

Subregional RTEP Committee – Western FirstEnergy Supplemental Projects

October 18, 2024

Needs

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

Need Number: ATSI-2024-072
Process Stage: Need Meeting – 10/18/2024

Supplemental Project Driver(s):
Equipment Material Condition, Performance and Risk

Specific Assumption Reference(s)

System Performance Global Factors

- System reliability/performance

Line Condition Rebuild / Replacement

- Aged or deteriorated transmission line structures
- Negatively impact customer outage frequency and/or durations
- Demonstrate an increasing trend in maintenance findings and/or costs

Problem Statement:

The Black River – Shinrock 69 kV Line is approaching end of life. It is approximately 23 miles long with 474 wood pole transmission line structures.

Per recent inspections, the line is exhibiting deterioration.

- 87% of wood pole structures were installed in 1974.
- 13% of wood pole structures were installed in 1956.
- 44% of structures have shell rot.

Since 2019, there has been four sustained unscheduled outages on the line.

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Need Number:

ATSI-2024-072

Process Stage:

Need Meeting – 10/18/2024

ATSI Transmission Zone M-3 Process Black River – Shinrock 69 kV Line

Need #	Transmission Line / Substation Locations	Existing Line Rating MVA (SN / SE / WN / WE)	Existing Conductor Rating MVA (SN / SE / WN / WE)
ATSI-2024-072	Black River – Black River Tap 69 kV Line	100 / 121 / 113 / 143	100 / 121 / 113 / 143
	Black River Tap – Washington Tap 69 kV Line	100 / 121 / 113 / 143	100 / 121 / 113 / 143
	Elyria Waterworks Tap – Washington Tap 69 kV Line	80 / 96 / 90 / 114	80 / 96 / 90 / 114
	Baumhart – Elyria Waterworks Tap 69 kV Line	80 / 96 / 90 / 114	80 / 96 / 90 / 114
	Axtel – Baumhart 69 kV Line	80 / 96 / 90 / 114	80 / 96 / 90 / 114
	Axtel – Shinrock 69 kV Line	80 / 96 / 90 / 114	80 / 96 / 90 / 114
	Black River Tap – Willow Creek Tap 69 kV Line	82 / 103 / 108 / 124	100 / 121 / 113 / 143
	Washington Tap – Washington 69 kV Line	45 / 54 / 51 / 65	45 / 54 / 51 / 65

Need Number: ATSI-2024-073
Process Stage: Need Meeting – 10/18/2024

Supplemental Project Driver(s):
Equipment Material Condition, Performance and Risk

Specific Assumption Reference(s)

System Performance Global Factors

- System reliability/performance
- Line Condition Rebuild / Replacement
- Aged or deteriorated transmission line structures
 - Negatively impact customer outage frequency and/or durations
 - Demonstrate an increasing trend in maintenance findings and/or costs

Problem Statement:

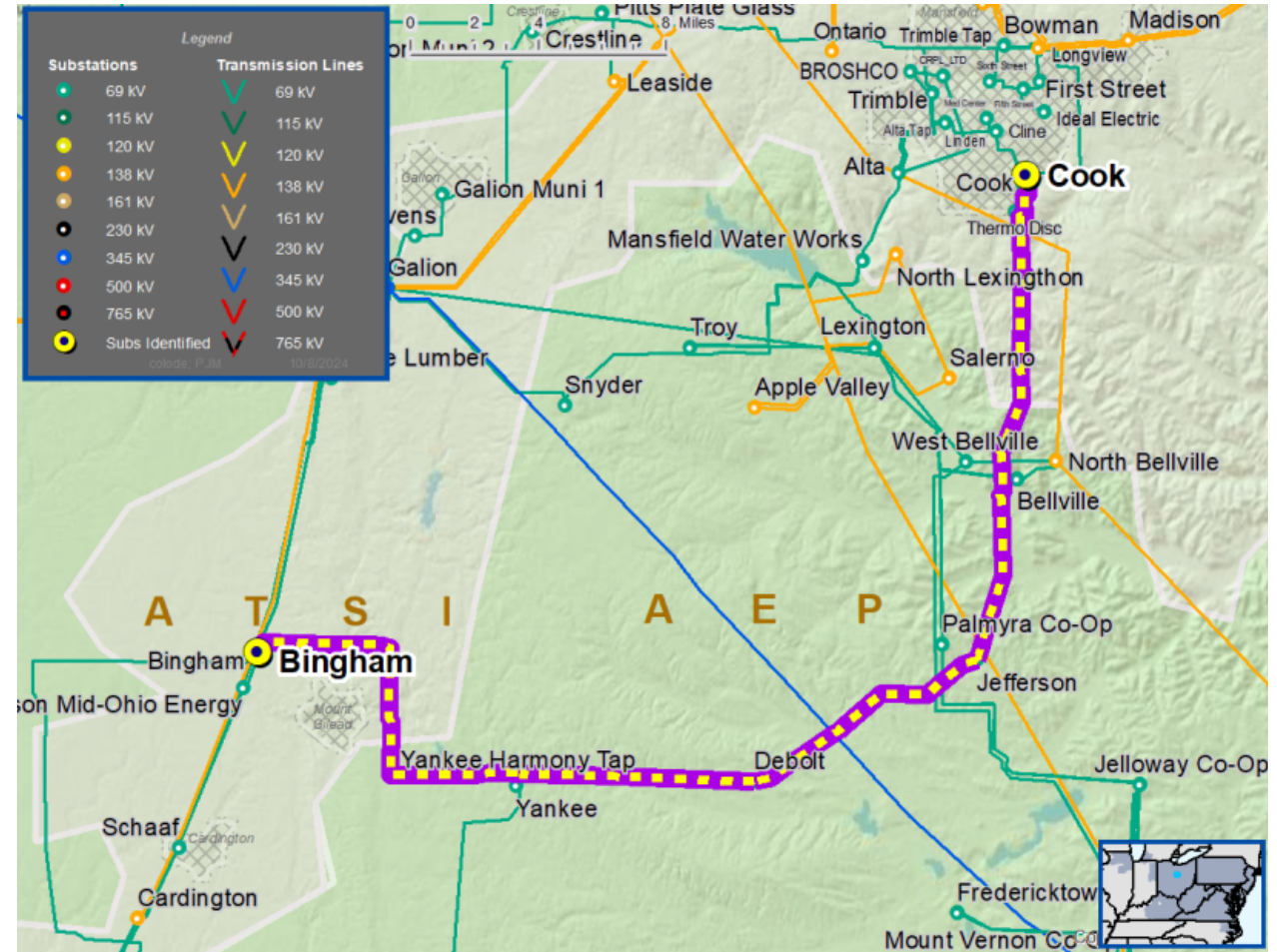
The Bingham – Cook 69 kV Line is approaching end of life. It is approximately 41 miles long with 589 wood pole transmission line structures.

Per recent inspections, the line is exhibiting deterioration.

- 97% of wood pole structures were installed in 1960.
- 43% of wood pole structures have shell rot.
- 45% of wood pole structures have decay, cracking or woodpecker holes.

Since 2019, there has been four sustained unscheduled outages on the line.

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ATSI Transmission Zone M-3 Process Bingham – Cook 69 kV Line

Need Number: ATSI-2024-073
Process Stage: Need Meeting – 10/18/2024

Need #	Transmission Line / Substation Locations	Existing Line Rating MVA (SN / SE / WN / WE)	Existing Conductor Rating MVA (SN / SE / WN / WE)
ATSI-2024-073	Bingham – Cook 69 kV Line	45 / 54 / 51 / 65	45 / 54 / 51 / 65

Changes to the Existing Projects

s3359.1: Originally presented in 10/14/2022 and 10/18/2024 SRTEP Western meetings
Changes are marked in red

Supplemental Project Driver(s):

Equipment Material Condition, Performance and Risk

Specific Assumption Reference(s)

Line Condition Rebuild / Replacement

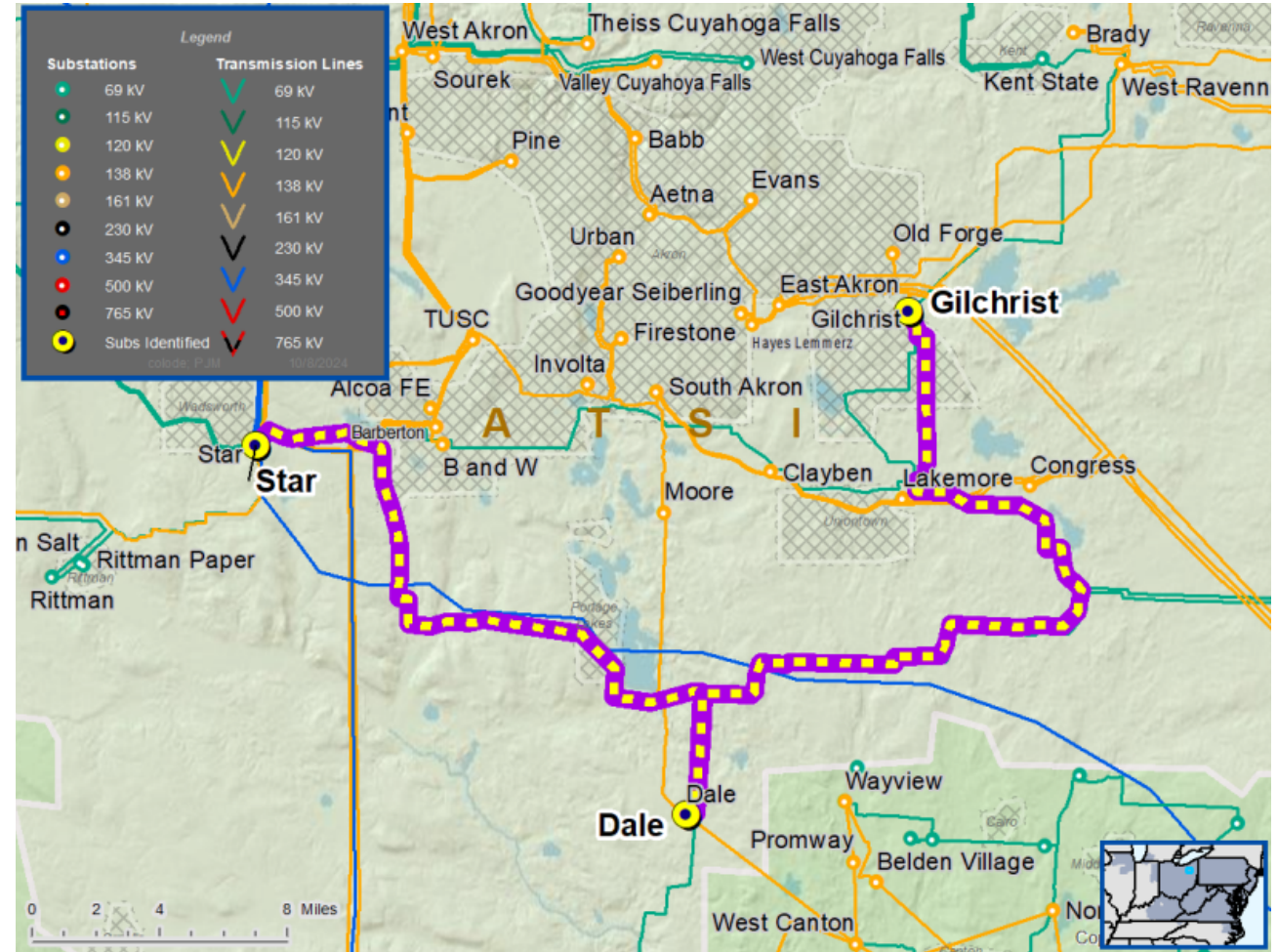
- Aged or deteriorated transmission line structures
- Negatively impact customer outage frequency and/or durations
- Demonstrate an increasing trend in maintenance findings and/or costs
- Transmission line ratings are limited by terminal equipment.

Problem Statement:

The Gilchrist – Star 69 kV Line is approximately 25 miles in length.

The Dale – Star 69 kV Line shares structures with the Gilchrist – Star 69 kV Line for approximately 3.3 miles.

- Line survey in 2020 showed a structure reject rate of 89% (413 of 461). The primary reasons for reject were wood pole deterioration, woodpecker holes, ground system damage, and decay damage.
- Since 2017, there has been a total of eight (8) momentary and six (6) sustained unscheduled outages on the line.
- Transmission line switches are obsolete and limiting the transmission line rating.





Need Number: ATSI-2022-028 (s3359.1)
Process Stage: Re-Present Solution Meeting – 10/18/2024

Proposed Solution:

Gilchrist – Star 69 kV Line

- Rebuild the Gilchrist – Star 69 kV Line with new conductor.
- Replace A-42, A-87, A-86, A-38 switches with new switches equipped with SCADA Control & Motor Operation.

Dale – Star 69 kV Line

- Rebuild the 3.3 mile Dale – Star 69 kV Line section that is double circuited with the Gilchrist-Star 69 kV Line with new conductor. This includes the Star – Martin 69 kV Line and part of the Martin – Marathon Tap 69 kV Line section.

Gilchrist

- ~~Replace 69 kV breaker B23~~

Transmission Line Ratings:

Gilchrist – McKnights 69 kV Line

- Before Proposed Solution: 80 / 96 / 90 / 114 MVA (SN/SE/WN/WE)
- After Proposed Solution: 111 / 134 / 125 / 159 MVA (SN/SE/WN/WE)

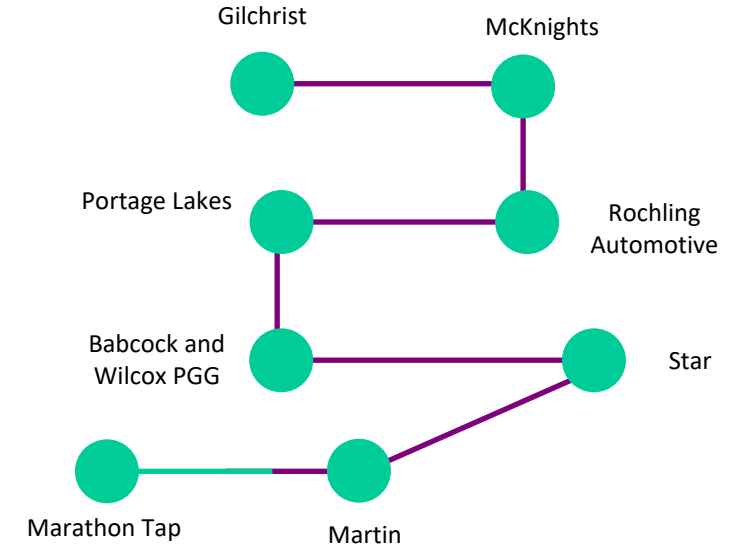
McKnights – Rochling Automotive 69 kV Line

- Before Proposed Solution: 80 / 96 / 90 / 114 MVA (SN/SE/WN/WE)
- After Proposed Solution: 111 / 134 / 125 / 159 MVA (SN/SE/WN/WE)

Rochling Automotive – Portage Lakes 69 kV Line

- Before Proposed Solution: 74 / 76 / 83 / 83 MVA (SN/SE/WN/WE)
- After Proposed Solution: 111 / 134 / 125 / 159 MVA (SN/SE/WN/WE)

ATSI Transmission Zone M-3 Process Gilchrist – Star 69 kV Line



Legend	
500 kV	
345 kV	
138 kV	
69 kV	
34.5 kV	
23 kV	
New	



Need Number: ATSI-2022-028 (s3359.1)
Process Stage: Re-Present Solution Meeting – 10/18/2024

Transmission Line Ratings:

Portage Lakes – Babcock and Wilcox PGG 69 kV Line

- Before Proposed Solution: 74 / 76 / 83 / 83 MVA (SN/SE/WN/WE)
- After Proposed Solution: 111 / 134 / 125 / 159 MVA (SN/SE/WN/WE)

Babcock and Wilcox PGG – Star 69 kV Line

- Before Proposed Solution: 74 / 76 / 83 / 83 MVA (SN/SE/WN/WE)
- After Proposed Solution: 111 / 134 / 125 / 159 MVA (SN/SE/WN/WE)

Martin – Star 69 kV Line

- Before Proposed Solution: 71 / 91 / 87 / 111 MVA (SN/SE/WN/WE)
- After Proposed Solution: 71 / 91 / 87 / 111 MVA (SN/SE/WN/WE)

Martin – Marathon Tap 69 kV Line

- Before Proposed Solution: 45 / 54 / 51 / 65 MVA (SN/SE/WN/WE)
- After Proposed Solution: 45 / 54 / 51 / 65 MVA (SN/SE/WN/WE)

Alternatives Considered:

- Maintain existing condition and elevated risk of failure.

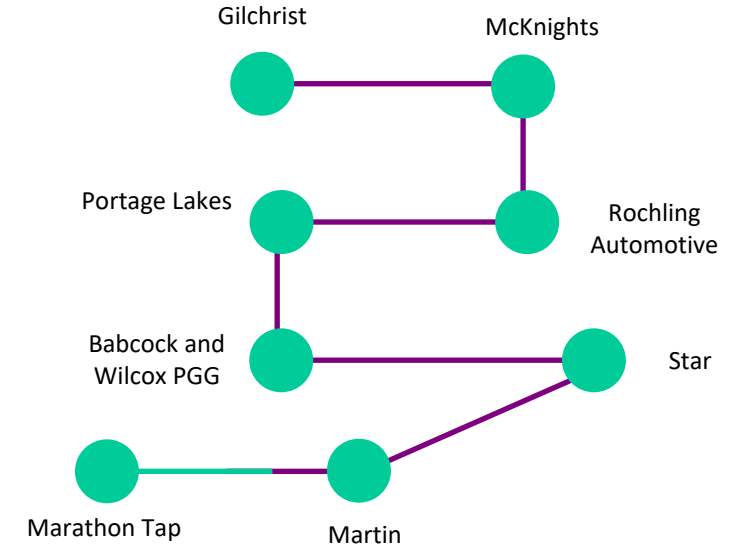
Estimated Project Cost: ~~\$97.7 M~~-\$71.7 M

Projected In-Service: 12/1/2027

Status: Conceptual

Model: 2023 RTEP model for 2028 Summer (50/50)

ATSI Transmission Zone M-3 Process Gilchrist – Star 69 kV Line



Legend	
500 kV	
345 kV	
138 kV	
69 kV	
34.5 kV	
23 kV	
New	

Appendix

High Level M-3 Meeting Schedule

Assumptions	Activity	Timing
	Posting of TO Assumptions Meeting information	20 days before Assumptions Meeting
	Stakeholder comments	10 days after Assumptions Meeting
Needs	Activity	Timing
	TOs and Stakeholders Post Needs Meeting slides	10 days before Needs Meeting
	Stakeholder comments	10 days after Needs Meeting
Solutions	Activity	Timing
	TOs and Stakeholders Post Solutions Meeting slides	10 days before Solutions Meeting
	Stakeholder comments	10 days after Solutions Meeting
Submission of Supplemental Projects & Local Plan	Activity	Timing
	Do No Harm (DNH) analysis for selected solution	Prior to posting selected solution
	Post selected solution(s)	Following completion of DNH analysis
	Stakeholder comments	10 days prior to Local Plan Submission for integration into RTEP
	Local Plan submitted to PJM for integration into RTEP	Following review and consideration of comments received after posting of selected solutions

Revision History

10/08/2024– V1 – Original version posted to pjm.com