



Sub Regional RTEP Committee PJM Mid-Atlantic Reliability Update

October 14, 2021



First Review Baseline Reliability Project

Process Stage: First Review

Criteria: Summer N-1-1

Assumption Reference: 2026 RTEP assumption

Model Used for Analysis: 2026 RTEP Summer case

Proposal Window Exclusion: Substation Equipment and Below 200 kV exclusion

Problem Statement: The Windy Edge - Chesco Park 110501 115kV circuit is overloaded for N-1-1 contingency.

Violations were posted as part of the 2021 Window 1: (FG# N2-ST1, N2-ST2)

Existing Facility Rating: 136SN/156SE, 168WN/183WE MVA

Proposed Facility Rating: 143SN/186SE, 171WN/215WE MVA

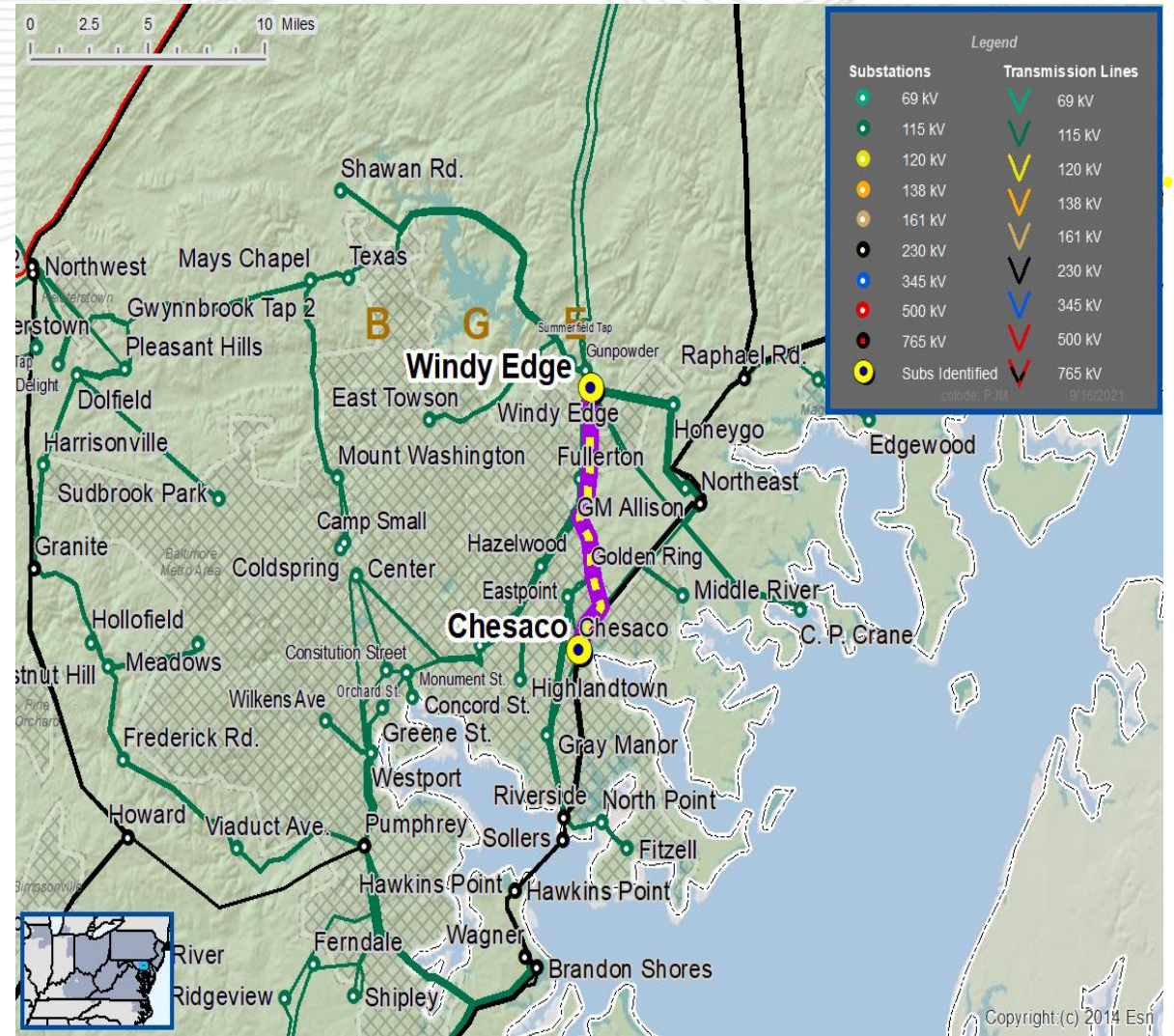
Proposed Solution:

Upgrade Windy Edge 115 kV Substation Conductor to increase ratings of the Windy Edge - Chesco Park 110501 circuit

Estimated Cost: \$0.5 M

Alternatives N/A

Required In-Service: 6/1/2026



Process Stage: First Review

Criteria: Winter Generator Deliverability

Assumption Reference: 2026 RTEP assumption

Model Used for Analysis: 2026 RTEP Winter case

Proposal Window Exclusion: Substation Equipment and Below 200 kV exclusion

Problem Statement: The Townsend-Church 138 kV circuit is overloaded for towerline contingency.

Violations were posted as part of the 2021 Window 1: (FG# GD-W248)

Existing Facility Rating: 280SN/348SE,318WN/389WE MVA

Proposed Facility Rating: 392SN485SE,451WN/546WE MVA

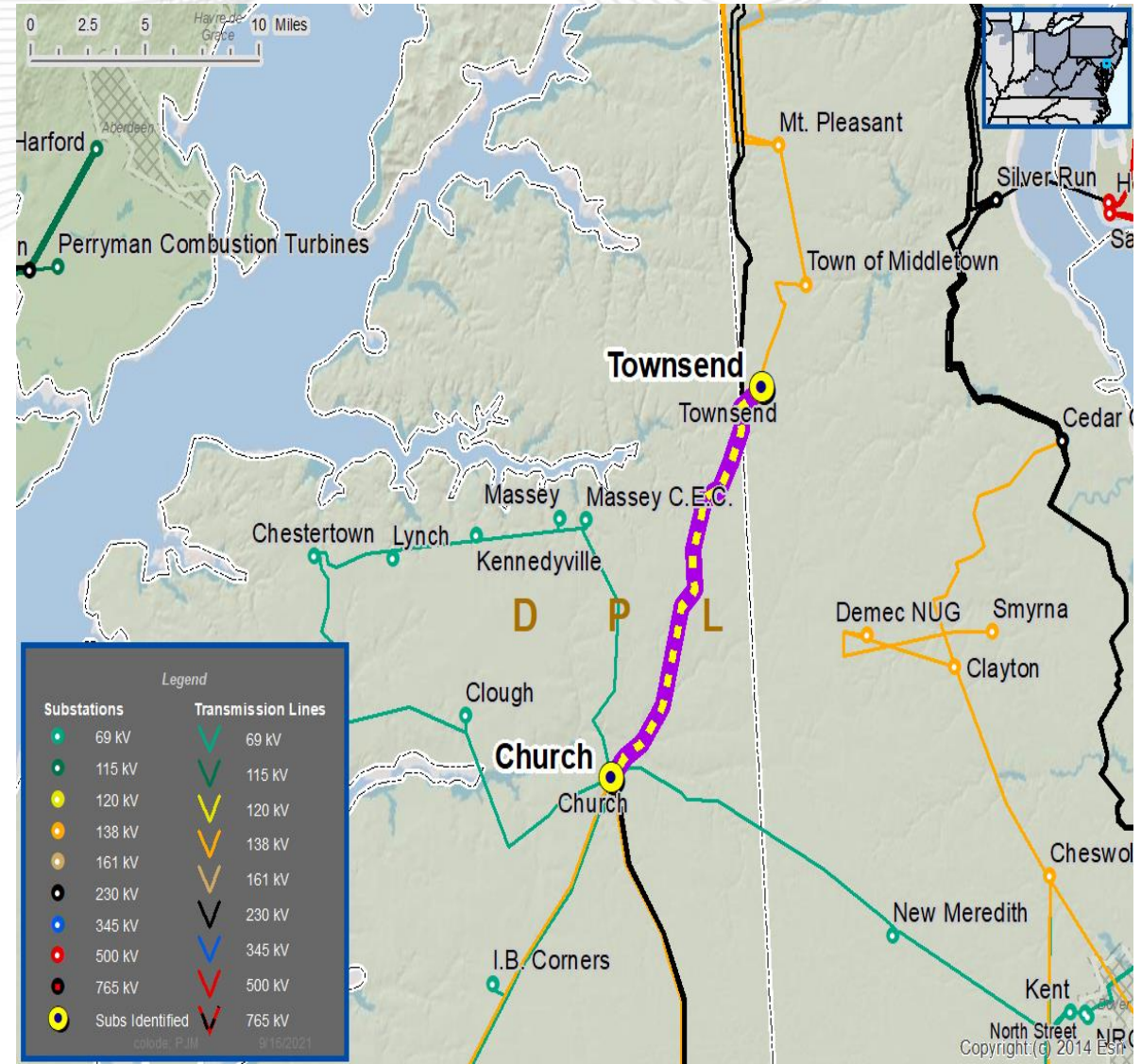
Proposed Solution:

- Replace terminal equipment (Stranded Bus, Disconnect Switch, and Circuit Breaker) at Church Substation
- Replace terminal equipment (Circuit Breaker) at Townsend Substation

Estimated Cost: \$1.45 M

Alternatives N/A

Required In-Service: 6/1/2026



Process Stage: First Review

Criteria: Summer Generator Deliverability

Assumption Reference: 2026 RTEP assumption

Model Used for Analysis: 2026 RTEP Summer case

Proposal Window Exclusion: Substation Equipment and Below 200 kV exclusion

Problem Statement: The Loretto - Fruitland 69 kV circuit is overloaded for line fault stuck breaker contingency.

Violations were posted as part of the 2021 Window 1: (FG# GD-S444)

Existing Facility Rating: 87SN/112SE, 110N/143WE MVA

Proposed Facility Rating: 105SN/136SE, 121WN/153WE MVA

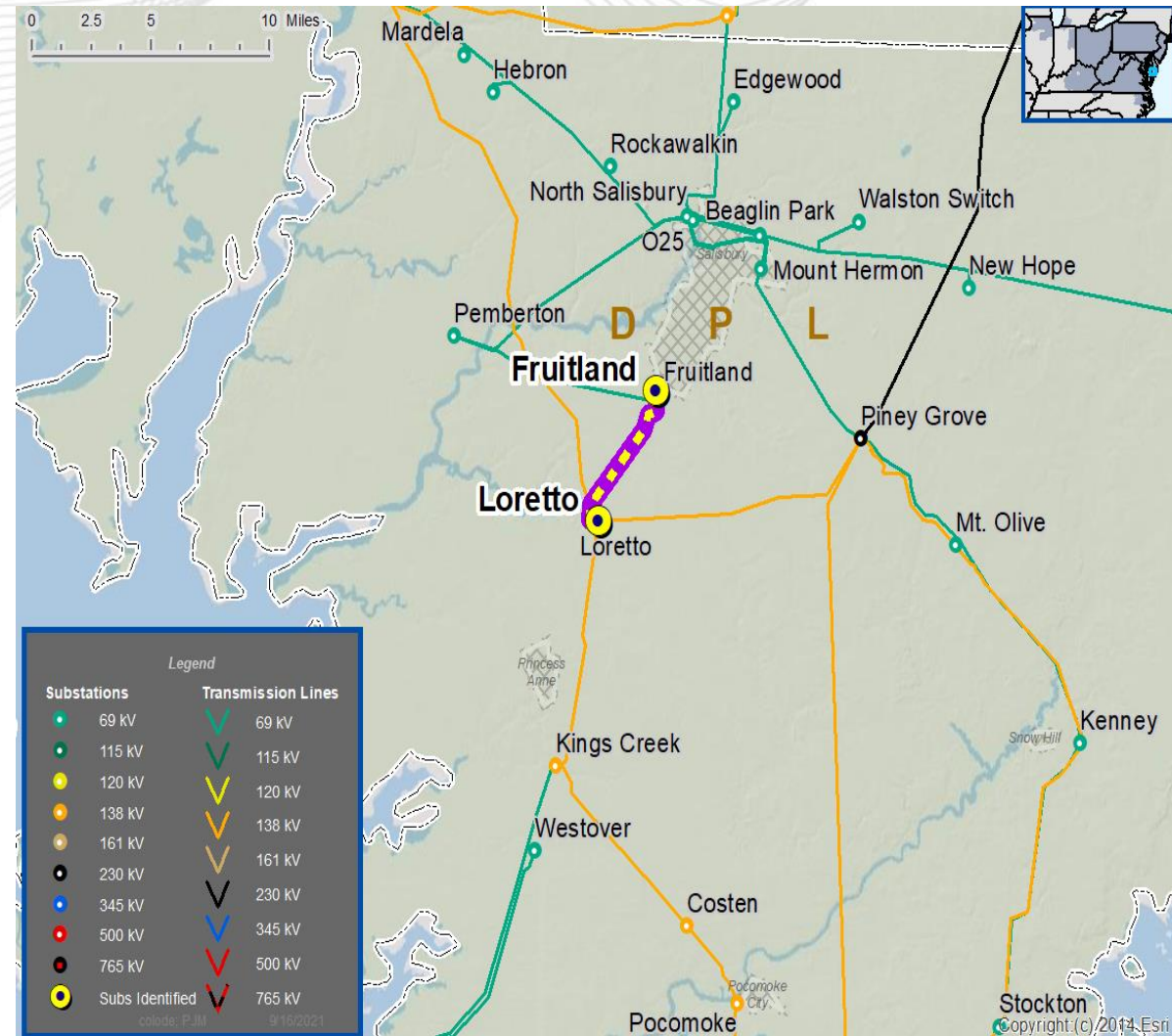
Proposed Solution:

Upgrade terminal equipment on the Loretto - Fruitland 69 kV circuit: Replace the 477 ACSR stranded bus on the 6711 line terminal inside Loretto substation and the 500 SDCU stranded bus on the 6711 line terminal inside Fruitland substation with 954 ACSR conductor.

Estimated Cost: \$0.8 M

Alternatives N/A

Required In-Service: 6/1/2026



Process Stage: First Review

Criteria: FERC Form 715

Assumption Reference: 2026 RTEP assumption

Model Used for Analysis: 2026 RTEP Summer case

Proposal Window Exclusion: Below 200 kV exclusion

Problem Statement: N. Boyertown - W. Boyertown 69 kV circuit is overloaded for multiple breaker contingencies.

Violations were posted as part of the 2021 Window 1: (FG# ME-T1 and ME-T2)

Existing Facility Rating: 71SN/72SE,72WN/72WE MVA

Proposed Facility Rating: 139SN/169SE, 158WN/201WE MVA

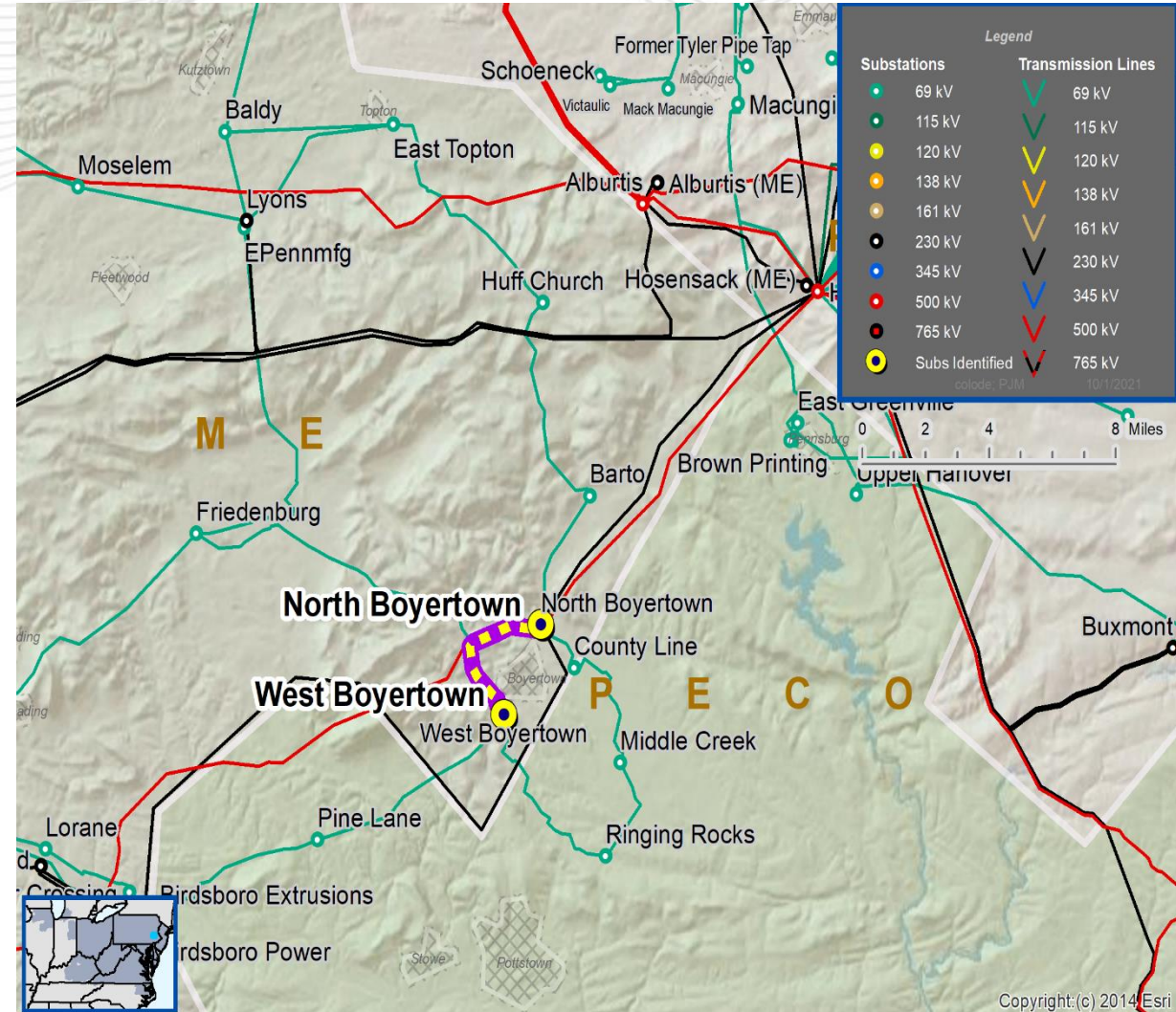
Proposed Solution:

Rebuild approx. 3.6 miles of N. Boyertown - W. Boyertown 69 kV circuit # 875 with 795 ACSR.. Upgrade terminal equipment (circuit breaker, disconnect switches, substation conductor) and relays at N. Boyertown and W. Boyertown substation.

Estimated Cost: \$8.79 M

Alternatives N/A

Required In-Service: 6/1/2026



Process Stage: First Review

Criteria: Summer Generator Deliverability

Assumption Reference: 2026 RTEP assumption

Model Used for Analysis: 2026 RTEP Summer case

Proposal Window Exclusion: None

Problem Statement:

East Towanda – North Meshoppen 115 kV is overloaded for N-1 contingency.

Violations were posted as part of the 2021 Window 1: GD-S13

Existing Facility Rating: 202SN/245SE, 228WN/290WE MVA

Proposed Facility Rating: 448SN/453SE, 448WN/516WE MVA

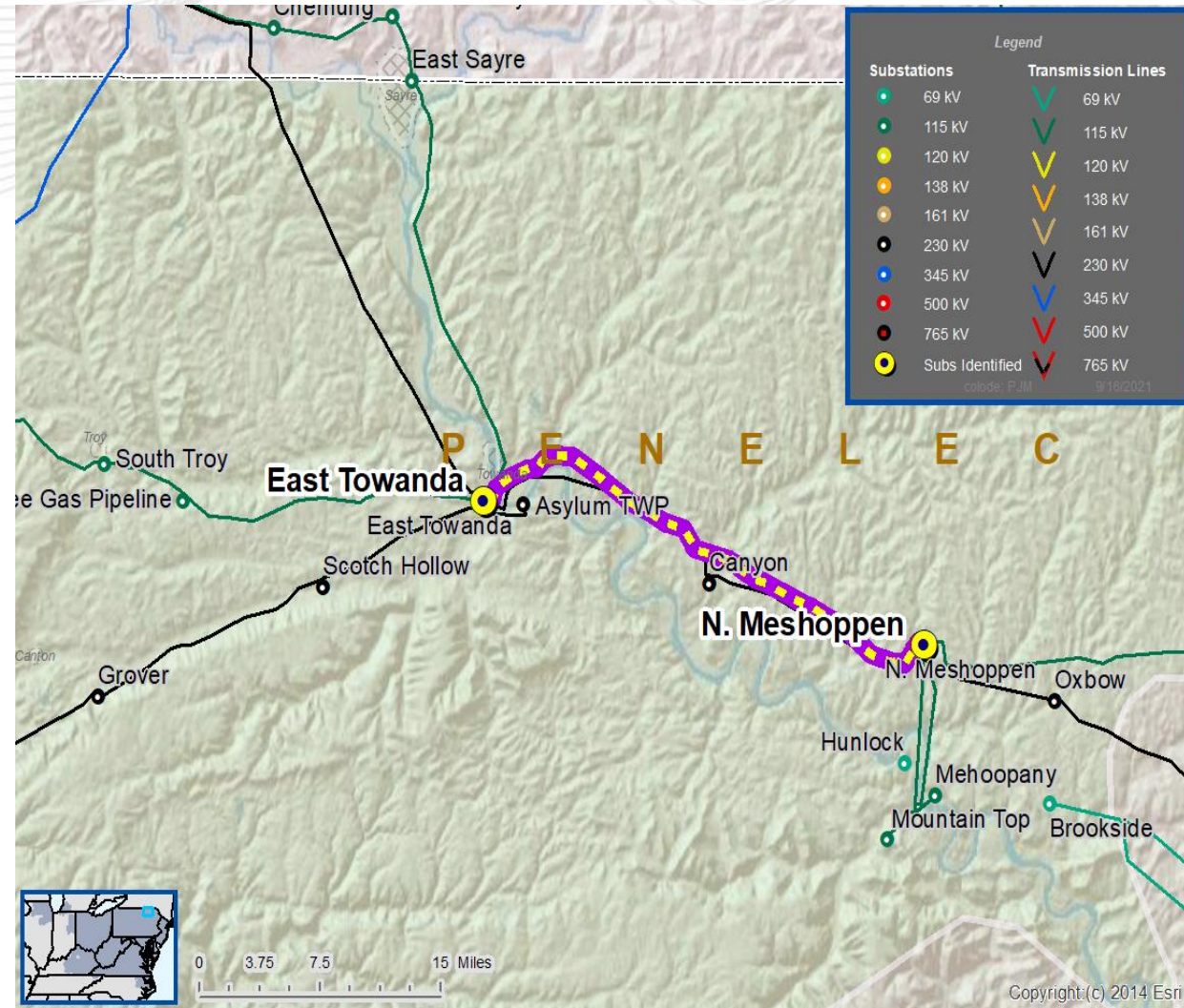
Proposed Solution:

Proposal ID 589 - East Towanda – North Meshoppen 115 kV Line: Rebuild 2.5 miles of 636 ACSR with 1113 ACSS conductor using single circuit construction. Upgrade all terminal equipment to the rating of 1113 ACSS.

Estimated Cost: \$6.66 M

Alternatives: N/A

Required In-Service: 6/1/2026



Process Stage: First Review

Criteria: FERC Form 715

Assumption Reference: 2026 RTEP assumption

Model Used for Analysis: 2026 RTEP Summer and Winter cases

Proposal Window Exclusion: Substation Equipment and Below 200 kV exclusion

Problem Statement: Beth 33 – Cambria Prison 46 kV circuit is overloaded for a breaker contingency.

Violations were posted as part of the 2021 Window 1: (FG# , PN-T1 and PN-T2)

Existing Facility Rating: 22SN/22SE, 22WN/22WE MVA

Proposed Facility Rating: 32SN/32SE, 35WN/35WE MVA

Proposed Solution:

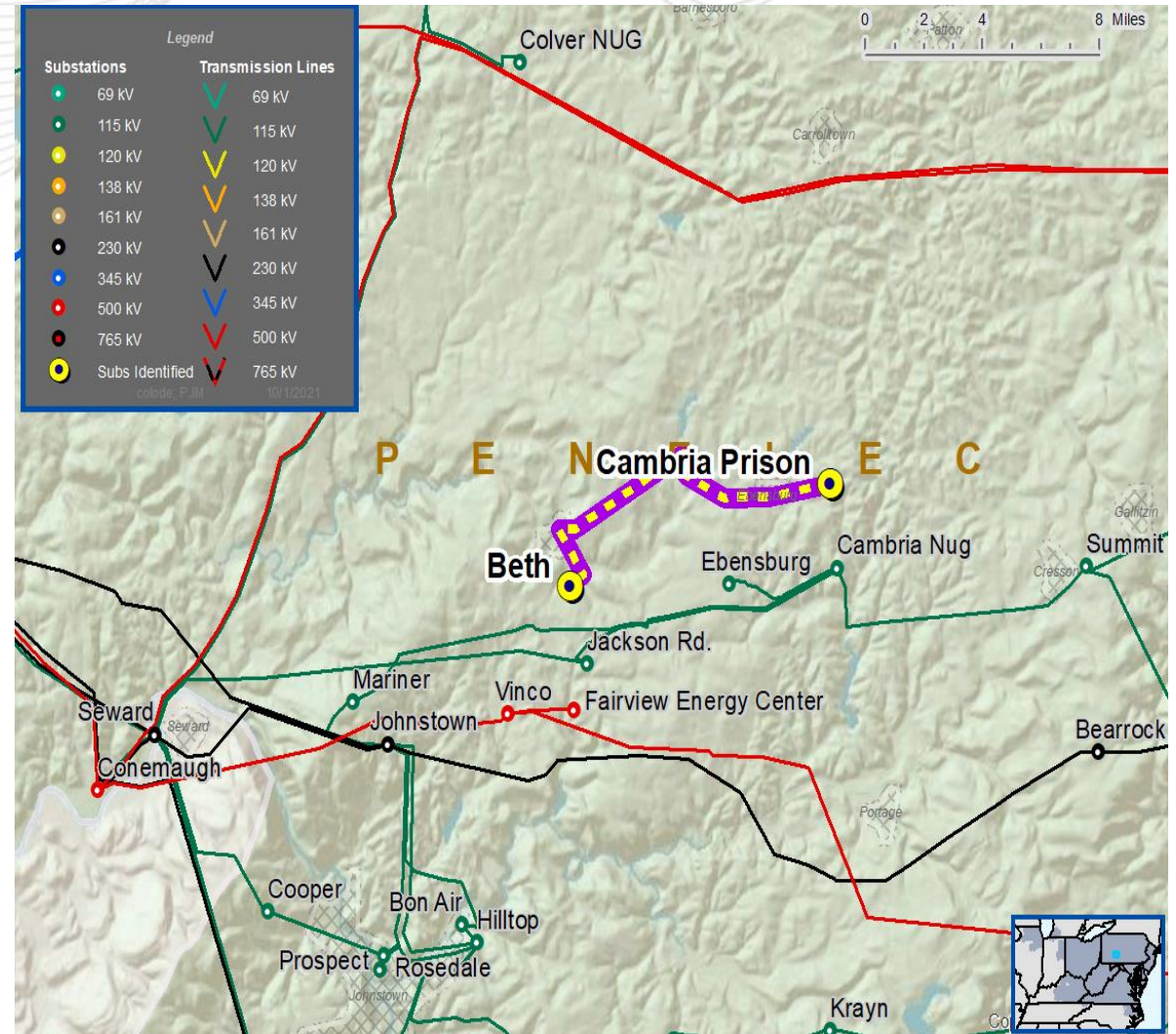
Replace the relay panels at Bethlehem 33 46 kV substation on the Cambria Prison line .

Note: The Beth 33 – Cambria Prison 46 kV circuit will be upgrades as part of the s2412, if s2412 project is completed prior to June 6, 2026, the baseline identified to address the reliability violation will be canceled.

Estimated Cost: \$0.3 M

Alternatives N/A

Required In-Service: 6/1/2026



Short Circuit Project

Process Stage: First Review

Criteria: FERC Form 715

Assumption Reference: 2026 RTEP assumption

Model Used for Analysis: 2021 Series -2026 Short circuit model

Proposal Window Exclusion: Below 200 kV exclusion

Problem Statement: Five Existing Atlantic 34.5 kV breakers (J36, BK1A, BK1B, BK3A and BK3B), are overdutied in the 2026 case model.

Violations were posted as part of the 2021 Window 1: (FG# JCPL-SC1, JCPL-SC2, JCPL-SC3, JCPL-SC4 and JCPL-SC5)

Existing Facility Rating: 40 kA and 41.8 kA

Proposed Facility Rating: 63 kA

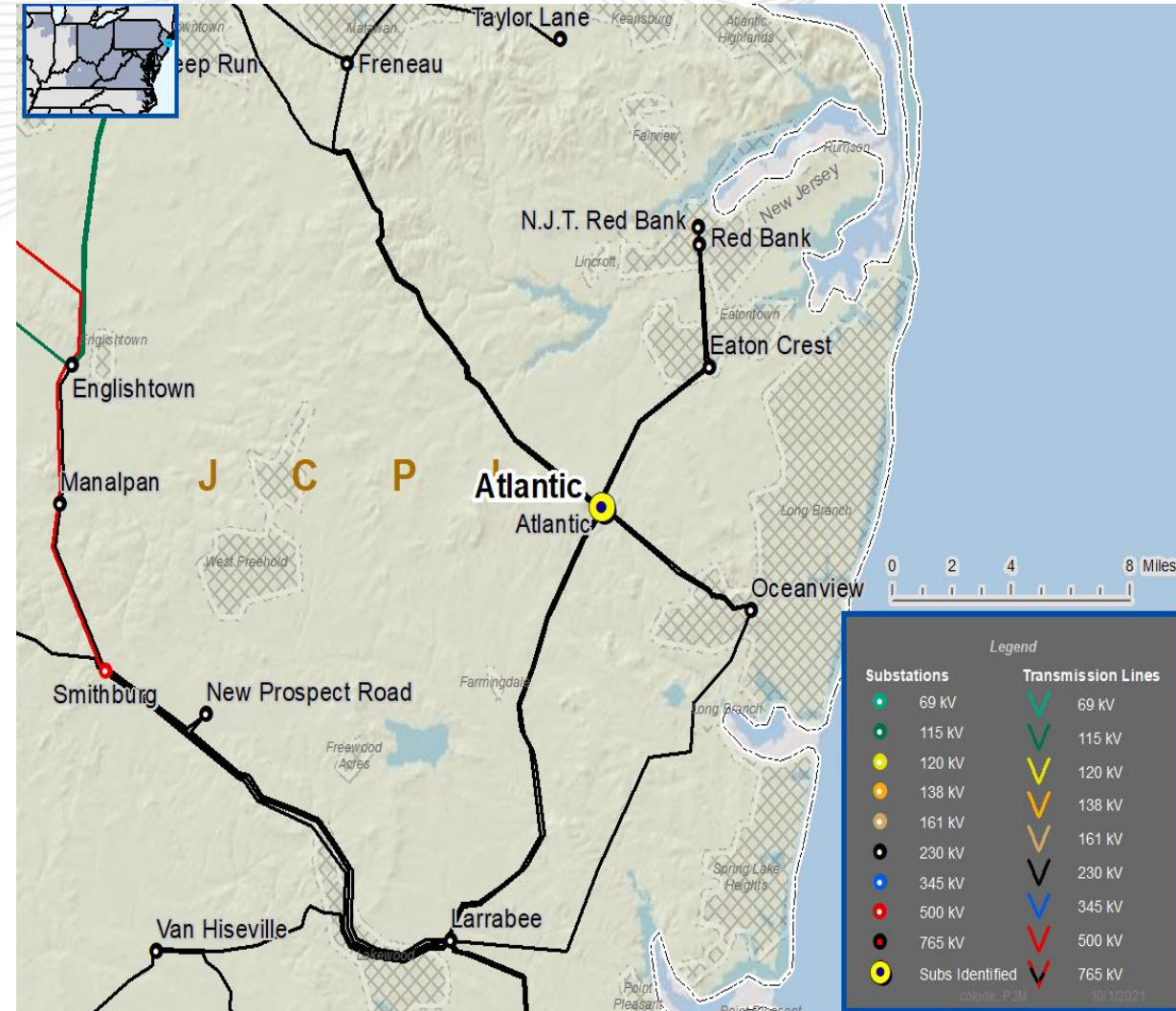
Proposed Solution:

Replace Five Atlantic 34.5 kV breakers (J36, BK1A, BK1B, BK3A and BK3B) with 63kA rated breakers and associated equipment.

Estimated Cost: \$3.5 M

Alternatives N/A

Required In-Service: 6/1/2026



Process Stage: First Review

Criteria: FERC Form 715

Assumption Reference: 2026 RTEP assumption

Model Used for Analysis: 2021 Series -2026 Short circuit model

Proposal Window Exclusion: Below 200 kV exclusion

Problem Statement: Six existing Werner 34.5 kV breakers (E31A_Prelim, E31B_Prelim, V48 future, W101, M39 and U99) are overdutied in the 2026 case model.

Violations were posted as part of the 2021 Window 1: (FG# JCPL-SC6, JCPL-SC7, JCPL-SC8, JCPL-SC9, JCPL-SC10 and JCPL-SC11)

Existing Facility Rating: 25.1 kA

Proposed Facility Rating: 40 kA

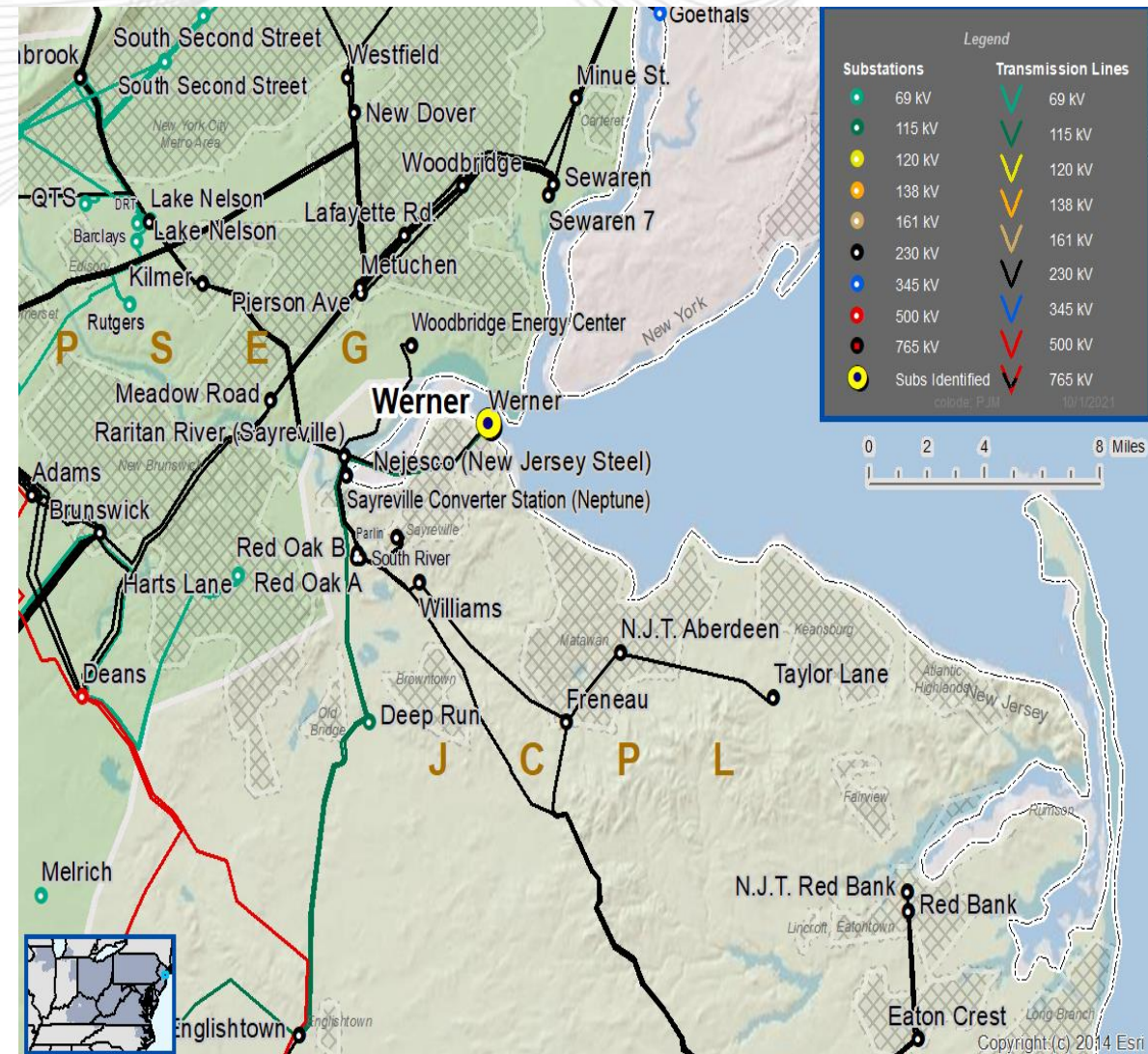
Proposed Solution:

Replace Six Werner 34.5 kV breakers (E31A_Prelim, E31B_Prelim, V48 future, W101, M39 and U99) with 40 kA rated breakers and associated equipment..

Estimated Cost: \$4.2 M

Alternatives N/A

Required In-Service: 6/1/2026



Process Stage: First Review

Criteria: FERC Form 715

Assumption Reference: 2026 RTEP assumption

Model Used for Analysis: 2021 Series -2026 Short circuit model

Proposal Window Exclusion: Below 200 kV exclusion

Problem Statement: One Freneau existing 34.5 kV breaker (BK6) is overdutied in the 2026 case model.

Violations were posted as part of the 2021 Window 1: (FG# JCPL-SC12)

Existing Facility Rating: 40 kA

Proposed Facility Rating: 63 kA

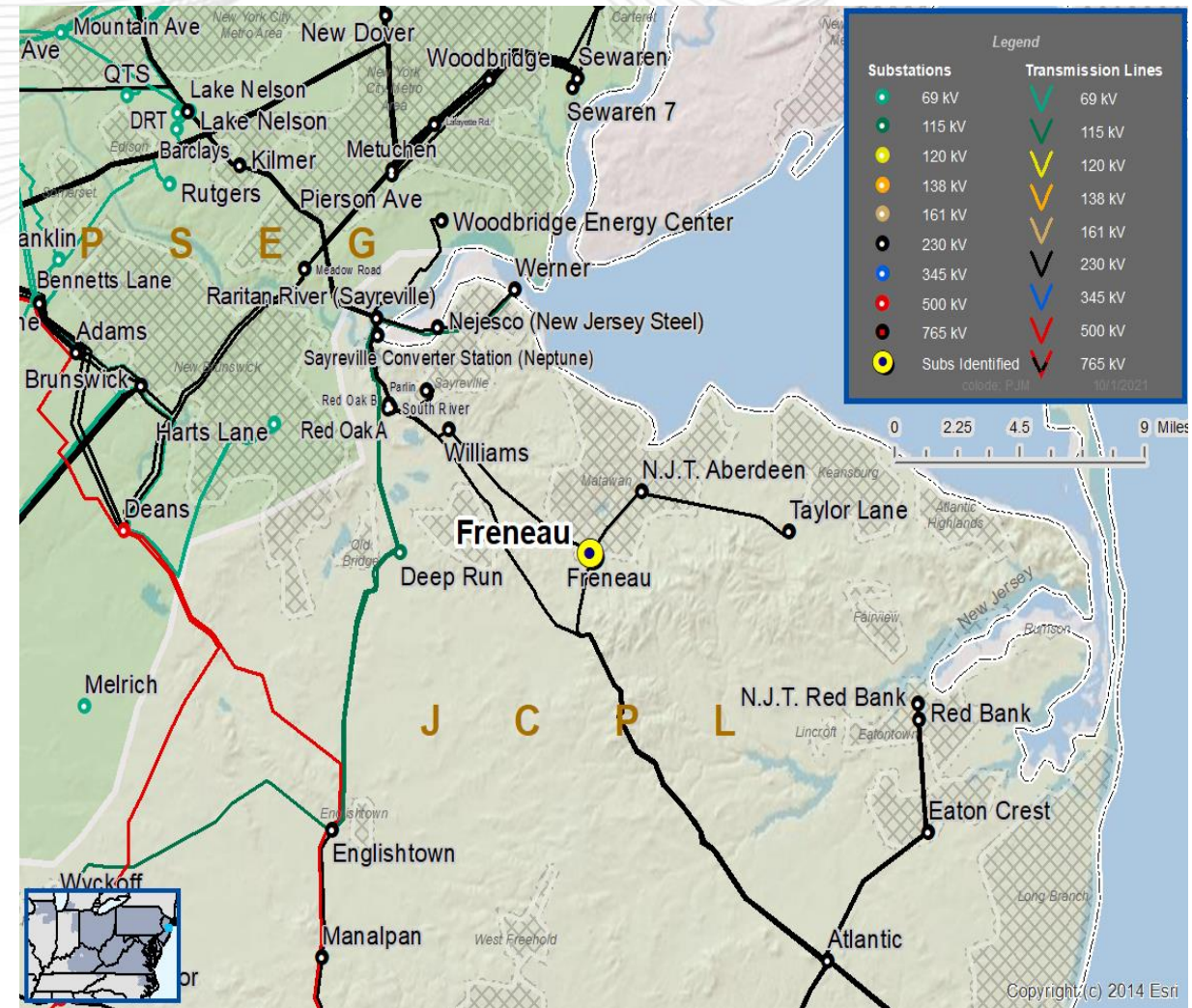
Proposed Solution:

Replace One Freneau 34.5 kV breaker (BK6) with 63 kA rated breakers and associated equipment..

Estimated Cost: \$0.7 M

Alternatives N/A

Required In-Service: 6/1/2026



Questions?



2021

- The remaining 2021 Mid-Atlantic SRRTEP meetings are as followed
- 11/18, 12/20

V1 – 10/7/2021 – Original slides posted

V2 – 10/2/2021 – Made correction on slides # 3, 4, and 5. (Replaced 2020 Window 1 with 2021 Window 1)

V3 – 10/22/2021 – made minor correction and added conductor type on slide #6