

First Energy (JCP&L) Local Plan Submission for the 2022 RTEP

Need Number: JCPL-2019-013, JCPL-2019-014, JCPL-2019-017, JCPL-2019-020

Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan 10/10/2022

Previously Presented:

Solution Meeting 11/30/2021

Need Meeting 4/11/2019

Project Driver:

Equipment Material Condition, Performance and Risk

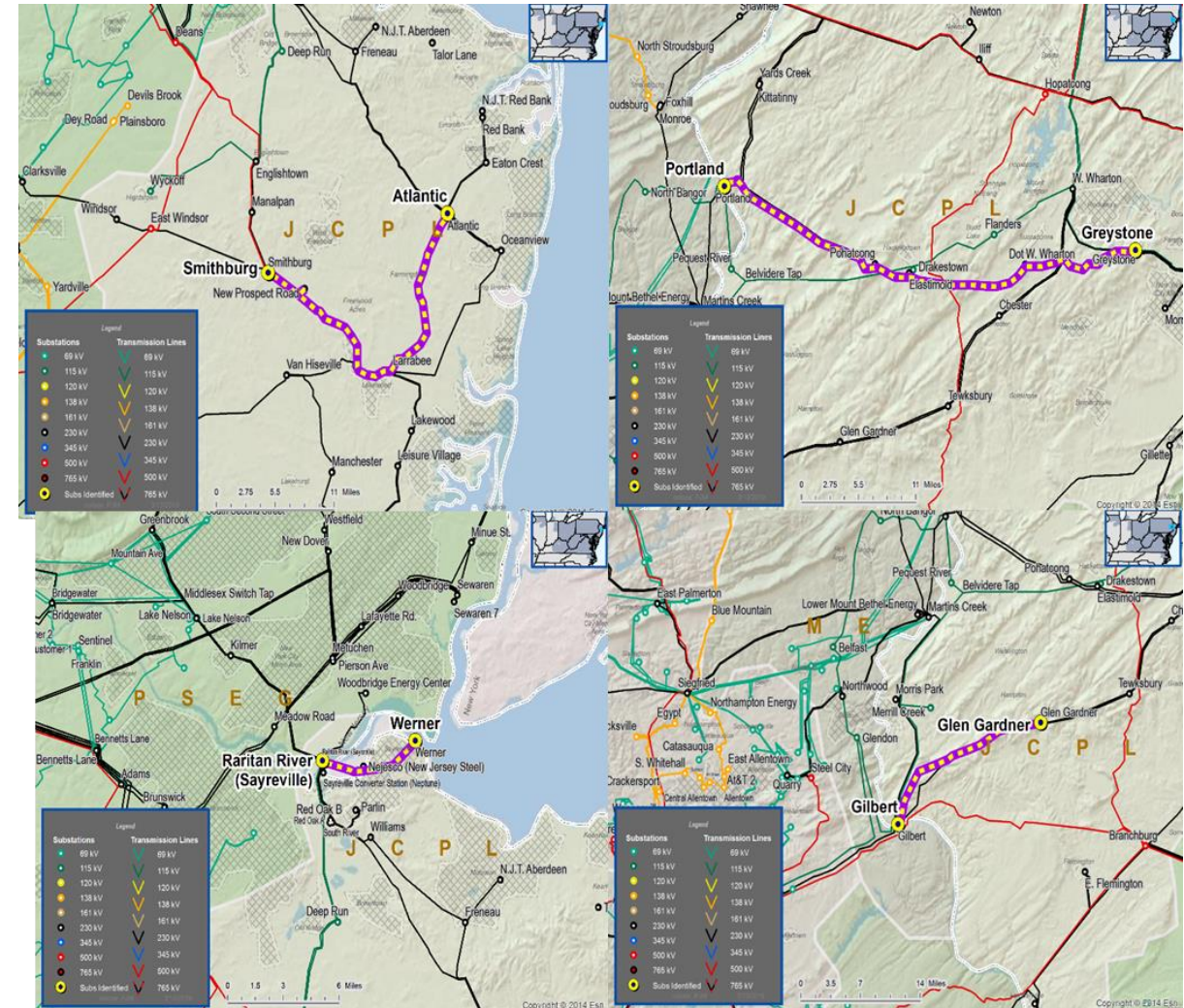
Operational Flexibility and Efficiency

Specific Assumption Reference:

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many cases the protection equipment cannot be repaired due to a lack of replacement part and available expertise in the outdated technology.
- Transmission line ratings are limited by terminal equipment.

Need Number	Transmission Line / Substation Locations	Existing Line Rating (SN / SE)	Existing Conductor Rating (SN / SE)	Limiting Terminal Equipment
JCPL-2019-020	Gilbert-Glen Gardner 230 kV Line	815 / 923	1136 / 1311	Wave Trap, Line Relaying, Current Transformer, Breaker and Terminal Switches, Line Metering
Need Number	Transmission Line / Substation Locations	Existing Line Rating (SN / SE)	Existing Conductor Rating (SN / SE)	Limiting Terminal Equipment
JCPL-2019-017	Atlantic-Smithburg 230 kV Line	678 / 813	709 / 869	Substation Conductor
Need Number	Transmission Line / Substation Locations	Existing Line Rating (SN / SE)	Existing Conductor Rating (SN / SE)	Limiting Terminal Equipment
JCPL-2019-014	Greystone-Portland 230 kV Line	830 / 1000	910 / 1077	Substation Conductor, Current Transformer
Need Number	Transmission Line / Substation Locations	Existing Line Rating (SN / SE)	Existing Conductor Rating (SN / SE)	Limiting Terminal Equipment
JCPL-2019-013	Raritan River-Werner 230 kV Line	652 / 739	709 / 869	Circuit Breaker, Substation Conductor, Line Relaying, Current Transformer

Selected Solution:

Need Number	Transmission Line / Substation Locations	Supplemental ID s2677	New MVA Line Rating (SN / SE)	Scope of Work	Estimated Cost (\$ M)	Target ISD
JCPL-2019-020	Gilbert-Glen Gardner 230 kV Line	s2677.1	1136 / 1311	<ul style="list-style-type: none"> Gilbert 230 kV Substation – Replace line relaying, disconnect switch, CT, line metering, circuit breakers, wave trap, and substation conductor 	\$1.9M	12/8/2021
Need Number	Transmission Line / Substation Locations	Supplemental ID s2678	New MVA Line Rating (SN / SE)	Scope of Work	Estimated Cost (\$ M)	Target ISD
JCPL-2019-017	Atlantic-Smithburg 230 kV Line	s2678.1	709 / 869	<ul style="list-style-type: none"> Atlantic 230 kV Substation – Replace line relaying, CT, and substation conductor New Prospect Road 230 kV Substation – Replace PLC, and substation conductor Smithburg 230 kV Substation – Replace line relaying and substation conductor 	\$3.5M	12/30/2021
		s2678.2				
		s2678.3				
Need Number	Transmission Line / Substation Locations	Supplemental ID s2679	New MVA Line Rating (SN / SE)	Scope of Work	Estimated Cost (\$ M)	Target ISD
JCPL-2019-014	Greystone-Portland 230 kV Line	s2679.1	910 / 1077	<ul style="list-style-type: none"> Greystone 230 kV Substation– Replace circuit breaker, disconnect switch and wave trap Portland 230 kV Substation– Replace circuit breaker, disconnect switch and wave trap 	\$1.4M	03/22/2022
		s2679.2				

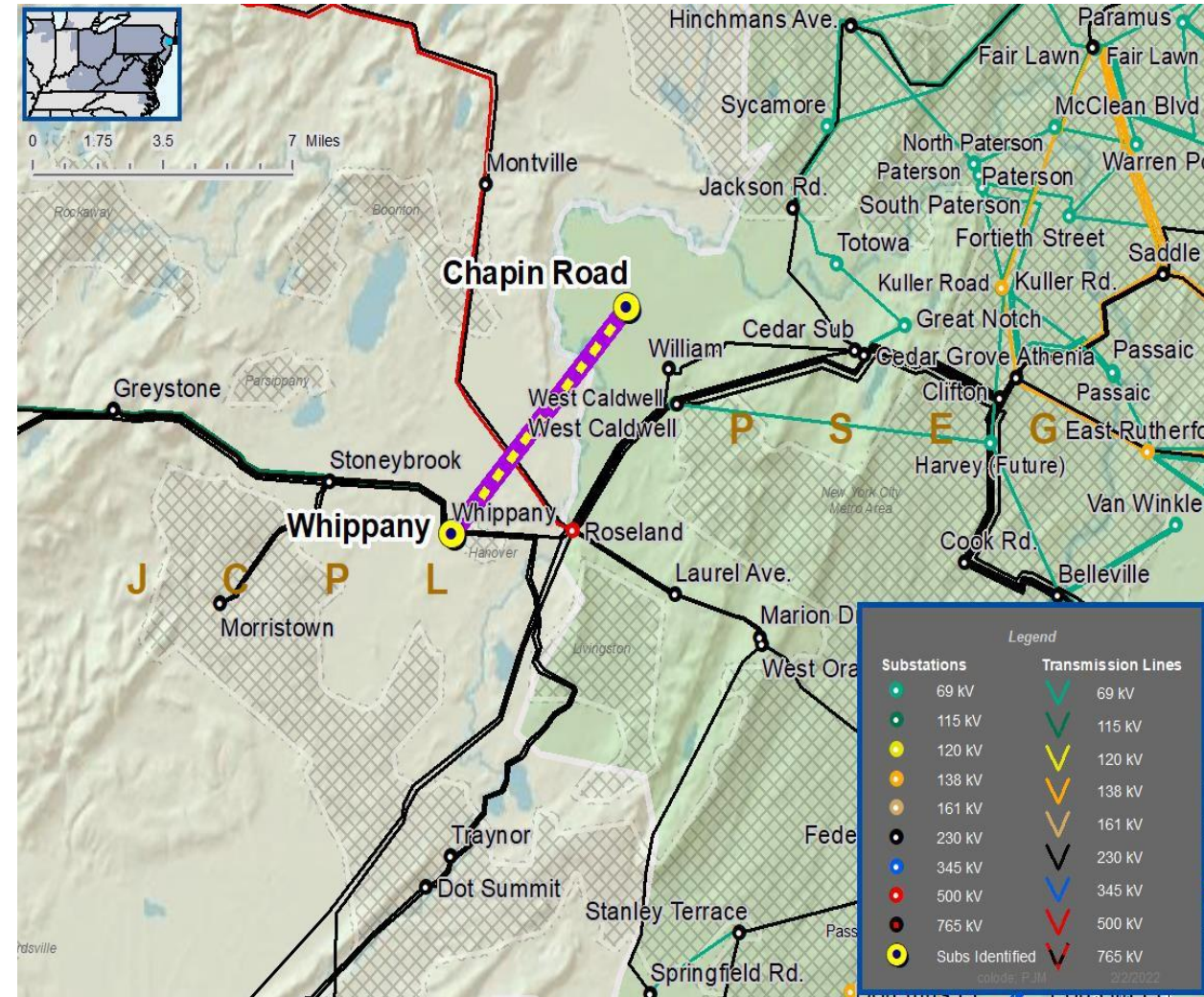
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Selected Solution:

Need Number	Transmission Line / Substation Locations	Supplemental ID s2680	New MVA Line Rating (SN / SE)	Scope of Work	Estimated Cost (\$ M)	Target ISD
JCPL-2019-013	Raritan River-Werner 230 kV Line	s2680.1	709 / 869	<ul style="list-style-type: none"> Raritan River 230 kV Substation – Replace line relaying, disconnect switch, wave trap, and substation conductor EH Werner 230 kV Substation – Replace line relaying, line metering, wave trap, and substation conductor 	\$1.9M	4/30/2022
		s2680.2				

Model: 2020 RTEP model for 2025 Summer (50/50)

- **Need Number:** JCPL-2022-002
- **Process Stage:** Submission of Supplemental Projects for Inclusion in the Local Plan 10/13/2022
- **Previously Presented:** Solution Meeting 4/19/2022
- Need Meeting 2/17/2022
- **Project Driver:**
- *Customer Service*
- **Specific Assumption Reference:**
- Customer request will be evaluated per FirstEnergy’s
- “Requirements for Transmission Connected Facilities” document and “Transmission Planning Criteria” document.
- **Problem Statement:**
- Existing Customer Connection: An existing 34.5 kV customer requested removal and demolition of their existing service. Location is on the Chapin Road - Whippany 34.5 kV Line. Line tap to the customer has been de-energized.
- Requested in-service date is April 2022.



Need Number: JCPL-2022-002

Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan 10/13/2022

Selected Solution:

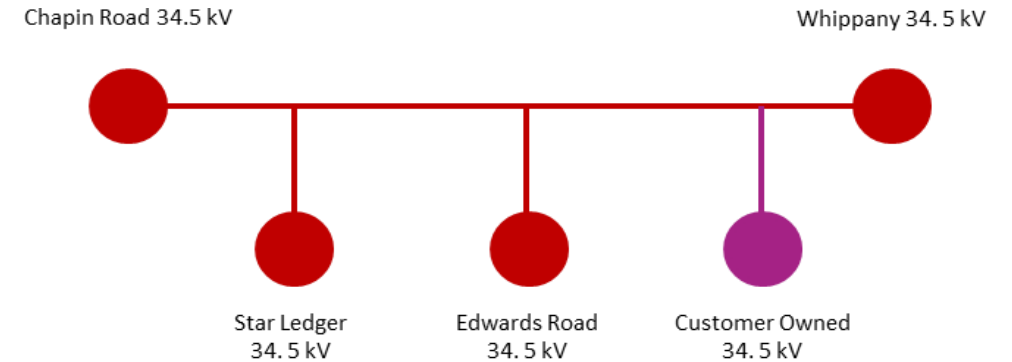
- Remove approximately 100 feet of 34.5 kV line to the customer facilities.
- Remove metering and associated facilities from the customer substation.

Estimated Project Cost: \$0.1M

Projected In-Service: 04/30/2022

Supplemental Project ID: s2728

Model: 2021 RTEP model for 2026 Summer (50/50)



Legend	
500 kV	
345 kV	
230 kV	
138 kV	
115 kV	
69 kV	
46 kV	
34.5 kV	
23 kV	
New	

Revision History

10/12/2022 – V1 – Original version posted to pjm.com. Included s2677, s2678, s2679 and s2680

10/113/2022 V2 – Added local plan for s2728