

Submission of Supplemental Projects for Inclusion in the Local Plan

Need Number(s): JCPL-2019-010, 012, 019

Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan 9/27/2023

Previously Presented: Need presented: 04/11/2019

Solution presented: 05/09/2023

Project Driver(s):

*Equipment Material Condition, Performance and Risk
Operational Flexibility and Efficiency*

Specific Assumption Reference(s)

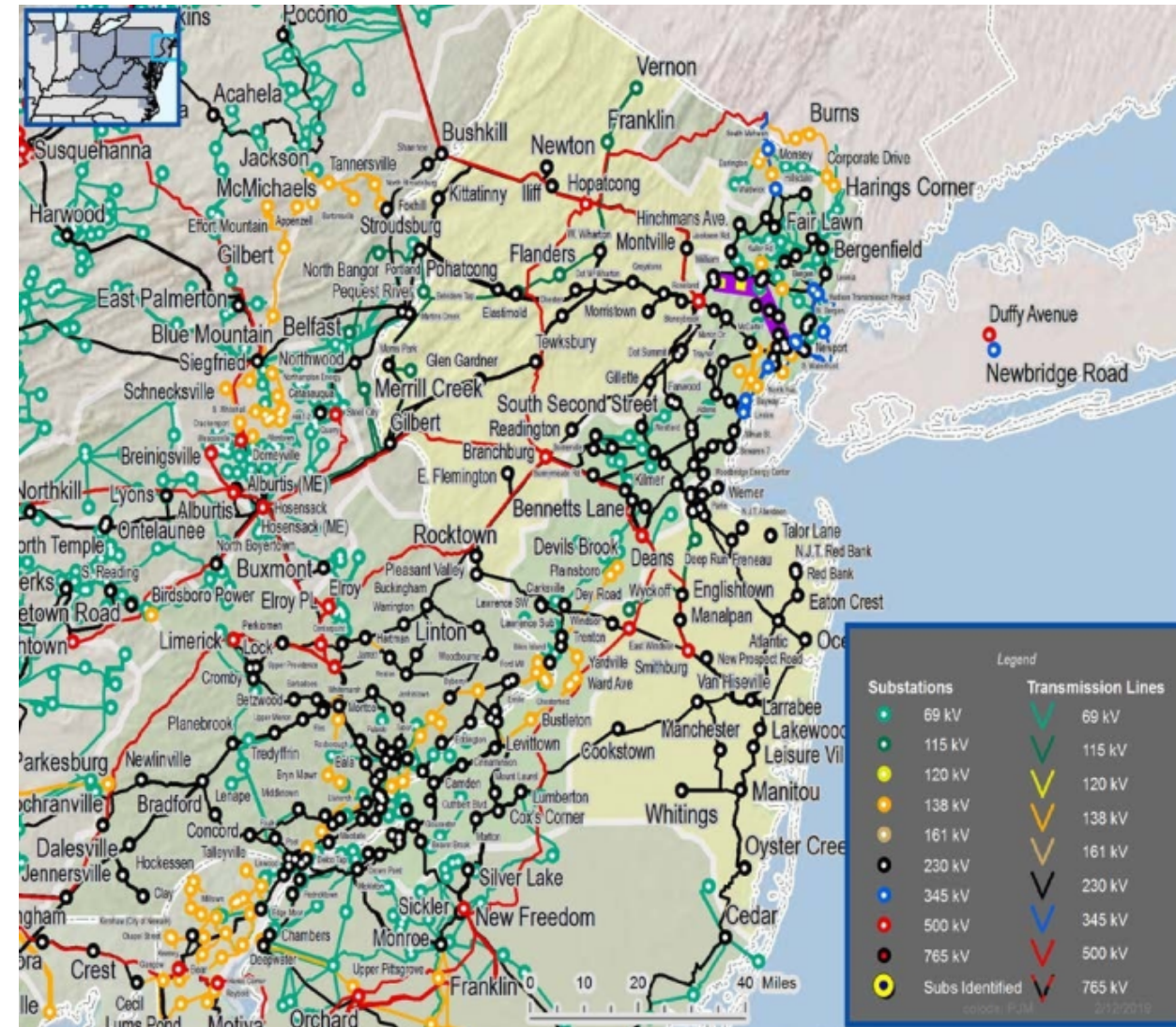
System Performance Projects Global Factors

- System reliability and performance
- Substation/line equipment limits

Upgrade Relay Schemes

- Relay schemes that have a history of misoperation
- Obsolete and difficult to repair communication equipment (DTT, Blocking, etc.)
- Communication technology upgrades
- Bus protection schemes

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Problem Statement

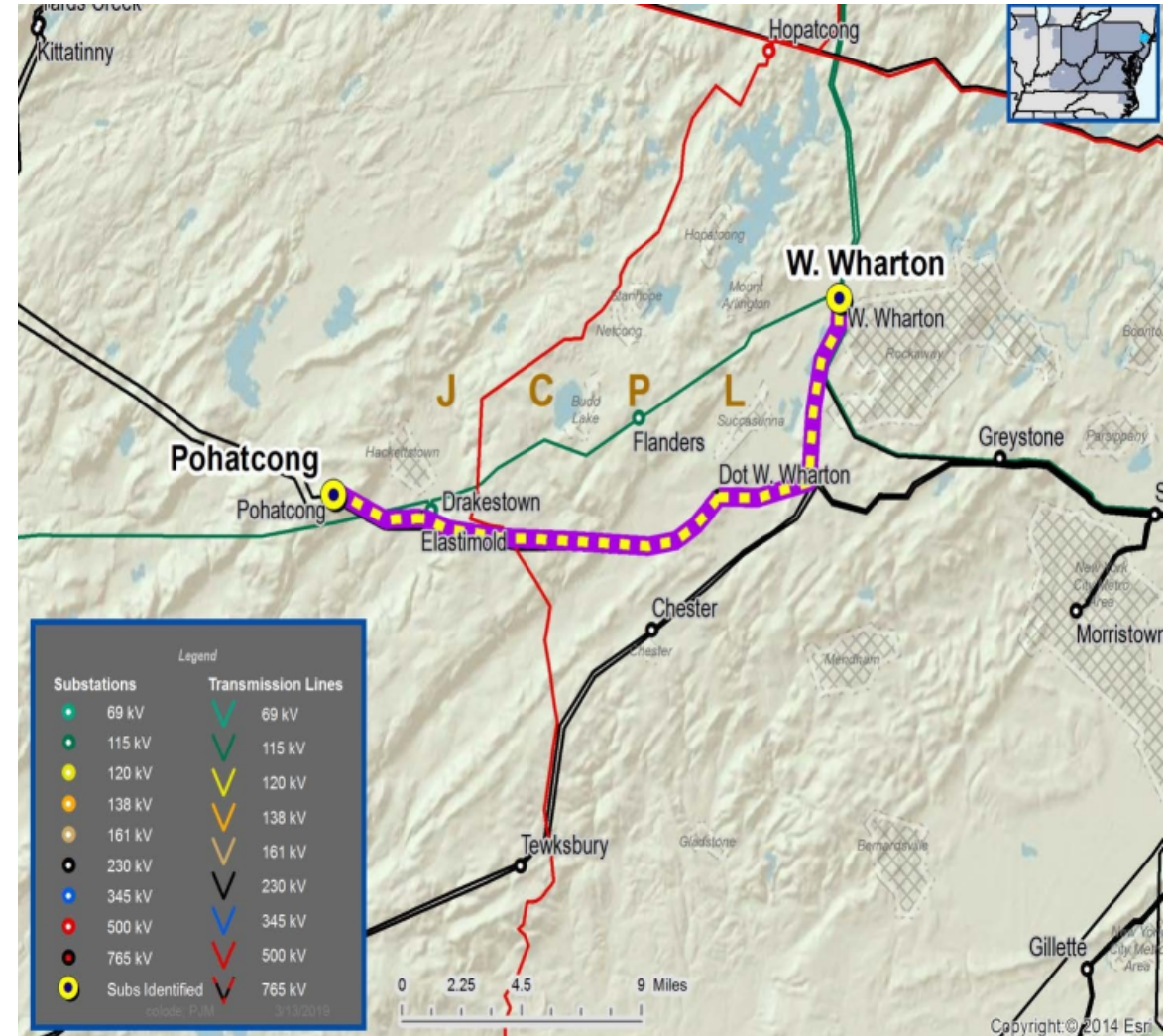
- FirstEnergy has identified protection schemes using a certain vintage of relays and communication equipment that have a history of misoperation.
- Proper operation of the protection scheme requires all the separate components perform adequately during a fault.
- In many cases the protection equipment cannot be repaired due to a lack of replacement parts and available expertise in the outdated technology.
- Transmission line ratings are limited by terminal equipment.

JCPL-2019-	Transmission Line / Substation Locations	Existing Line Rating (SN / SE)	Existing Conductor Rating (SN / SE)	Limiting Terminal Equipment
010	Pohatcong – West Wharton 230 kV Line	678 / 813	709 / 869	Line Relaying, Circuit Breaker, Line Trap, Substation Conductor
012	Greystone – West Wharton 230 kV Line	678 / 813	709 / 869	Substation Conductor, Current Transformer
019	Chester – Glen Gardner 230 kV Line	650 / 817	709 / 869	Substation Conductor

Need Number: JCPL-2019-010

Problem Statement

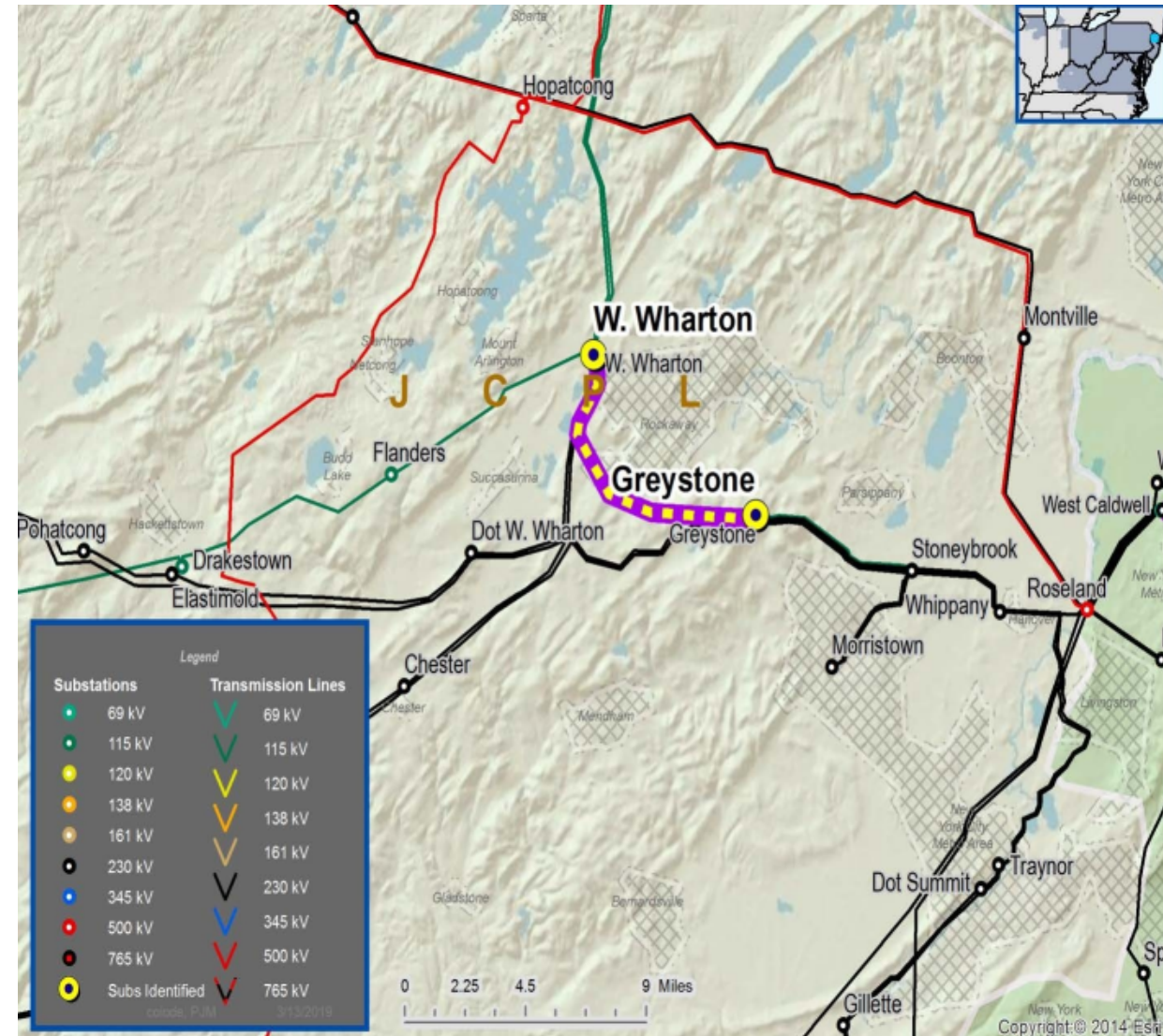
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Need Number: JCPL-2019-012

Problem Statement

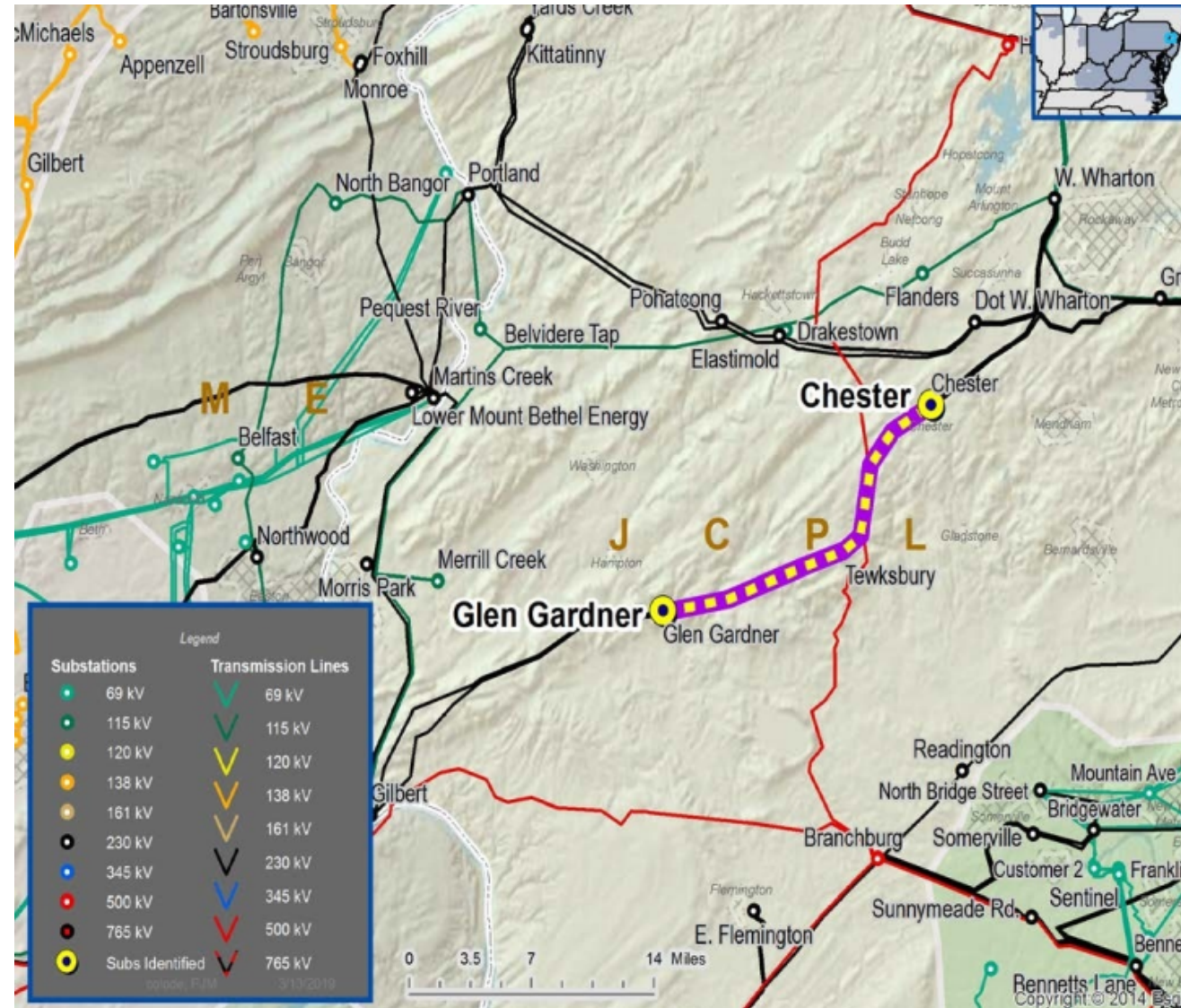
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Need Number: JCPL-2019-019

Problem Statement

- FirstEnergy has identified protection schemes using a certain vintage of relays and communication equipment that have a history of misoperation.
- Proper operation of the protection scheme requires all the separate components perform adequately during a fault.
- In many cases the protection equipment cannot be repaired due to a lack of replacement parts and available expertise in the outdated technology.
- Transmission line ratings are limited by terminal equipment.



Selected Solutions:

Need Number	Transmission Line / Substation Locations	New MVA Line Rating (SN / SE)	Supplemental Project ID	Scope of Work	Estimated Cost (\$ M)	Target ISD
JCPL-2019-010	Pohatcong – West Wharton 230 kV Line	709 / 869	s2952	<ul style="list-style-type: none"> At Pohatcong Mountain and West Wharton Substations, replace relaying, circuit breaker, wave trap, and substation conductor 	\$2.11 M	12/22/2023
JCPL-2019-012	Greystone – West Wharton 230 kV Line	709 / 869	s2953	<ul style="list-style-type: none"> At Greystone and West Wharton Substations, replace substation conductor and current transformer 	\$2.36 M	In-Service
JCPL-2019-019	Chester – Glen Gardner 230 kV Line	709 / 869	s2954	<ul style="list-style-type: none"> At Chester and Glen Gardner Substations, replace substation conductor 	\$1.86 M	In-Service

Need Number: JCPL-2019-016

Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan 9/27/2023

Previously Presented: Need Meeting: 03/25/2019

Solution Meeting: 05/18/2023

Project Driver(s):

*Equipment Material Condition, Performance and Risk
Operational Flexibility and Efficiency*

Specific Assumption Reference(s)

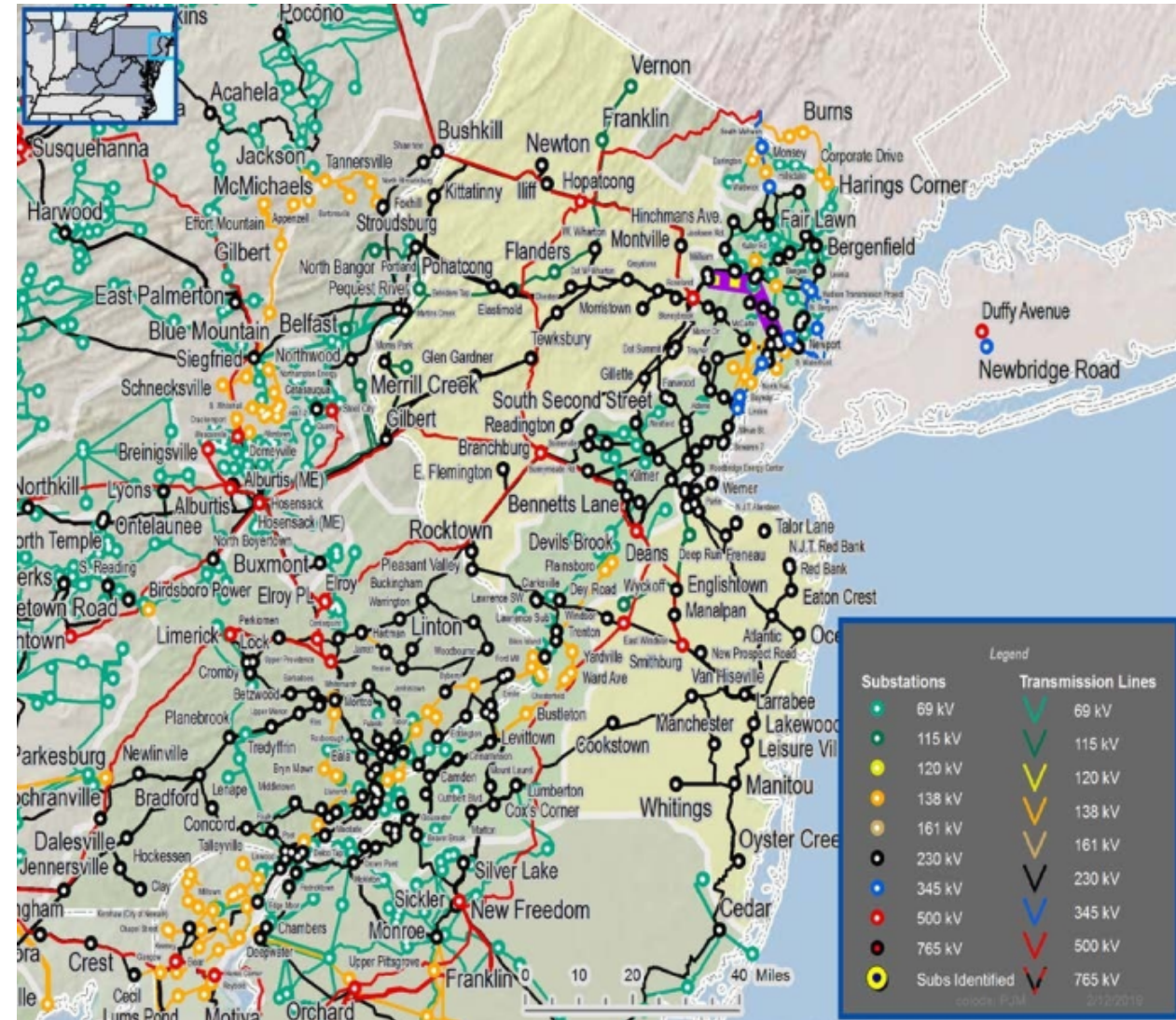
System Performance Projects Global Factors

- System reliability and performance
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Upgrade Relay Schemes

- Relay schemes that have a history of misoperation
- Obsolete and difficult to repair communication equipment (DTT, Blocking, etc.)
- Communication technology upgrades
- Bus protection schemes

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Problem Statement

- FirstEnergy has identified protection schemes using a certain vintage of relays and communication equipment that have a history of misoperation.
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JCPL-2019-	Transmission Line / Substation Locations	Existing MVA Line Rating (SN / SE)	Existing MVA Conductor Rating (SN / SE)	Limiting Terminal Equipment
016	Vernon – West Wharton 115 kV Line	141 / 148	147 / 176	Substation Conductor

Selected Solution:

Need Number	Transmission Line / Substation Locations	New MVA Line Rating (SN / SE)	Supplemental Project ID	Scope of Work	Estimated Cost (\$ M)	Target ISD
JCPL-2019-016	Vernon – West Wharton 115 kV Line	147 / 179	s2957	<ul style="list-style-type: none"> At Vernon and West Wharton Substations, replace substation conductor 	\$1.14 M	In-Service

Questions?



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

9/27/2023 – V1 – s2952,s2953,2954,and s2957 added to Local Plan