

Subregional RTEP Committee – Western AMPT Supplemental Projects

September 15, 2022

AMPT Projects in ATSI Transmission Zone: Supplemental Amherst, OH

Need Number: AMPT-2021-005

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

Previously Presented:

Solution Meeting – 2/18/2022, Need Meeting – 11/19/2021

Supplemental Project Driver(s): Customer Service

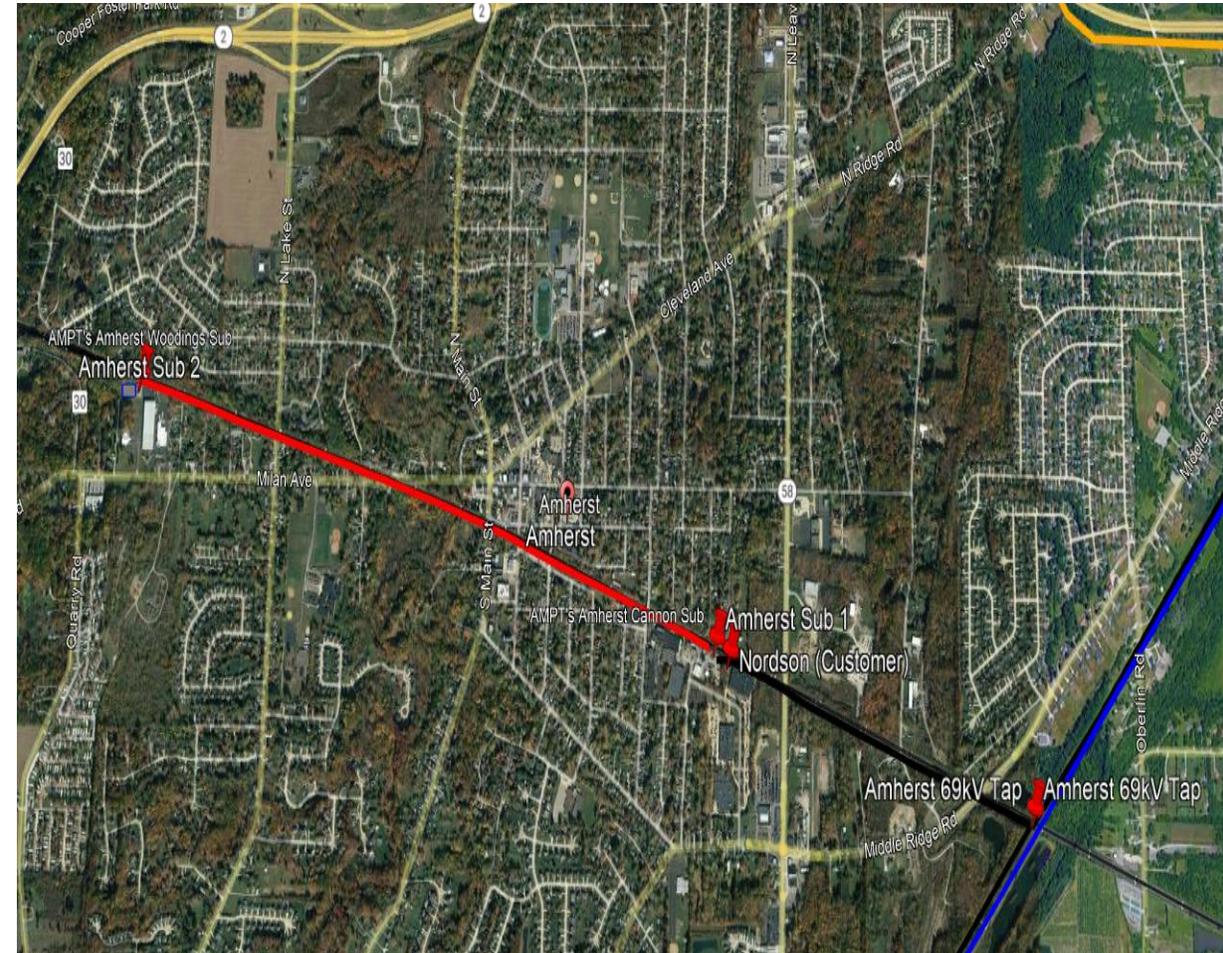
Specific Assumption Reference(s): AMPT Transmission Facilities Interconnection Requirements Document

Problem Statement:

AMPT's Amherst Tap is an approximately 1.85 mile segment of a 2.85 mile radial tap supplied from ATSI's Henrietta-Johnson 69 kV line. Two stations are served off the Tap – Woodings and Cannon.

The City of Amherst has requested a 2nd supply to support the load (approximately 28 MVA). The radial supply presents a single point of failure that jeopardizes reliability for the City.

AMPT's Transmission Facilities Interconnection Requirements specify looped facilities for loads exceeding 5 MVA or 35 MW-mile thresholds.



AMPT Projects in ATSI Transmission Zone: Supplemental Amherst, OH

Need Number: AMPT-2021-005

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

Previously Presented: Solution Meeting – 2/18/2022, Need Meeting – 11/19/2021

Supplemental Project Driver(s): Customer Service

Proposed Solution:

AMPT Identified Scope

- Construct a greenfield 138 kV double circuit line for approximately 0.4 miles using 954 54/7 kcmil ACSS conductor and tap into the existing Beaver-Black River (ATSI) 138 kV line. **(\$1.53 M)**
- At Woodings (Amherst Sub #2) 69/12 kV Substation - Expand the sub with the installation of three (3) 138 kV circuit breakers; Install one (1) 138/69/12kV 130 MVA transformer; upgrade the 69 kV bus to 2000A, install two (2) 69 kV circuit breakers **(\$8.8 M)**
- At Cannon (Sub #1) 69/12 kV Sub - Install one (1) 69 kV breaker towards Nordson; Replace 600A bus disc switch with one rated at 1200A **(\$0.92 M)**

FE Identified Scope

- Design/Construct Tap Structure(s) at tap location
- Replace relays at Black River substation
- Complete fiber connection at Beaver and Black River substation

Alternatives Considered:

Rebuild existing 69 kV line between Woodings and Cannon substation to 69 kV double circuit configuration.

- This option was not selected as a tower outage would still interrupt all the load in the area, temporary facilities would be required during construction, and limited additional ROW.

Ancillary Benefits:

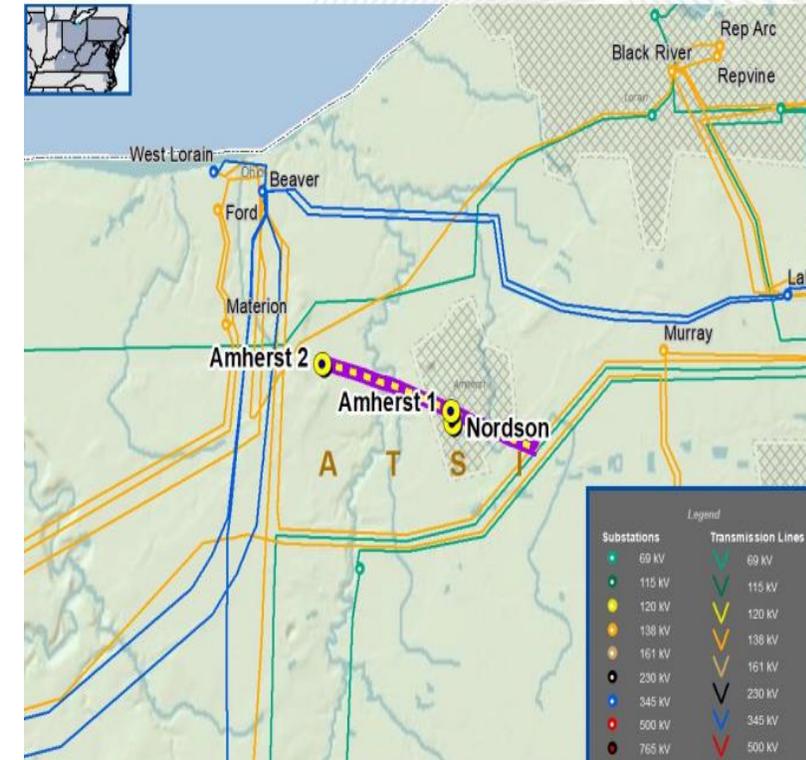
This project to be sequenced prior to FE's project to build the new Dewey 69 kV Substation (s1948). This project will accommodate that work to be completed without the need for temporary facilities.

Total Estimated Transmission Cost: \$11.25 M

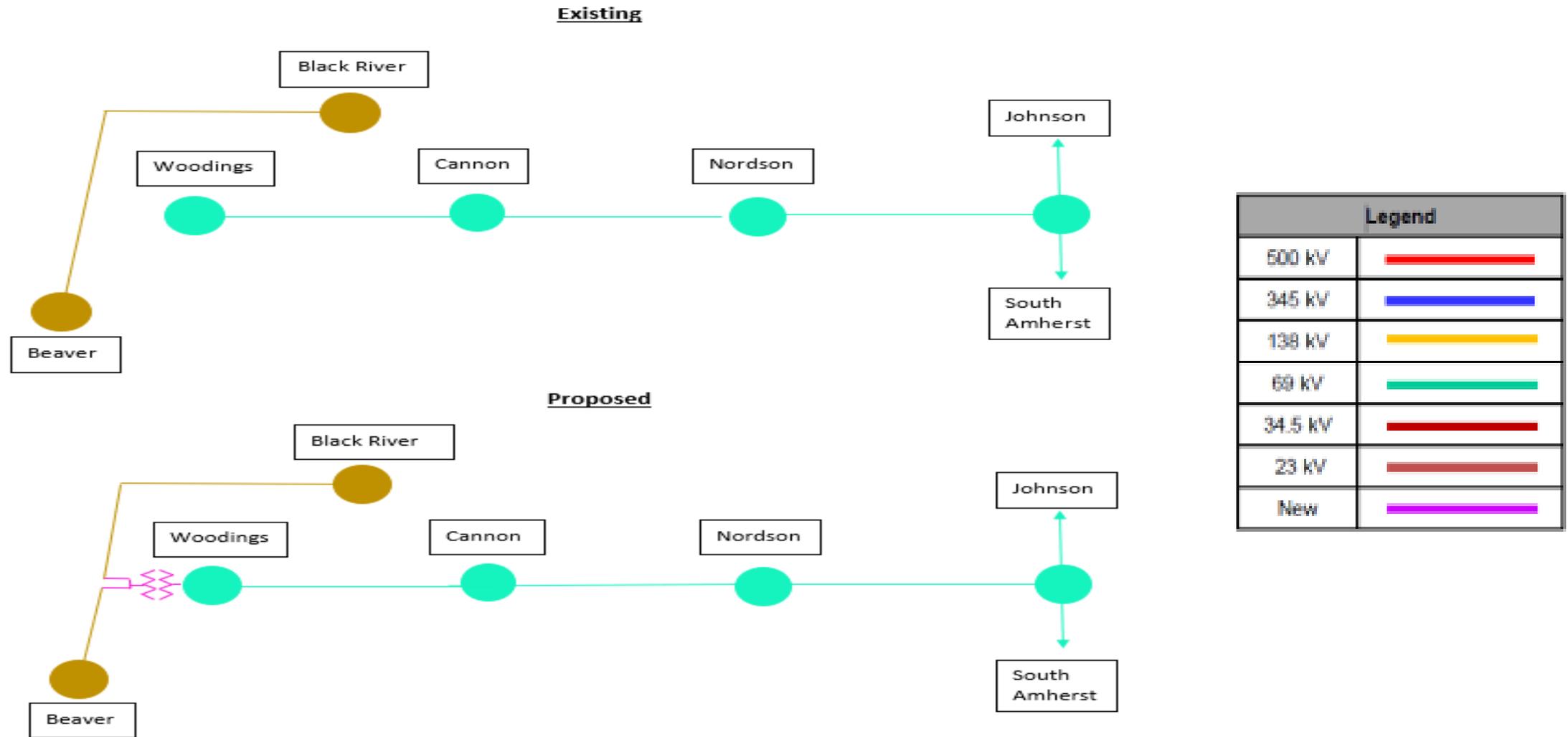
Projected In-Service: 12/31/2023

Supplemental Project ID: s2671

Project Status: Engineering



AMPT Projects in ATSI Transmission Zone: Supplemental Amherst, OH



AMPT Projects in ATSI Transmission Zone M3 Process

Rye Beach Road, Greenfield – Shinrock 69 kV line

Need Number: AMPT-2021-001

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

Previously Presented:

Solution Meeting – 6/15/2022, Need Meeting – 5/21/2021

Supplemental Project Driver(s): Customer Service

Specific Assumption Reference(s): AMPT Transmission Facilities Interconnection Requirements Document

Problem Statement:

Rye Beach Road 69kV Substation (AMP Transmission)

The existing interconnection is a 0.15 mile single radial tap from the ATSI Greenfield-Shinrock 69kV line to the Rye Beach Road (Huron Muni) substation.

Current peak load at Rye Beach Road is 26 MW, projected to increase to 38 MW by 10/1/21 and 40 MW by 10/1/22.

Also, AMPT Interconnection requirements specify a need for a second source for loads 5 MVA and above.



AMPT Projects in ATSI Transmission Zone M3 Process

Rye Beach Road, Greenfield – Shinrock 69 kV line

Need Number: AMPT-2021-001

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

Previously Presented:

Solution Meeting – 6/15/2022, Need Meeting – 5/21/2021

Supplemental Project Driver(s): Customer Service

Proposed Solution:

AMPT Identified Scope (\$5.7 M)

- At Rye Beach Road (Huron Muni) 69/12 kV Substation - Expand the current 69 kV station to a 4-CB ring bus arrangement to accommodate a 2nd 69 kV circuit (toward Shinrock). Build the new 69 kV ring bus to 2000A ratings; Install four (4) 69 kV circuit breakers; Install one (1) 69 kV circuit switcher; install ten (10) 69 kV bus disconnect switches (2000A);
- Relocate existing FE revenue metering at the substation as a result of the system reconfiguration.

FE Identified Scope (\$2.8 M)

- Build approximately 0.2 miles 69 kV line into AMPT's Rye Beach Road substation in a separate right of way using 556 kcmil ACSR conductor.
- Loop in/out the Greenfield-Shinrock 69 kV line into AMPT's Rye Beach Road Substation.
- FE will install two dead-end structures just outside of the AMPT's substation, for the new and existing line, this structure will be the point of interconnection (POI), The FE facilities/lines will terminate at the dead-end structure.
- FE will install two 1200 A motor-operated switches on the new and existing line at the dead-end structures.
- Adjust relay settings at Shinrock Substation
- Replace existing Greenfield (Shinrock Line) relay with a standard line relaying panel



AMPT Projects in ATSI Transmission Zone M3 Process

Rye Beach Road, Greenfield – Shinrock 69 kV line

Alternatives Considered:

No alternatives considered for this project.

Total Estimated Transmission Cost: \$8.5 M

Projected In-Service: 06/01/2025

Supplemental Project ID: (AMPT) s2749.1; (ATSI) s2749.2

Project Status: Scoping (AMPT)

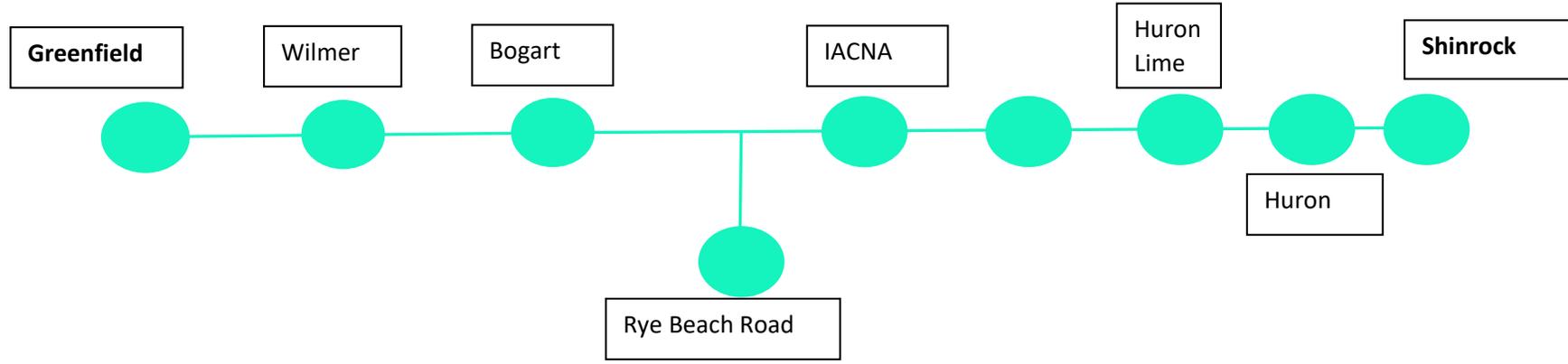
Conceptual (FE)



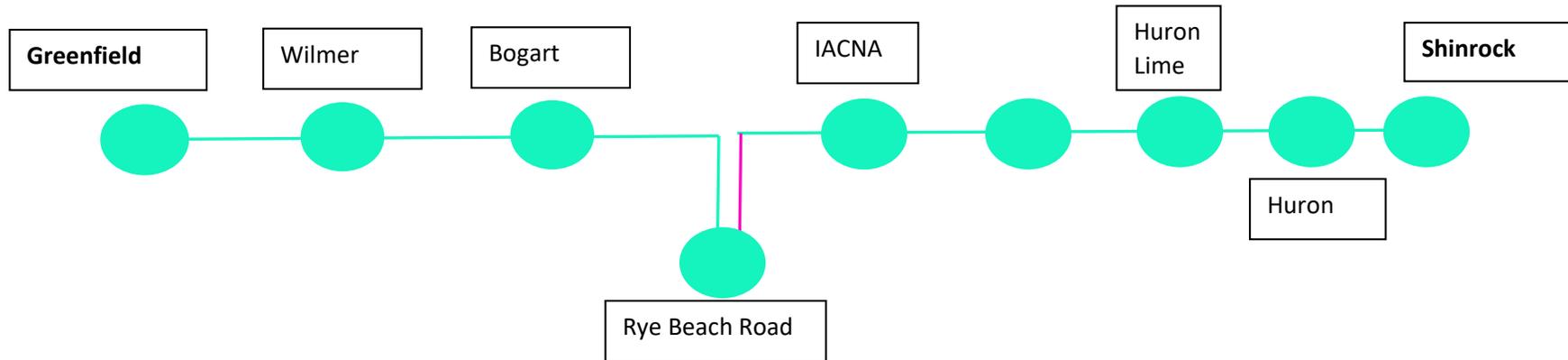
AMPT Projects in ATSI Transmission Zone M3 Process

Rye Beach Road, Greenfield – Shinrock 69 kV line

Existing



Proposed



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

AMPT Projects in ATSI Transmission Zone M3 Process Pioneer, Ohio

Need Number: AMPT-2022-001

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

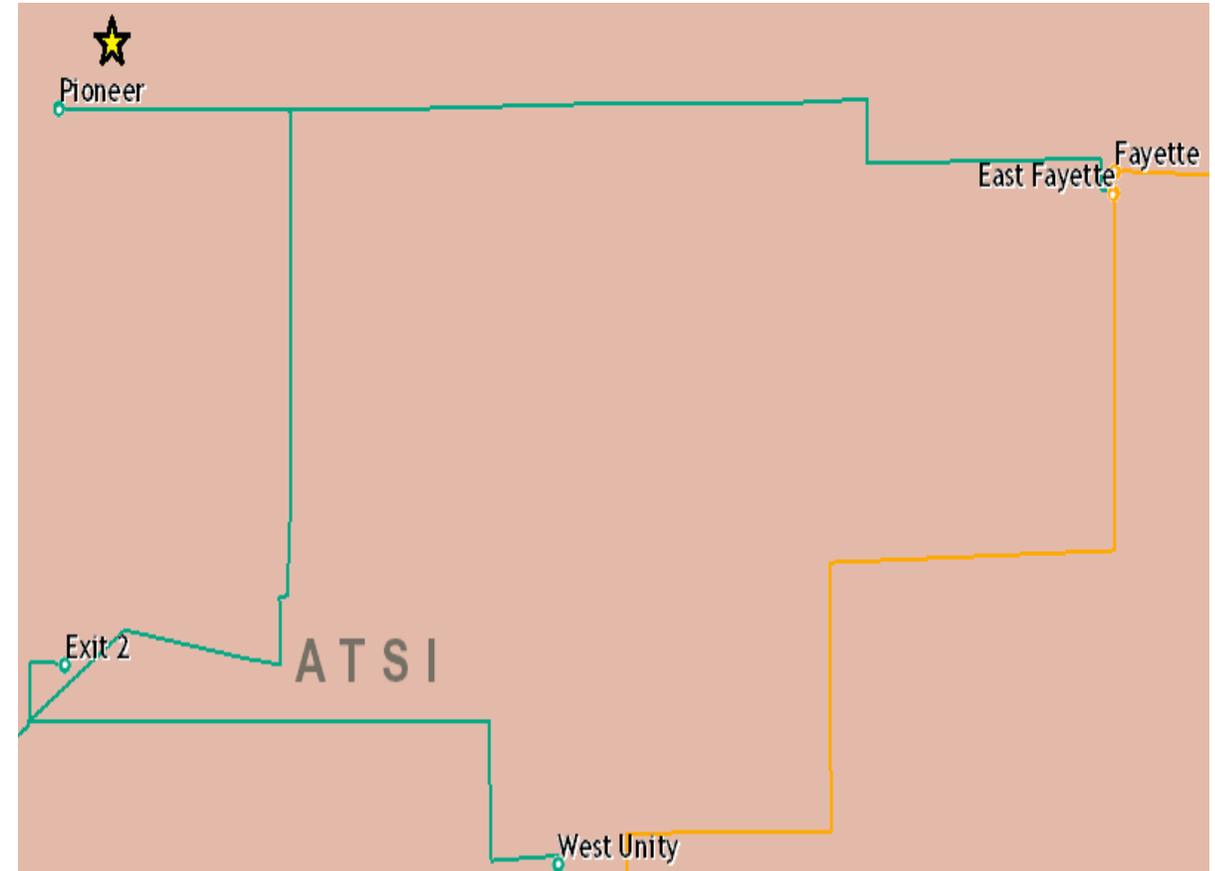
Previously Presented: Solution Meeting – 6/15/2022, Need Meeting – 1/21/2022

Supplemental Project Driver(s): Customer Service

Specific Assumption Reference(s): AMPT Transmission Facilities Interconnection Requirements Document

Problem Statement:

New Customer Connection – The Village of Pioneer has requested a new 69 kV service point near the AMPT tap off ATSI's East Fayette-Exit 2 69 kV line. This request was made to support a new retail customer with an anticipated load of approximately 16 MVA.



AMPT Projects in ATSI Transmission Zone M3 Process Pioneer, OH

Need Number: AMPT-2022-001

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

Supplemental Project Driver(s): Customer Service

Proposed Solution:

AMPT Identified Scope (\$13.2 M)

- Construct a greenfield 69 kV single circuit line for approximately 3 miles using 795 26/7 ACSR conductor and break into the existing AMPT Pioneer Tap off ATSI's East Fayette-Exit 2 69 kV line. Install one (1) 69 kV three-way switch to accommodate the new tap to the existing AMPT line. **(\$4.7 M)**
- Construct a new Kexon 69/12 kV substation. Install four (4) CBs, 21.6 MVAR capacitor bank (split into three (3) 7.2 MVAR blocks), and two (2) 69 kV circuit switchers for two (2) 69/12 kV transformers*. **(\$8.5 M)**

* The 69/12 kV transformers are distribution costs and not included in the identified scope cost.

FE Identified Scope (\$0.25M)

- Provide two (2) 69 kV revenue metering equipment packages for the new Kexon Delivery Point.
- Revise relay settings at East Fayette and Snyder substations.

Alternatives Considered:

- Considering the location of the proposed distribution need by the Village, no other alternative was considered.

Ancillary Benefits:

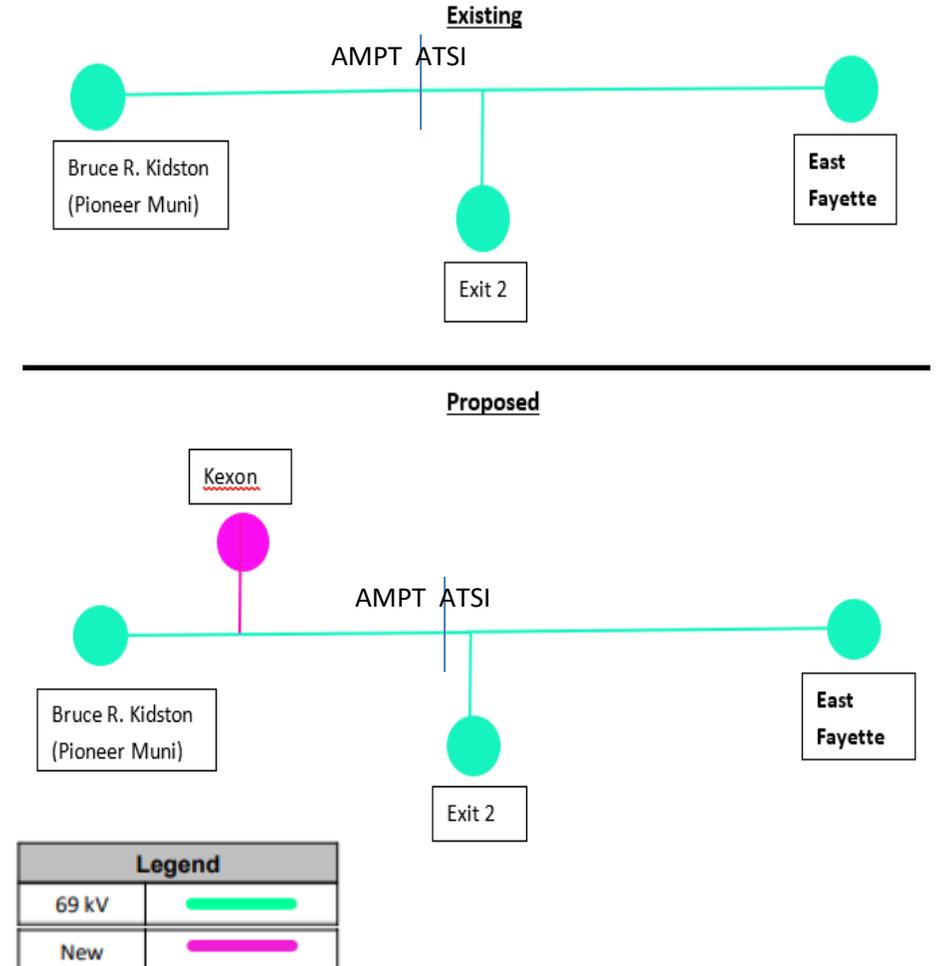
- The capacitor bank provides additional voltage support to alleviate voltage magnitude concerns under certain 69 kV N-1-1 contingencies in the area.

Supplemental Project ID: (AMPT) s2806; (ATSI) s2806.1

Total Estimated Transmission Cost: \$13.45M

Projected In-Service: 10/31/2023

Project Status: Engineering



Revision History

4/14/2022 – V1 – Original version posted to pjm.com (s2671)

9/15/2022 – V2 – Added Rye Beach Rd Project (S2749)

12/1/2022 – V3 Added Pioneer Project (S2806)