facility 27052 (GRE)

- a) Please update the table below, which is derived from MTEP21 Appendix A, with any proposed changes. When updating, please craft “Description” verbiage at approximately the same summary-level shown in the “Original” column of the table. There will be an opportunity to provide additional details below the table.

Facility ID	27052 – Original	27052 – Updated
Facility Type	LNup	
From Sub	Sherco	
To Sub	Structure(s) at estimated GPS Coordinates: 45°27'37.5"N 93°53'32.5"W	
Max kV	345	
Min kV		
Emerg. Rating	3000 A	
Expected ISD	6/1/2028	
Description	Replace the existing Benton County-Sherco line to accommodate a rating greater than 3000 Amps. Including south deadend structure for new conductor. This line will tie to Benton County.	
Miles Upgrade	7.3	
Miles New		
Estimated Cost 2022\$	\$25,000,000	
Estimated Cost Nominal\$	Not calculated in MTEP	

- b) **Scope:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the scope of work for this facility (as summarized above in the “Description,” “Miles Upgrade,” “Miles New,” or “Emerg. Rating” fields). For substation facilities, describe any scope changes along with the rationale; for existing substation modifications, include substation one-line drawings that depict the substation before the project and after the project with the proposed project modifications called out; for new substations, include substation one-line drawings that highlight the scope changes. For transmission line facilities, describe any scope changes along with the rationale; include a simplified transmission diagram that illustrates the scope changes.
- c) **Schedule:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive delays in the schedule for energization of this facility (as shown above in “Expected ISD” field) that would cause a delay in the expected ISD for the entire LRTP Project.
- d) **Cost:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the estimated cost for this facility (as shown above in the “Estimated Cost 2022\$” field). Please update both the 2022\$ and Nominal\$ fields if documenting a change to the estimated cost.
- e) Please provide additional details (cause, rationale, circumstances, etc.) about any other fields that you have updated in the table above.
- f) Please provide any other information about this facility that you would like MISO to consider for Variance Analysis.



4) Facility 27053 (GRE)

- a) Please update the table below, which is derived from MTEP21 Appendix A, with any proposed changes. When updating, please craft “Description” verbiage at approximately the same summary-level shown in the “Original” column of the table. There will be an opportunity to provide additional details below the table.

Facility ID	27053 – Original	27053 – Updated
Facility Type	LN	
From Sub	Structure(s) at estimated GPS Coordinates: 45°27'37.5"N 93°53'32.5"W	
To Sub	Benton County	
Max kV	345	
Min kV		
Emerg. Rating	3000 A	
Expected ISD	6/1/2030	
Description	Replace existing GRE single circuit 230kV transmission line with double circuit 345kV transmission line. One line will tie to Sherco and other to Cassie Crossing.	
Miles Upgrade		
Miles New	12.5	
Estimated Cost 2022\$	\$48,800,000	
Estimated Cost Nominal\$	Not calculated in MTEP	

- b) **Scope:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the scope of work for this facility (as summarized above in the “Description,” “Miles Upgrade,” “Miles New,” or “Emerg. Rating” fields). For substation facilities, describe any scope changes along with the rationale; for existing substation modifications, include substation one-line drawings that depict the substation before the project and after the project with the proposed project modifications called out; for new substations, include substation one-line drawings that highlight the scope changes. For transmission line facilities, describe any scope changes along with the rationale; include a simplified transmission diagram that illustrates the scope changes.
- c) **Schedule:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive delays in the schedule for energization of this facility (as shown above in “Expected ISD” field) that would cause a delay in the expected ISD for the entire LRTP Project.
- d) **Cost:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the estimated cost for this facility (as shown above in the “Estimated Cost 2022\$” field). Please update both the 2022\$ and Nominal\$ fields if documenting a change to the estimated cost.
- e) Please provide additional details (cause, rationale, circumstances, etc.) about any other fields that you have updated in the table above.
- f) Please provide any other information about this facility that you would like MISO to consider for Variance Analysis.



5) Facility 27054 (GRE)

- a) Please update the table below, which is derived from MTEP21 Appendix A, with any proposed changes. When updating, please craft “Description” verbiage at approximately the same summary-level shown in the “Original” column of the table. There will be an opportunity to provide additional details below the table.

Facility ID	27054 – Original	27054 – Updated
Facility Type	LNup	
From Sub	Structure(s) at estimated GPS Coordinates: 45°27'37.5"N 93°53'32.5"W	
To Sub	Benton County	
Max kV	345	
Min kV		
Emerg. Rating	3000 A	
Expected ISD	6/1/2028	
Description	Replace the existing Benton County-Sherco line to accommodate a rating greater than 3000 Amps. Including north deadend structure for new conductor. This line will tie to Cassie Crossing.	
Miles Upgrade	14.1	
Miles New		
Estimated Cost 2022\$	\$47,400,000	
Estimated Cost Nominal\$	Not calculated in MTEP	

- b) **Scope:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the scope of work for this facility (as summarized above in the “Description,” “Miles Upgrade,” “Miles New,” or “Emerg. Rating” fields). For substation facilities, describe any scope changes along with the rationale; for existing substation modifications, include substation one-line drawings that depict the substation before the project and after the project with the proposed project modifications called out; for new substations, include substation one-line drawings that highlight the scope changes. For transmission line facilities, describe any scope changes along with the rationale; include a simplified transmission diagram that illustrates the scope changes.
- c) **Schedule:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive delays in the schedule for energization of this facility (as shown above in “Expected ISD” field) that would cause a delay in the expected ISD for the entire LRTP Project.
- d) **Cost:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the estimated cost for this facility (as shown above in the “Estimated Cost 2022\$” field). Please update both the 2022\$ and Nominal\$ fields if documenting a change to the estimated cost.
- e) Please provide additional details (cause, rationale, circumstances, etc.) about any other fields that you have updated in the table above.
- f) Please provide any other information about this facility that you would like MISO to consider for Variance Analysis.



6) Facility 27055 (GRE)

- a) Please update the table below, which is derived from MTEP21 Appendix A, with any proposed changes. When updating, please craft “Description” verbiage at approximately the same summary-level shown in the “Original” column of the table. There will be an opportunity to provide additional details below the table.

Facility ID	27055 – Original	27055 – Updated
Facility Type	SUB	
From Sub	Benton County	
To Sub		
Max kV	345	
Min kV		
Emerg. Rating	3000 A	
Expected ISD	6/1/2030	
Description	Add 345kV 7-position breaker-and-a-half bus with 2 transformer positions and 5 line positions (one an existing modification), with two line connected 70MVAr shunt reactors on Iron Range lines, and modify 230kV position for one 230/345kV transformer	
Miles Upgrade		
Miles New		
Estimated Cost 2022\$	\$25,500,000	
Estimated Cost Nominal\$	Not calculated in MTEP	

- b) **Scope:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the scope of work for this facility (as summarized above in the “Description,” “Miles Upgrade,” “Miles New,” or “Emerg. Rating” fields). For substation facilities, describe any scope changes along with the rationale; for existing substation modifications, include substation one-line drawings that depict the substation before the project and after the project with the proposed project modifications called out; for new substations, include substation one-line drawings that highlight the scope changes. For transmission line facilities, describe any scope changes along with the rationale; include a simplified transmission diagram that illustrates the scope changes.
- c) **Schedule:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive delays in the schedule for energization of this facility (as shown above in “Expected ISD” field) that would cause a delay in the expected ISD for the entire LRTP Project.
- d) **Cost:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the estimated cost for this facility (as shown above in the “Estimated Cost 2022\$” field). Please update both the 2022\$ and Nominal\$ fields if documenting a change to the estimated cost.
- e) Please provide additional details (cause, rationale, circumstances, etc.) about any other fields that you have updated in the table above.
- f) Please provide any other information about this facility that you would like MISO to consider for Variance Analysis.



7) Facility 27056 (MP)

- a) Please update the table below, which is derived from MTEP21 Appendix A, with any proposed changes. When updating, please craft “Description” verbiage at approximately the same summary-level shown in the “Original” column of the table. There will be an opportunity to provide additional details below the table.

Facility ID	27056 – Original	27056 – Updated
Facility Type	LN	
From Sub	Benton County	
To Sub	Riverton 230/115kV	
Max kV	345	
Min kV		
Emerg. Rating	3000 A	
Expected ISD	6/1/2030	
Description	Construct new 345kV double circuit transmission line	
Miles Upgrade		
Miles New	78	
Estimated Cost 2022\$	\$312,000,000	
Estimated Cost Nominal\$	Not calculated in MTEP	

- b) **Scope:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the scope of work for this facility (as summarized above in the “Description,” “Miles Upgrade,” “Miles New,” or “Emerg. Rating” fields). For substation facilities, describe any scope changes along with the rationale; for existing substation modifications, include substation one-line drawings that depict the substation before the project and after the project with the proposed project modifications called out; for new substations, include substation one-line drawings that highlight the scope changes. For transmission line facilities, describe any scope changes along with the rationale; include a simplified transmission diagram that illustrates the scope changes.
- c) **Schedule:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive delays in the schedule for energization of this facility (as shown above in “Expected ISD” field) that would cause a delay in the expected ISD for the entire LRTP Project.
- d) **Cost:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the estimated cost for this facility (as shown above in the “Estimated Cost 2022\$” field). Please update both the 2022\$ and Nominal\$ fields if documenting a change to the estimated cost.
- e) Please provide additional details (cause, rationale, circumstances, etc.) about any other fields that you have updated in the table above.
- f) Please provide any other information about this facility that you would like MISO to consider for Variance Analysis.



8) Facility 27057 (MP)

- a) Please update the table below, which is derived from MTEP21 Appendix A, with any proposed changes. When updating, please craft “Description” verbiage at approximately the same summary-level shown in the “Original” column of the table. There will be an opportunity to provide additional details below the table.

Facility ID	27057 – Original	27057 – Updated
Facility Type	SC	
From Sub	Riverton 230/115kV	
To Sub		
Max kV	345	
Min kV		
Emerg. Rating	3000 A	
Expected ISD	6/1/2030	
Description	Add 4-345kV series capacitor bank groups (2 in series for each circuit) with protective bypass equipment. Impedance of series capacitor bank will be approximately 60% compensation of line	
Miles Upgrade		
Miles New		
Estimated Cost 2022\$	\$80,000,000	
Estimated Cost Nominal\$	Not calculated in MTEP	

- b) **Scope:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the scope of work for this facility (as summarized above in the “Description,” “Miles Upgrade,” “Miles New,” or “Emerg. Rating” fields). For substation facilities, describe any scope changes along with the rationale; for existing substation modifications, include substation one-line drawings that depict the substation before the project and after the project with the proposed project modifications called out; for new substations, include substation one-line drawings that highlight the scope changes. For transmission line facilities, describe any scope changes along with the rationale; include a simplified transmission diagram that illustrates the scope changes.
- c) **Schedule:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive delays in the schedule for energization of this facility (as shown above in “Expected ISD” field) that would cause a delay in the expected ISD for the entire LRTP Project.
- d) **Cost:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the estimated cost for this facility (as shown above in the “Estimated Cost 2022\$” field). Please update both the 2022\$ and Nominal\$ fields if documenting a change to the estimated cost.
- e) Please provide additional details (cause, rationale, circumstances, etc.) about any other fields that you have updated in the table above.
- f) Please provide any other information about this facility that you would like MISO to consider for Variance Analysis.



9) Facility 27058 (MP)

- a) Please update the table below, which is derived from MTEP21 Appendix A, with any proposed changes. When updating, please craft “Description” verbiage at approximately the same summary-level shown in the “Original” column of the table. There will be an opportunity to provide additional details below the table.

Facility ID	27058 – Original	27058 – Updated
Facility Type	LN	
From Sub	Riverton 230/115kV	
To Sub	Iron Range 500/230kV	
Max kV	345	
Min kV		
Emerg. Rating	3000 A	
Expected ISD	6/1/2030	
Description	Construct new 345kV double circuit transmission line	
Miles Upgrade		
Miles New	78	
Estimated Cost 2022\$	\$312,000,000	
Estimated Cost Nominal\$	Not calculated in MTEP	

- b) **Scope:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the scope of work for this facility (as summarized above in the “Description,” “Miles Upgrade,” “Miles New,” or “Emerg. Rating” fields). For substation facilities, describe any scope changes along with the rationale; for existing substation modifications, include substation one-line drawings that depict the substation before the project and after the project with the proposed project modifications called out; for new substations, include substation one-line drawings that highlight the scope changes. For transmission line facilities, describe any scope changes along with the rationale; include a simplified transmission diagram that illustrates the scope changes.
- c) **Schedule:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive delays in the schedule for energization of this facility (as shown above in “Expected ISD” field) that would cause a delay in the expected ISD for the entire LRTP Project.
- d) **Cost:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the estimated cost for this facility (as shown above in the “Estimated Cost 2022\$” field). Please update both the 2022\$ and Nominal\$ fields if documenting a change to the estimated cost.
- e) Please provide additional details (cause, rationale, circumstances, etc.) about any other fields that you have updated in the table above.
- f) Please provide any other information about this facility that you would like MISO to consider for Variance Analysis.



10) Facility 27059 (MP)

- a) Please update the table below, which is derived from MTEP21 Appendix A, with any proposed changes. When updating, please craft “Description” verbiage at approximately the same summary-level shown in the “Original” column of the table. There will be an opportunity to provide additional details below the table.

Facility ID	27059 – Original	27059 – Updated
Facility Type	SUB	
From Sub	Iron Range 500/230kV	
To Sub		
Max kV	345	
Min kV		
Emerg. Rating	3000 A	
Expected ISD	6/1/2030	
Description	Add 4-position 345kV ring bus (expandable to breaker-and-a-half bus) for 2-345/500kV transformer positions and 2 line positions (includes 2-345 kV shunt reactors on lines to Benton, est. 50 MVAR each)	
Miles Upgrade		
Miles New		
Estimated Cost 2022\$	\$20,000,000	
Estimated Cost Nominal\$	Not calculated in MTEP	

- b) **Scope:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the scope of work for this facility (as summarized above in the “Description,” “Miles Upgrade,” “Miles New,” or “Emerg. Rating” fields). For substation facilities, describe any scope changes along with the rationale; for existing substation modifications, include substation one-line drawings that depict the substation before the project and after the project with the proposed project modifications called out; for new substations, include substation one-line drawings that highlight the scope changes. For transmission line facilities, describe any scope changes along with the rationale; include a simplified transmission diagram that illustrates the scope changes.
- c) **Schedule:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive delays in the schedule for energization of this facility (as shown above in “Expected ISD” field) that would cause a delay in the expected ISD for the entire LRTP Project.
- d) **Cost:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the estimated cost for this facility (as shown above in the “Estimated Cost 2022\$” field). Please update both the 2022\$ and Nominal\$ fields if documenting a change to the estimated cost.
- e) Please provide additional details (cause, rationale, circumstances, etc.) about any other fields that you have updated in the table above.
- f) Please provide any other information about this facility that you would like MISO to consider for Variance Analysis.



11) Facility 27060 (MP)

- a) Please update the table below, which is derived from MTEP21 Appendix A, with any proposed changes. When updating, please craft “Description” verbiage at approximately the same summary-level shown in the “Original” column of the table. There will be an opportunity to provide additional details below the table.

Facility ID	27060 – Original	27060 – Updated
Facility Type	TX	
From Sub	Iron Range 500/230kV	
To Sub		
Max kV	500	
Min kV	345	
Emerg. Rating	1200 MVA	
Expected ISD	6/1/2030	
Description	Add 2-345/500kV 1200MVA transformers (with 1 single phase spare on-site)	
Miles Upgrade		
Miles New		
Estimated Cost 2022\$	\$36,400,000	
Estimated Cost Nominal\$	Not calculated in MTEP	

- b) **Scope:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the scope of work for this facility (as summarized above in the “Description,” “Miles Upgrade,” “Miles New,” or “Emerg. Rating” fields). For substation facilities, describe any scope changes along with the rationale; for existing substation modifications, include substation one-line drawings that depict the substation before the project and after the project with the proposed project modifications called out; for new substations, include substation one-line drawings that highlight the scope changes. For transmission line facilities, describe any scope changes along with the rationale; include a simplified transmission diagram that illustrates the scope changes.
- c) **Schedule:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive delays in the schedule for energization of this facility (as shown above in “Expected ISD” field) that would cause a delay in the expected ISD for the entire LRTP Project.
- d) **Cost:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the estimated cost for this facility (as shown above in the “Estimated Cost 2022\$” field). Please update both the 2022\$ and Nominal\$ fields if documenting a change to the estimated cost.
- e) Please provide additional details (cause, rationale, circumstances, etc.) about any other fields that you have updated in the table above.
- f) Please provide any other information about this facility that you would like MISO to consider for Variance Analysis.



12) Facility 27061 (MP)

- a) Please update the table below, which is derived from MTEP21 Appendix A, with any proposed changes. When updating, please craft “Description” verbiage at approximately the same summary-level shown in the “Original” column of the table. There will be an opportunity to provide additional details below the table.

Facility ID	27061 – Original	27061 – Updated
Facility Type	SUB	
From Sub	Iron Range 500/230kV	
To Sub		
Max kV	500	
Min kV		
Emerg. Rating	3000 A	
Expected ISD	6/1/2030	
Description	Add 5-position 500 kV ring bus (line to Dorsey, 500-230 TX, 500-345 TX, Cap Bank, 500-345 TX)	
Miles Upgrade		
Miles New		
Estimated Cost 2022\$	\$14,000,000	
Estimated Cost Nominal\$	Not calculated in MTEP	

- b) **Scope:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the scope of work for this facility (as summarized above in the “Description,” “Miles Upgrade,” “Miles New,” or “Emerg. Rating” fields). For substation facilities, describe any scope changes along with the rationale; for existing substation modifications, include substation one-line drawings that depict the substation before the project and after the project with the proposed project modifications called out; for new substations, include substation one-line drawings that highlight the scope changes. For transmission line facilities, describe any scope changes along with the rationale; include a simplified transmission diagram that illustrates the scope changes.
- c) **Schedule:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive delays in the schedule for energization of this facility (as shown above in “Expected ISD” field) that would cause a delay in the expected ISD for the entire LRTP Project.
- d) **Cost:** Please provide additional details (cause, rationale, circumstances, etc.) about any substantive changes in the estimated cost for this facility (as shown above in the “Estimated Cost 2022\$” field). Please update both the 2022\$ and Nominal\$ fields if documenting a change to the estimated cost.
- e) Please provide additional details (cause, rationale, circumstances, etc.) about any other fields that you have updated in the table above.
- f) Please provide any other information about this facility that you would like MISO to consider for Variance Analysis.