

Submission of Supplemental Projects for Inclusion in the Local Plan

Duquesne Light Local Plan - 2024

DLCO Transmission Zone M-3 Process Pittsburgh, PA

Need Number: DLC-2023-002

Process Stage: Submission of Supplemental Project for inclusion in the 2024 Local Plan – 9/6/2024

Previously Presented:

Needs Meeting – 8/18/2023
Solution Meeting – 2/16/2024

Supplemental Project Driver(s):

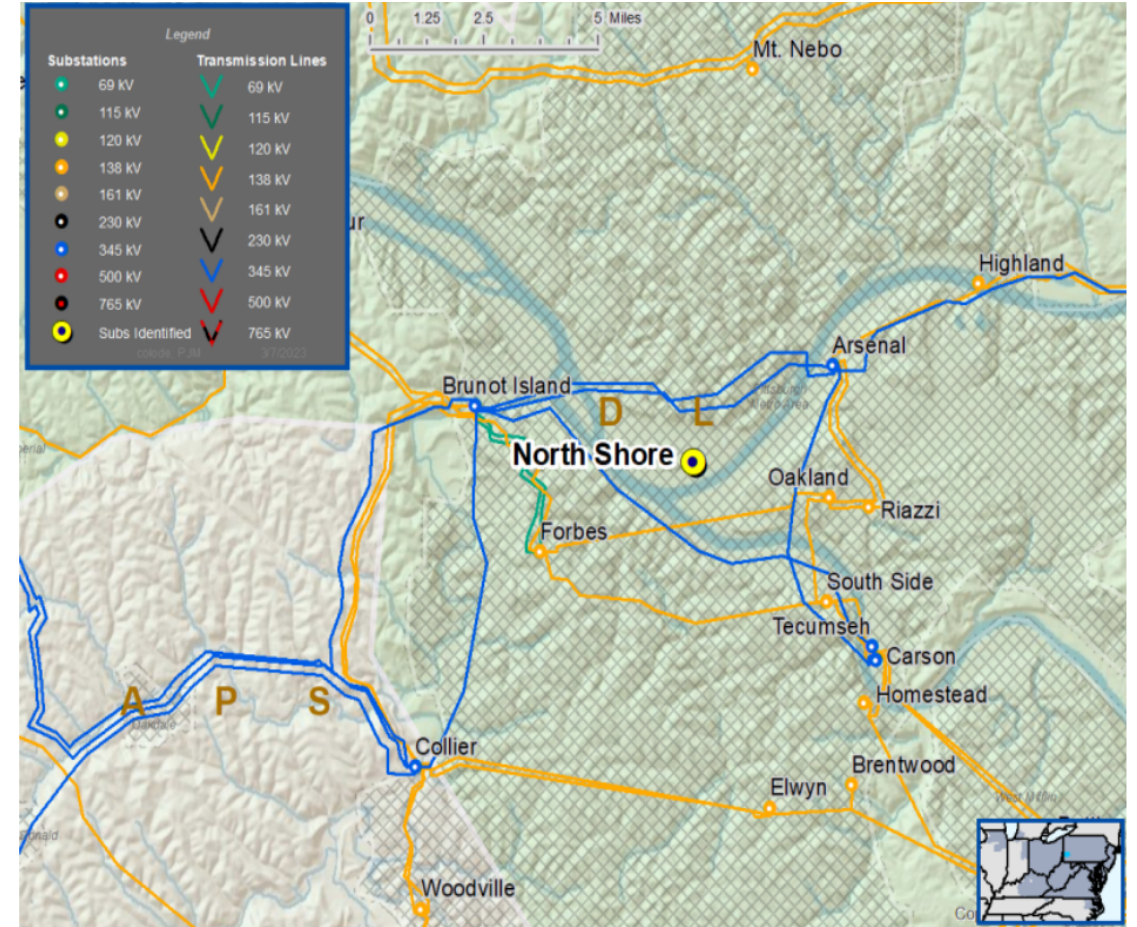
Customer Service

Specific Assumptions Reference:

Slide 9 of the DLC 2024 Local Planning Assumptions.

Problem Statement:

An industrial customer is requesting 20 MW of load at a new location within Pittsburgh’s North Shore area for a construction project. The project is expected to last for approximately 10 years. The customer’s requested in-service date is 1/1/2026.



Need Number: DLC-2023-002

Process Stage: Submission of Supplemental Project for inclusion in the 2024 Local Plan

Solution:

Establish a new substation, Veterans Bridge Substation, in the North Shore neighborhood of Pittsburgh by tapping the existing Brunot Island – Forbes 138 kV underground HPFF transmission line. Veterans Bridge Substation will supply the customer for the duration of the customer’s construction project. Veterans Bridge Substation will contain a single 138 kV breaker and 138/23 kV transformer to serve the customer’s load. Establishing Veterans Bridge Substation will require extending the Brunot Island – Forbes 138 kV 138 kV underground HPFF transmission line by approximately 50 ft.

Estimated Project Cost: \$0 (Project to be funded by interconnecting customer)

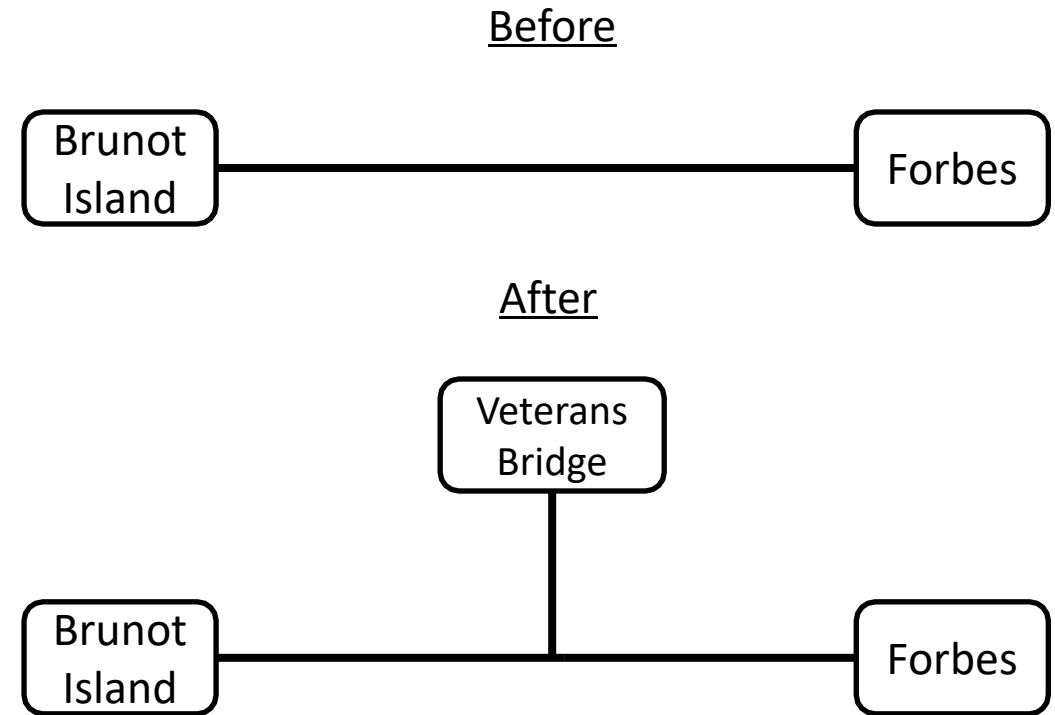
Alternatives Considered:

- 1. Ring Bus Substation** – DLC considered the construction of a ring bus substation in the North Shore neighborhood of Pittsburgh as part of cancelled need DLC-2023-001. This alternative is a viable solution but is not being pursued at this time.

Projected In-Service: 1/31/2026

Project Status: Planning

Supplemental Project ID: S3356.1



Need Number: DLC-2024-001

Process Stage: Submission of Supplemental Project for inclusion in the 2024 Local Plan – 9/6/2024

Previously Presented:

Needs Meeting – 2/16/2024
 Solution Meeting – 3/15/2024

Supplemental Project Driver(s):

Equipment Material Condition, Performance, and Risk

Specific Assumptions Reference:

Slide 6 of the DLC 2024 Local Planning Assumptions.

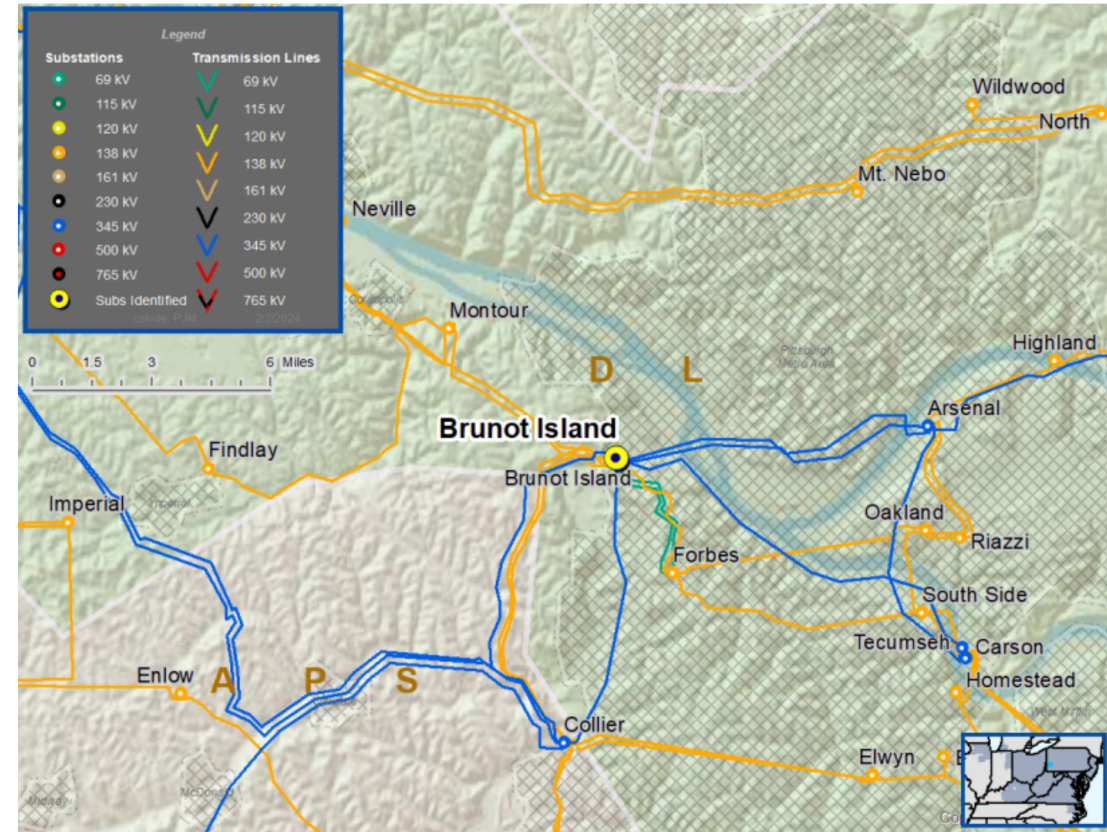
Problem Statement:

At Brunot Island Substation, four 138kV oil circuit breakers have increased failure probability due to:

- Equipment Age (Ages range between 45 – 50 years of age)
- Obsolescence (Spare parts are not readily available)

Ten 138 kV buses and one 69 kV bus at Brunot Island have nonredundant bus relaying schemes with increased failure probability due to:

- Equipment Age (Ages range between 40 – 50 years of age)
- Obsolescence (Spare parts are not readily available)



Need Number: DLC-2024-001

Process Stage: Submission of Supplemental Project for inclusion in the 2024 Local Plan

Solution:

Replace the four aged 138kV breakers and their associated equipment with modern breakers and equipment. Install redundant, secondary microprocessor protection schemes for the ten 138 kV buses and one 69 kV bus that lack redundancy. Replace the aged, existing electromechanical relaying schemes on five 138 kV buses and one 69 kV bus. Note the aged, existing electromechanical relaying schemes on the other five 138 kV buses are not capable of being replaced at this time due to CT limitations on distribution transformers.

Estimated Cost: \$8 M

Ancillary Benefits:

This project will upgrade the fault interrupting capacity of the breakers to 63kA and eliminate several relay failure contingencies at the substation.

Alternatives Considered:

- 1. Maintain existing condition** – Maintaining the existing condition of the equipment does not address the increased failure risk of the aged breakers.
Estimated Cost: N/A

Projected In-Service: June 2025

Project Status: Planning

Supplemental Project ID: S3367.1

DLCO Transmission Zone M-3 Process
Pittsburgh, PA

**All work within existing substation.
Bubble diagram not applicable**

Need Number: DLC-2024-002

Process Stage: Submission of Supplemental Project for inclusion in the 2024 Local Plan -09/11/24

Previously Presented:

Needs Meeting – 3/15/2024

Solution Meeting – 5/17/2024

Supplemental Project Driver(s):

- Customer Service
- Equipment Material Condition, Performance, and Risk

Specific Assumptions Reference:

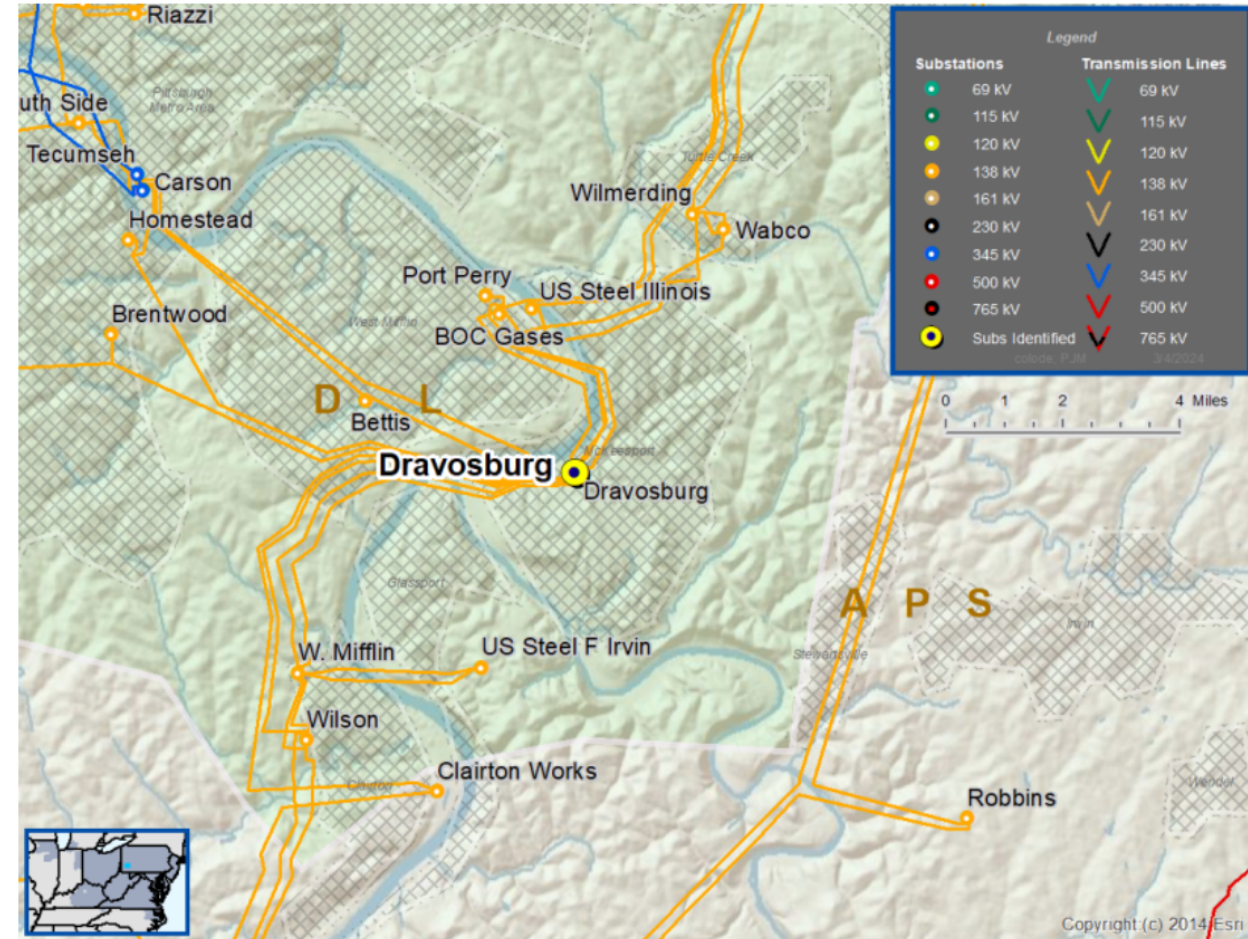
Slides 6 and 9 of the DLC 2024 Local Planning Assumptions.

Problem Statement:

Duquesne Light’s Distribution Planning team has determined that Dravosburg Substation has limited capacity to serve new distribution load due to the size of the station’s existing distribution transformers.

Duquesne Light’s Asset Management team has determined that the Dravosburg #1 and #2 138-69 kV autotransformers have increased failure probability due to:

- Equipment Age (#1 138-69 kV autotransformer age: 64 years, #2 138-69 kV autotransformer age: 44 years)
- Obsolescence (Spare parts are not readily available)



Need Number: DLC-2024-002

Process Stage: Submission of Supplemental Project for inclusion in the 2024 Local Plan -09/11/24

Solution:

Eliminate the 69 kV voltage level from Dravosburg Substation by replacing the two aged 138-69 kV autotransformers and the station’s existing 69-23 kV transformers with two new 138-23 kV transformers. This elimination will require an extension of the 138 kV bus, the addition of 3 new 138 kV breakers, and the removal of the 69 kV bus and associated breakers.

Estimated Cost: \$8.5 M

Ancillary Benefits:

The proposed solution removes the last 69-23 kV transformers from the DLC system.

Alternatives Considered:

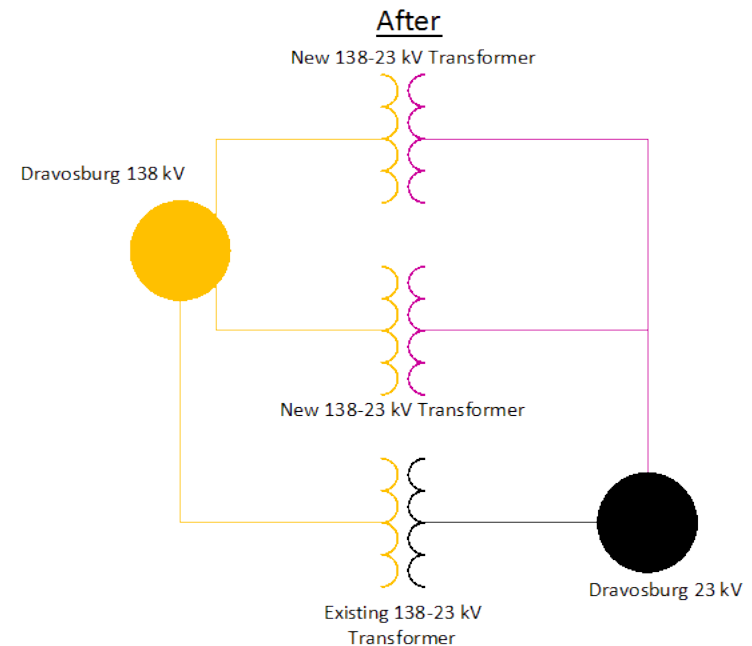
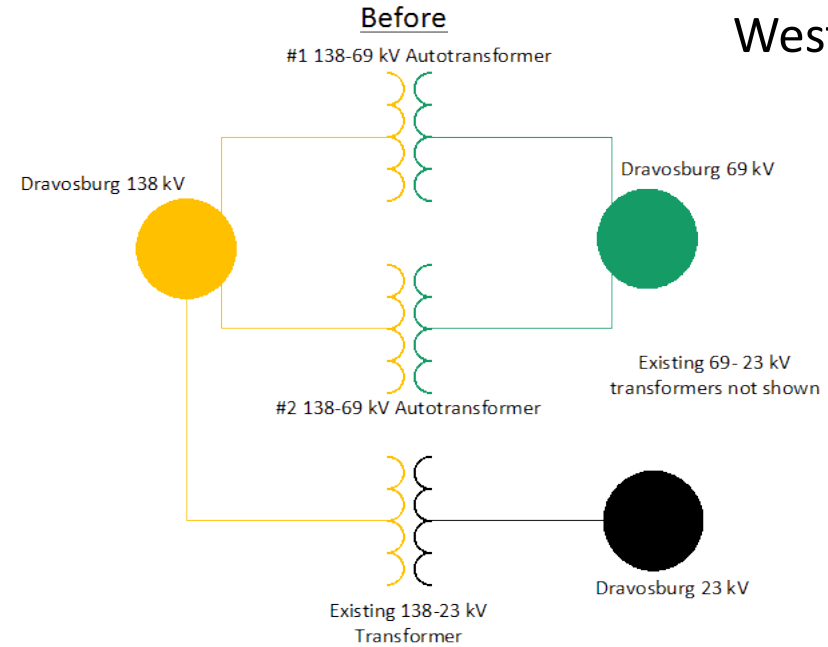
- 1. Maintain existing condition** – Maintaining the existing condition of the equipment does not address the increased failure risk of the aged transformers and does not address Dravosburg Substation’s limited capacity to serve new distribution load . Estimated Cost: N/A

Projected In-Service: 1st Transformer June 2025, 2nd transformer December 2027

Project Status: Planning

Supplemental Project ID: S3466.1

DLCO Transmission Zone M-3 Process West Mifflin, PA



Legend	
138 kV	
69 kV	
23 kV	
New	

Revision History:

09/06/2024 – V1 Added Slides #1-5, S3356.1 and S3367.1

09/11/2024 – V2 Added s3466.1