

Subregional RTEP Committee – Mid-Atlantic FirstEnergy Supplemental Projects

JCPL Transmission Zone

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: JCPL-2026-038

Process Stage: Need Meeting – SRRTEP-MA – 07/17/2026

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption References:

System Performance Global Factors

- System reliability/performance
- Substation/Line equipment limits

Substation Condition Rebuild/Replacement

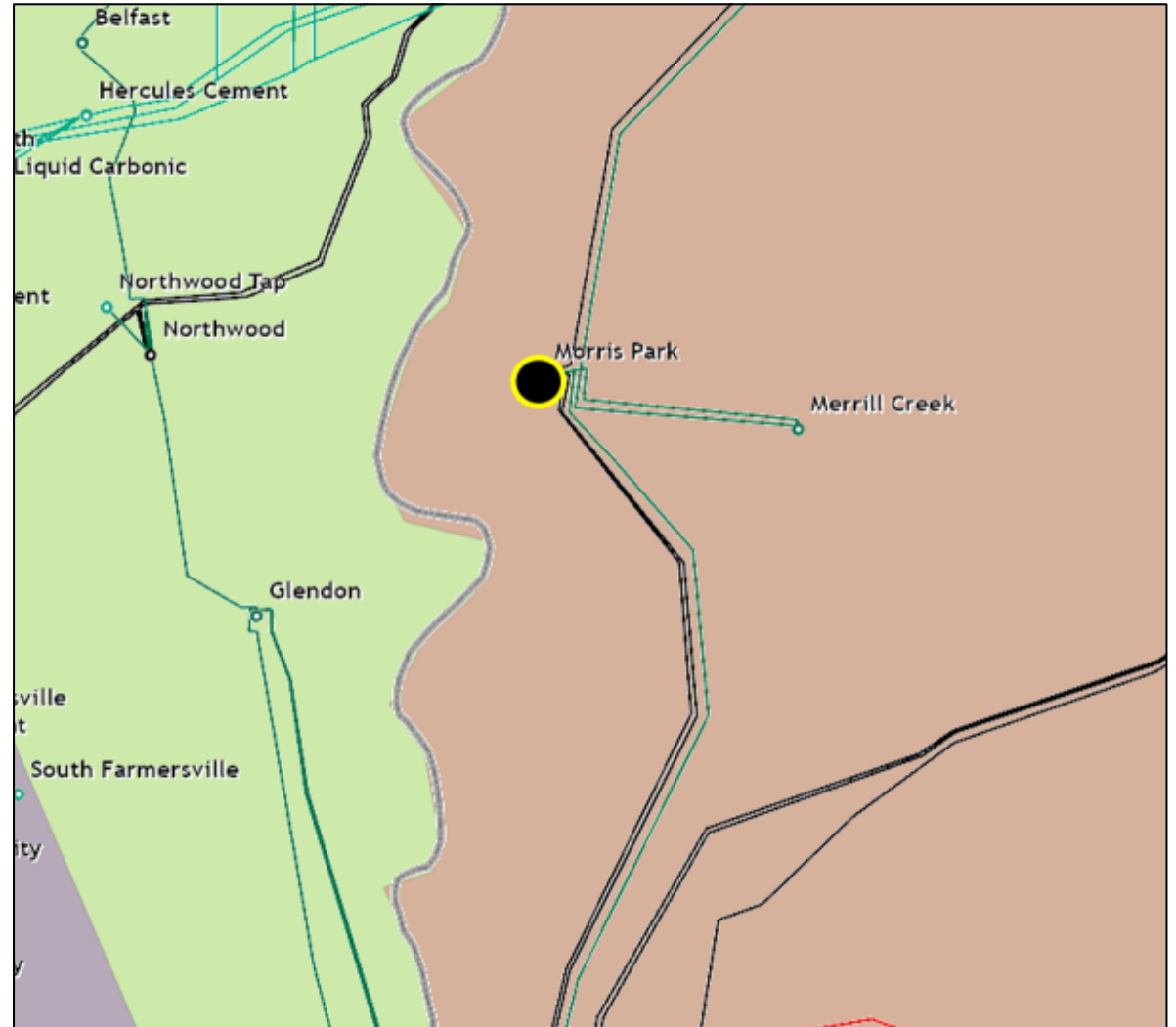
- Age/condition of substation equipment
- Circuit breaker and other fault interrupting devices

Problem Statement:

At Morris Park Substation the existing 34.5 kV breakers W23A, W23B, F6, S123, X24, T124, BK3B and BK3A are more than 56 years old and are approaching end of life.

Replacement components are difficult to source leading to non-standard repairs.

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Need Number: JCPL-2026-038

Problem Statement: *(Cont'd from previous slide)*

The lines are currently limited by terminal equipment.

Facility	Existing Overall Facility Ratings MVA (SN/SE/WN/WE)	Existing Line Conductor Ratings MVA (SN/SE/WN/WE)
Morris Park - Rand Blvd T 34.5 kV Z26 (T124) Line	37 / 38 / 42 / 42	
Warren Glen SWPT - Morris Park 34.5 kV X24 Line	37 / 38 / 42 / 42	
Philipsburg - Morris Park 34.5 kV S123 Line	40 / 50 / 50 / 57	45 / 54 / 50 / 63
Morris Park - Marble Hill 34.5 kV F6 Line	42 / 50 / 50 / 57	44 / 53 / 50 / 63
Morris Park - Captive Place Tap 34.5 kV W23 Line	44 / 53 / 50 / 63	

Solutions

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: JCPL-2024-011

Process Stage: Solution Meeting – SRRTEP-MA – 07/17/2026

Previously Presented: Need Meeting – SRRTEP-MA – 03/14/2024

Project Driver:

Equipment Condition/Performance/Risk

Operational Flexibility and Efficiency

Specific Assumption Reference:

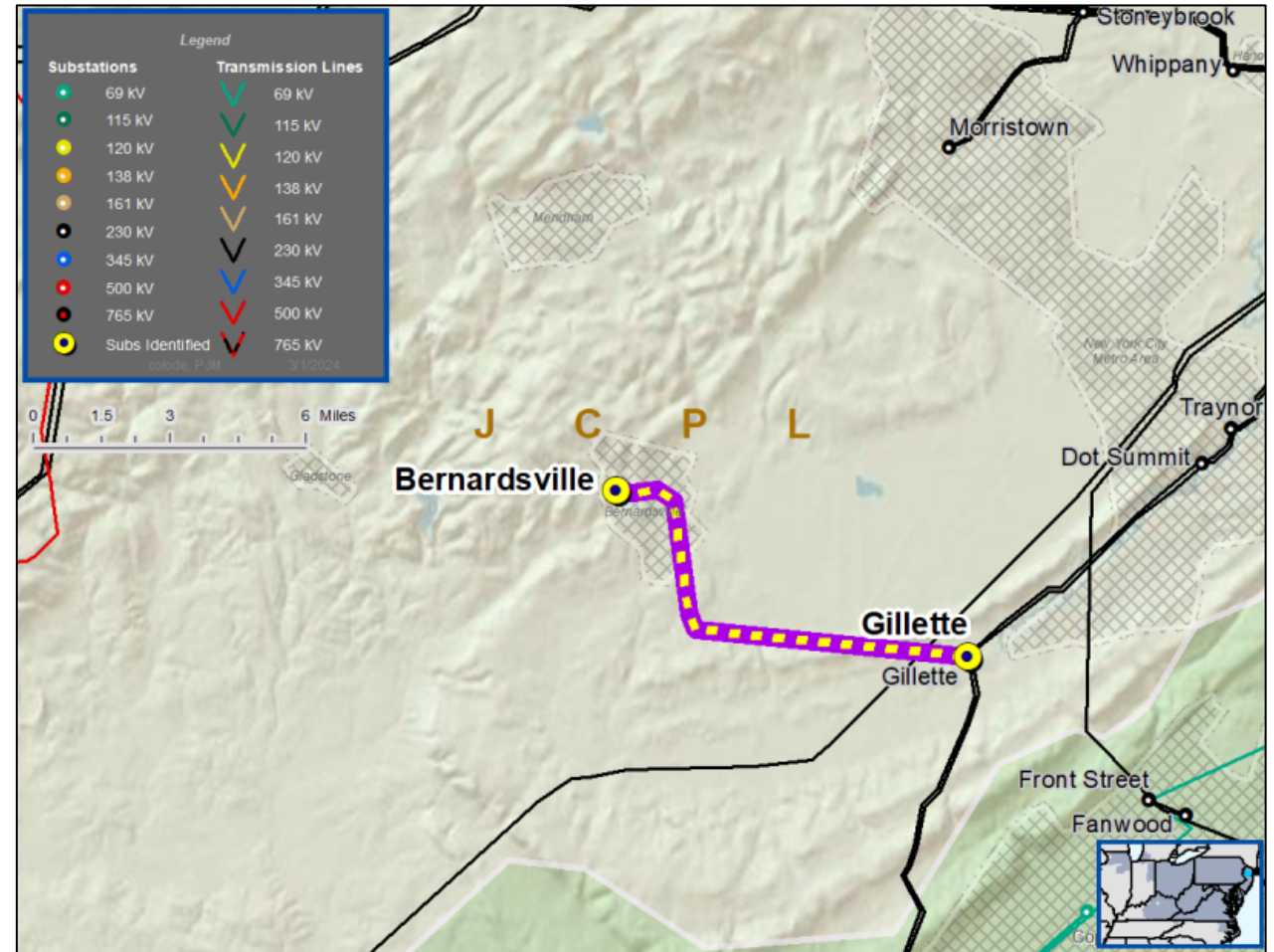
- System Performance Global Factors
 - System reliability/performance
 - Reliability of Non-Bulk Electric System (Non-BES) Facilities
- Past System Reliability/Performance

Problem Statement:

An N-1-1 contingency results in the Stirling – Lyons 34.5 kV B730 Line section loading to 120% of its summer emergency rating (38 MVA).

The transmission line is currently limited by transmission line conductor.

- Stirling – Lyons B730 34.5 kV Line Ratings:
 - 37 / 38 / 42 / 42 MVA (SN/SE/WN/WE)



JCPL Transmission Zone M-3 Process Bernardsville - Gillette 34.5 kV B730 Line, NJ

Need number: JCPL-2024-011

Process Stage: Solution Meeting –SRRTEP-MA – 07/17/2026

Proposed Solution:

- Rebuild approximately 5.0 miles of Gillette - Stirling - Lyons 34.5 kV B730 Line with new conductor.
- Rebuild approximately 1.7 miles Gillette - Martinsville 34.5 kV I737 Line from Structure #39 to #16 that are shared with Gillette - Stirling 34.5 kV B370 Line with new conductor.
- Replace in-line switch LB21-I737 on Gillette - Martinsville 34.5 kV I737 Line with 34.5 kV load break SCADA switch.
- At Gillette Substation: Upgrade relay settings.
- At Stirling Substation: Replace disconnect switches.

Transmission Line Ratings:

Gillette - Stirling Tap 34.5 kV B730 Line Section

- Before Proposed Solution: 41 / 50 / 48 / 60 MVA (SN/SE/WN/WE)
- After Proposed Solution: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)

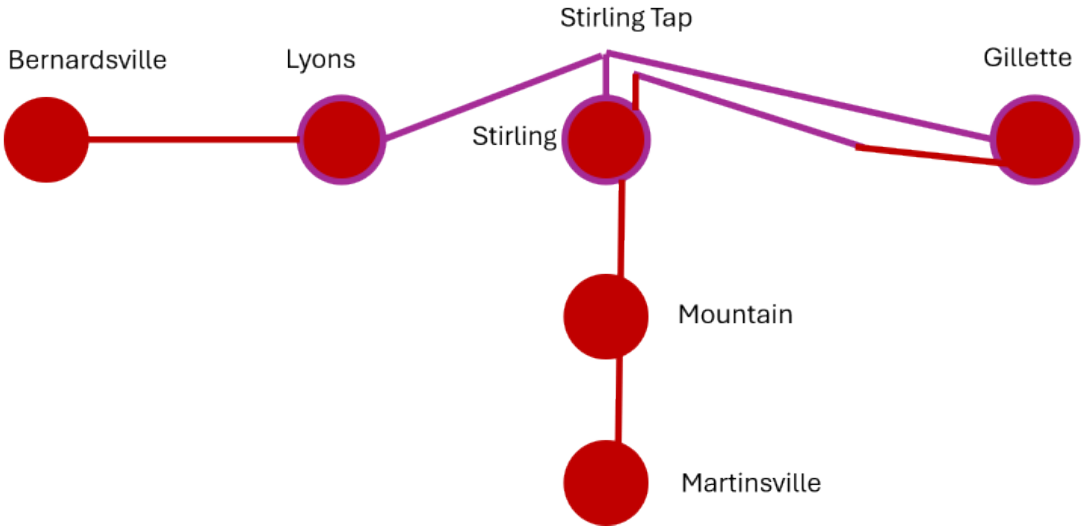
Stirling Tap - Lyons 34.5 kV B730 Line Section

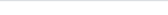
- Before Proposed Solution: 37 / 38 / 42 / 42 MVA (SN/SE/WN/WE)
- After Proposed Solution: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)

Stirling Tap - Stirling 34.5 kV B730 Line Section

- Before Proposed Solution: 39 / 48 / 51 / 57 MVA (SN/SE/WN/WE)
- After Proposed Solution: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)

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

JCPL Transmission Zone M-3 Process Bernardsville - Gillette 34.5 kV B730 Line, NJ

Need number: JCPL-2024-011

Process Stage: Solution Meeting –SRRTEP-MA – 07/17/2026

Proposed Solution:

(Cont'd from previous slide)

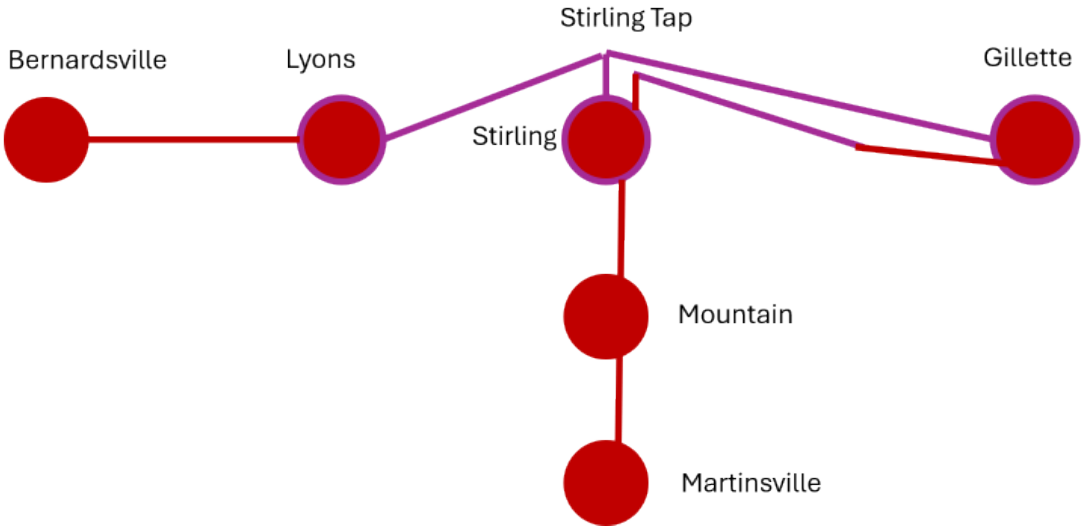
Gillette - Stirling Tap 34.5 kV I737 Line Section

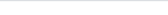
- Before Proposed Solution: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)
- After Proposed Solution: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)

Alternatives Considered:

Maintain the line in existing condition with elevated risk of failure due to equipment deterioration.

Estimated Project Cost: \$20.51M
Projected In-Service: 06/30/2028
Project Status: Conceptual
Model: 2024 RTEP model for 2029 Summer (50/50)



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

Need Number: JCPL-2024-038

Process Stage: Solution Meeting – SRRTEP-MA – 07/17/2026

Previously Presented: Need Meeting – SRRTEP-MA – 05/16/2024

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption Reference:

- System Performance Global Factors
 - System reliability/performance
- Line Condition Rebuild/Replacement
 - Age/condition of wood pole transmission line structures

Problem Statement:

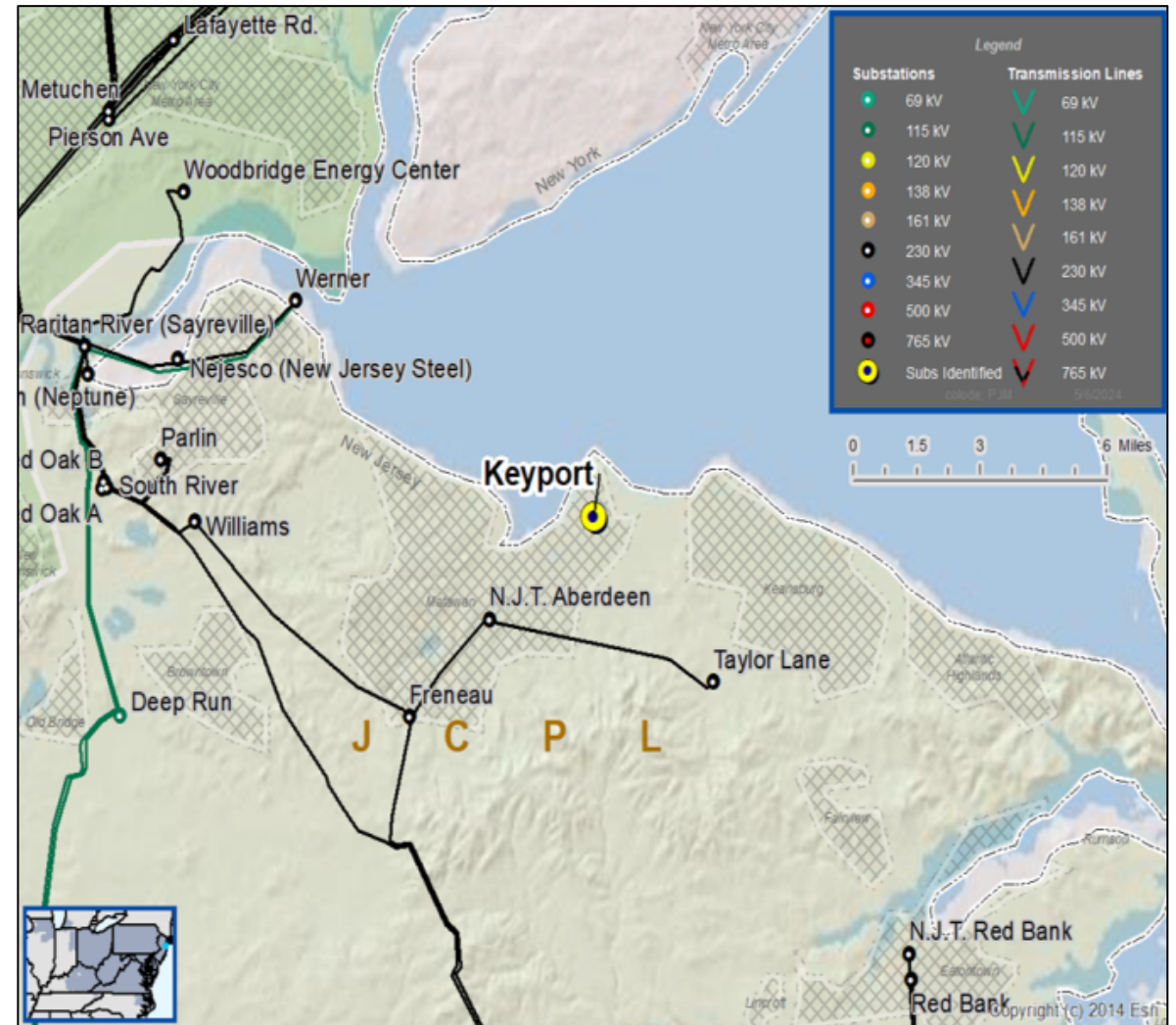
The Keyport–EH Werner 34.5 kV V48 Line was constructed approximately 74 years ago and is approaching end of life. It is approximately 9 miles long with 273 wood pole transmission line structures.

Recent inspections show the line is exhibiting deterioration resulting in increased maintenance costs. Inspection findings include:

- 107 structures require replacement or repair due to deterioration.
- 52 structures failed inspection due to sound, woodpecker damage, top rot, decay, cracking, and/or delamination of cross-arms.

Since 2019, the line has had 19 unscheduled sustained outages.

- Existing Transmission Line Ratings: 41 / 50 / 48 / 60 MVA (SN/SE/WN/WE)



Need number: JCPL-2024-038

Process Stage: Solution Meeting –SRRTEP-MA – 07/17/2026

Proposed Solution:

- Rebuild approximately 7.6 miles of the EH Werner - Keyport 34.5 kV V48 Line using new conductor and upgrade relays at EH Werner and Keyport substations.
- A portion of the line between Str. 168 to Str. 206 (1.3-miles) will not be rebuilt as it will be rebuilt per b3130.6.
- Replace substation conductor at Clifford Solar Substation.

Transmission Line Ratings:

Keyport - Clifford Solar 34.5 kV Line

- Before Proposed Solution: 41 / 50 / 48 / 60 MVA (SN/SE/WN/WE)
- After Proposed Solution: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)

Clifford Solar - EH Werner 34.5 kV Line

- Before Proposed Solution: 41 / 50 / 48 / 60 MVA (SN/SE/WN/WE)
- After Proposed Solution: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)

Alternatives Considered:

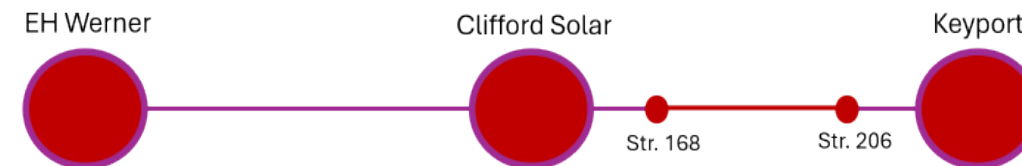
Maintain existing condition with elevated risk of failure due to equipment deterioration.

Estimated Project Cost: \$42.10M

Projected In-Service: 04/05/2030

Project Status: Conceptual

Model: 2024 RTEP model for 2029 Summer (50/50)



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

Need Number: JCPL-2025-012

Process Stage: Solution Meeting – SRRTEP-MA – 07/17/2026

Previously Presented: Need Meeting – SRRTEP-MA – 12/11/2025

Project Driver:

Equipment Condition/Performance/Risk

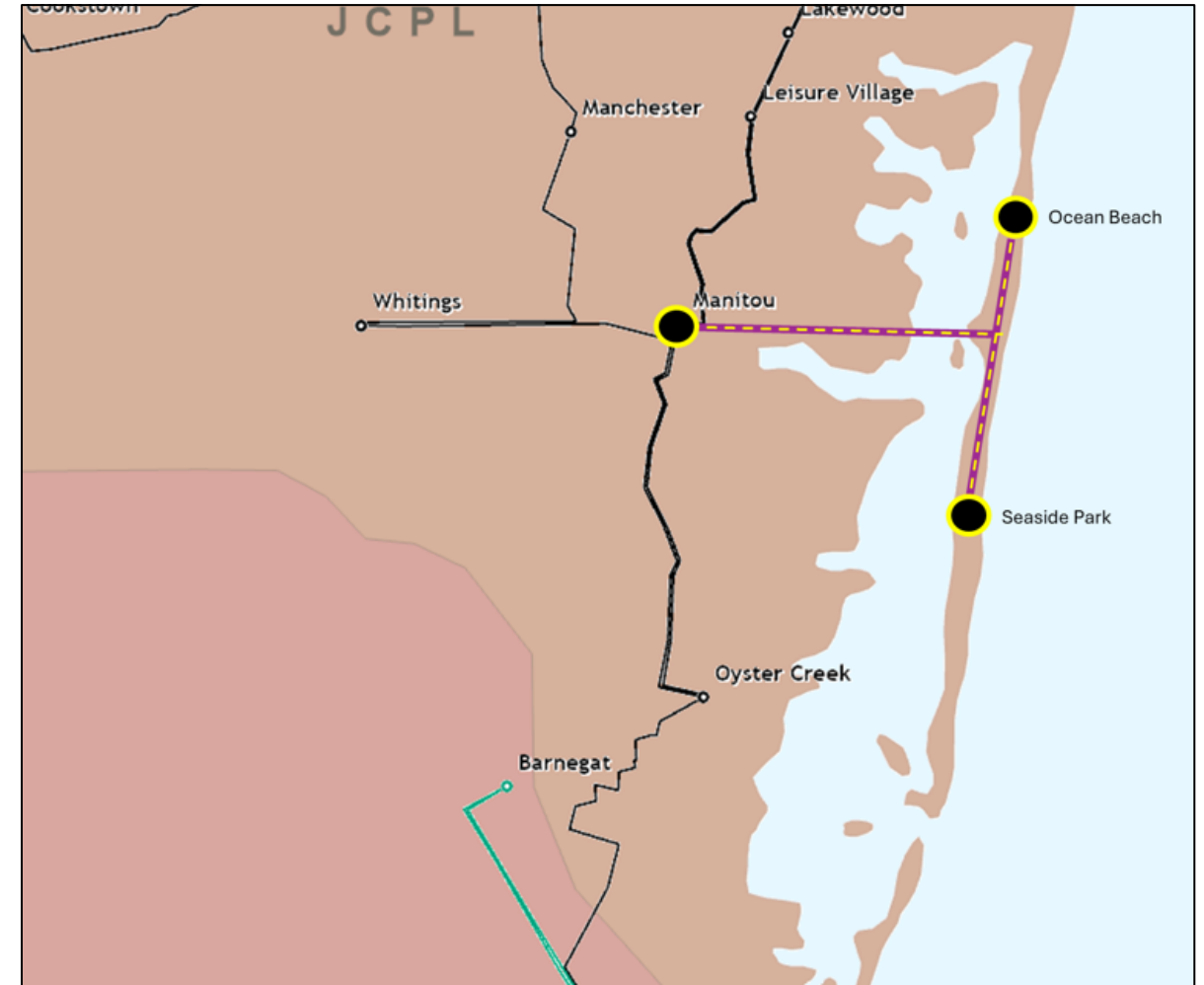
Specific Assumption Reference:

- System Performance Global Factors
 - System reliability/performance

Problem Statement:

The Manitou - Ocean Beach - Seaside Park 34.5 kV D212 Line and Manitou - Ortley Beach 34.5 kV V126 Line both utilize under-bridge cables in duct for a one-mile section in Ocean County. The lines are susceptible to outages caused by incidents occurring on the bridge such as car accidents and fire and are difficult to maintain.

Over the past five years, there have been 22 unscheduled outages on the D212 34.5 kV line and 28 unscheduled outages on the V126 34.5 kV line.



Need number: JCPL-2025-012

Process Stage: Solution Meeting –SRRTEP-MA – 07/17/2026

Proposed Solution:

Replace the under-bridge cables on the Manitou-Ocean Beach-Seaside Park 34.5 kV D212 Line and Manitou-Ortley Beach 34.5 kV V126 Line with new submarine cables (1-mile). Utilize submarine EPR cable with health monitoring capability as the new transmission line conductor.

Transmission Line Ratings:

Island Heights Tap-Ortley Beach 34.5 kV Line

- Before Proposed Solution: 35 / 44 / 35 / 44 MVA (SN/SE/WN/WE)
- After Proposed Solution: 44 / 53 / 50 / 63 MVA (SN/SE/WN/WE)

Toms River Tap-Seaside Park 1 Tap 34.5 kV Line

- Before Proposed Solution: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)
- After Proposed Solution: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)

Alternatives Considered:

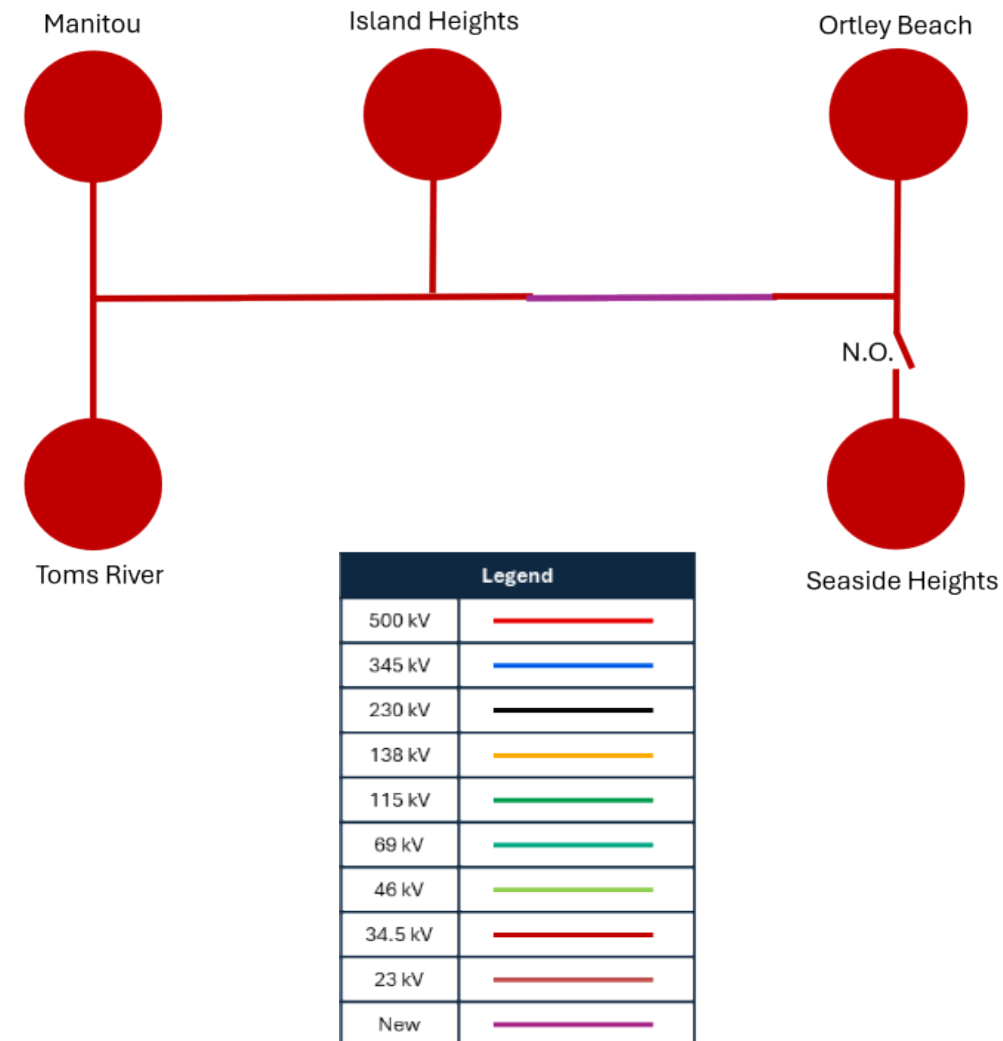
Maintain the line in existing condition with elevated risk of failure due to equipment deterioration.

Estimated Project Cost: \$10.00M

Projected In-Service: 04/23/2029

Project Status: Conceptual

Model: 2024 RTEP model for 2029 Summer (50/50)



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

07/06/2026 – V1 – Original version posted to pjm.com

07/07/2026 – V2 – Updated formatting