EVERSOURCE

Supplement Authorization Form

Project Title: W Main St Wtby Replace Duct Bank	Project Number: CD02176
Date Prepared: 01/21/2025	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** UNDERGROUND STRUCTURE ISSUE
Initiating Organization: Distribution	**Project Type:** Specific
Project DDE: [redacted]	**Capital Investment part of 5-year plan?** Yes
Project Manager: [redacted]	**Emergency Related Request?** Yes
Project Sponsor: [redacted]	**Facility Type** (check all that apply): ☐ PTF ☐ non-PTF ☒ Distribution ☐ N/A (General Plant)
Current Authorized Amount: $1,121K	**Approved In-Service Date:** 12/31/2025
Supplement Request: $724K	**Estimated In-Service Date: 12/31/2025**
Total Capital Request ($): $1,845K	**Authorization Type:** Supplement Request
SAF Preparer: [redacted]	**Reason:** Scope Change

1. Project Background

The current authorized amount for CD02176 is **$1,121K.** A supplemental authorization of **$724K** is requested to meet the total capital request of **$1,845K.**

The original project was presented as follows:

This project is being established to cover the costs associated with [redacted]

2. Supplement Justification Overview

CD02176 encountered significant increases in costs in the categories of outside services, materials, and overhead costs. This project was approved for partial funding on 3/30/2023 and approved for full funding on 11/21/2024. For full funding approval, additional costs came from plan and profile drawings completed by vendor (CHA), preparation of the required CDOT permit & development of traffic detour plans, and test pitting being required for replacement of sidewalk infrastructure.

3. Supplement Justification Detail

[redacted]

4. Supplement Cost Summary (Project Total)

Capital Costs	To Date Spend (2023 – 2024)	Prior Authorized	Supplemental Request	Total Request
Internal Labor and Construction	11.7	75.0	8.9	83.9
Outside Services	73.7	289.2	237.6	526.7
Materials	27.7	102.3	95.5	197.8
Removals	12.6	142.4	-39.9	102.5
Risk and Contingency	0.0	0.0	113.5	113.5
Other	0.1	0.8	0.0	0.8
Subtotal	**125.7**	**609.7**	**415.7**	**1,025.3**
Indirect Capital Costs	**To Date Spend**	**Prior Authorized**	**Supplemental Request**	**Total Request**
Indirects/Overheads (including benefits)	164.7	507.4	305.8	813.2
Capitalized interest or AFUDC, if any	6.8	4.0	2.8	6.8
Subtotal	**171.5**	**511.4**	**308.6**	**820.1**
Total Capital Costs (Gross)	**297.3**	**1,121.1**	**724.3**	**1,845.4**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Project Costs (Net of Reimbursement)	**297.3**	**1,121.1**	**724.3**	**1,845.4**

Please note that the "To Date Spend" column in the table above refers to funds spent through year 2024. This supplemental PAF request includes the total projected spending through 2025, which is summarized in a full yearly breakout in section 5.

5. New Total Request by Year (if applicable)

Capital Costs	2023 Actual	2024 Actual	2025 Estimate	TOTAL
Internal Labor & Equipment	1.7	10.1	72.2	83.9
Outside Services	10.5	63.1	453.1	526.7
Materials	4.0	23.7	170.2	197.8
Removals	1.8	10.8	90.0	102.5
Risk and Contingency	0.0	0.0	113.5	113.5
Other	0.0	0.1	0.7	0.8
SUBTOTAL Direct Cost	**18.0**	**107.8**	**899.6**	**1,025.3**
Indirects / Overheads	12.2	152.5	648.5	813.2
AFUDC	0.1	6.7	0.0	6.8
SUBTOTAL Indirect Cost	**12.3**	**159.2**	**648.5**	**820.1**
TOTAL Capital Request	**30.3**	**267.0**	**1,548.1**	**1,845.4**
Less Total Customer Contribution	0.0	0.0	0.0	**0.0**
TOTAL Project Cost	**30.3**	**267.0**	**1,548.1**	**1,845.4**

6. Lessons Learned

N/A

Full Funding PAF:

Project Title: W Main St Wtby Replace Duct Bank	**Project Number: CD02176**
Date Prepared: 11/21/2024	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** UNDERGROUND STRUCTURE ISSUE
Project Initiator: [redacted]	**Project Type:** Specific
Initiating Organization: Distribution	**Capital Investment part of original Op Plan:** Yes
Project Manager: [redacted]	**Emergency Related Request?** Yes
Project Sponsor: [redacted]	**Facility Type** (check all that apply): ☐ PTF ☐ non-PTF ☒ Distribution ☐ N/A (General Plant)
Required in service date: 12/31/2025	
Total Capital Request: $1.12M	**Authorization Type:** Full Funding

1. Executive Summary

Full funding is being requested for this project at a cost of $1.12M which is 205% of the partial funding capital estimate of $546K. CD02176 was partially approved on 3/30/2023. The increase is driven by multiple factors:

- The partial funding estimate was prepared using legacy unit costs, which are approximately 30% lower than the estimates used today. This amounts to a partial funding estimate that would instead total $723,505, which results in a revised variance differential of 155% relative to this full funding request.
- Design (plan and profile) drawings completed by vendor (CHA) and drawings finalized by Eversource.
- Design of the bridge crossing, which included preparation of the required CDOT permit and development of traffic detour plans.
- Test pitting conducted by Stone Construction resulted in additional construction costs to alleviate underground obstacles and replacement of sidewalk infrastructure.

The original project was presented as follows:

- [redacted]

[redacted]

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2023 Actual	2024 Actual	2025 Estimate	Total
Internal Labor and Construction Equipment	2.6	14.8	57.6	75.0
Outside Services	10.0	57.1	222.1	289.2
Materials	3.5	20.2	78.5	102.3
Removals	1.8	10.3	48.9	61.0
Risk and Contingency	0.0	0.0	81.5	81.5
Other	0.0	0.2	0.6	0.8
Subtotal	**18.0**	**102.6**	**489.1**	**609.7**
Indirect Capital Costs	**2023 Actual**	**2024 Actual**	**2025 Estimate**	**Total**
Indirects/Overheads (including benefits)	12.2	144.3	350.8	507.4
Capitalized interest or AFUDC, if any	0.1	4.0	0.0	4.0
Subtotal	**12.3**	**148.3**	**350.8**	**511.4**
Total Capital Costs (Gross)	**30.3**	**250.8**	**840.0**	**1,121.1**
Project Costs (Net of Reimbursement)	**30.3**	**250.8**	**840.0**	**1,121.1**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

[redacted]

b. Project Need

[redacted]

c. Project Scope

[redacted]

Major Material:

1,140’ of 750 CU EPR 15kV cable

380’ of 4/0 4CT 600V cable.

4. Alternatives Considered

Project is compliance obligation; therefore no alternatives were considered.

Due to the nature of this project, there are no reasonable alternatives. This duct bank is on a river crossing of the Naugatuck River, of which there are very few in Waterbury. As such, rerouting the feeders to avoid this river crossing would be impractical.

This work is required to address existing collapsed underground ducts, which include two feeders that serve the local hospital.

5. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Partial Approval	3/30/2023
100% Engineering Completion	5/2023
Construction Start	11/15/2024
In Service Date	12/31/2025

6. Regulatory Decisions

N/A

7. Codes and Standards

N/A

8. Risk and Contingencies

Risk Mitigation:

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2025	Medium	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Customer Permission / Siting Council / Municipal approvals	2025	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2025	High	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Internal engineering resources not available to perform the work.	2024	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2025	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2025	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2025	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods.

Technological risks involving integration of new technology	2025	Low	Before use of new technology ensure support of standards and manufacturer. Schedule project to accommodate for extra time or ensure new technology is not on the critical path.
Wetlands / Environmentally sensitive area	2025	Low	Use of mats and specialty equipment, only work during certain times of the year.

9. References

N/A

10. Attachments (One Line Diagrams, Images, etc.)

Attachment	Included in Submittal?
A. Project Map	*YES*
B. Project Needs Statement	*YES*
C. Partial Funding PAF Form	*YES*

Attachment A: Project Map



Attachment B: Project Needs Statement

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02176
W Main St Wtby Repl Duct Bank

Work Classification

Category: Line
Type: REL1
Type Desc: UNDERGROUND STRUCTURE ISSUE
Work Type:

Ownership / Management

AWC: Waterbury
Statewide: No
Owner [redacted]
Manager

Project Information

Status: Draft
SPS #:
AIS Score:
Associated Projects:
Assignment ID:
Patrol Find ID:

Budget Summary - Preferred Option

Repl Duct bank

2024 ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
1	Repl Duct Bank	Prelim	0	24%	$556,105	$556,105
				2024 Total:	**$556,105**	**$556,105**
				Total Project:	**$556,105**	**$556,105**

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02176
W Main St Wtby Repl Duct Bank

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	Repl Duct bank	1	$556,105	$0	100%	$0.00	$0.00	☑

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	Repl Duct Bank	$556,105			$0.00	$0.00

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02176

W Main St Wtby Repl Duct Bank

Background / Scope

Issue:

[redacted]

Project Description:

[redacted]

Other Considerations:

Revision / ACT Comments:

If we don't do this project, what will happen?

[redacted]

Environmental

Water Pollution: No Change Soil Contamination: No Change Natural Habitats: No Change

Alternatives considered based on Environmental Impact or Description of Aspects Oil Spill Risks Considered? ☐

Safety Concerns With This Project? ☐

Explain:

External Stakeholders

Customer Impact / Involvement

Cust. Impacted: Approx. Pole Count (NU):

Crit. Cust. Impacted [redacted] Approx. Pole Count (Other):

Adjoining Property Owner Consent Required: ☐ Town Hearing Required: ☐

Other Utility Pole Custodian Area: ☐ Easement Required: ☐

State Highway Permit Required: ☐

Relocation / New Service

New Srvc. Contact: Requestor Type:

Customer Type: State Highway Project #:

Request Number: Route #:

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02176
W Main St Wtby Repl Duct Bank

Design Alternative CD02176-01

General Information

Segment: 1 - Repl Duct Bank
Status: Prelim Design Submitted
Segment Type: UG - OBSOLESCENCE
Town: WATERBURY
Budget Year: 2024
Work Type: Other
Trimming Required: ☐
In Service Date: 12/31/2024
Description: [redacted]

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed
1	[redacted]		

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02176
W Main St Wtby Repl Duct Bank

Design Alternative CD02176-01

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	24.00%
SubTotal:	$448,472
Contingency Amount:	$107,633
Estimate:	$556,105
Reimbursement:	$0
Net Amount:	**$556,105**

Description:

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Complex	16-ALL16	$21,072.00
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18	$53,000.00
UG CABLE UG - Cable Removal - all cables	16-UG117	$28,800.00
CONDUIT UG-Ductline-up to 12 duct - Traveled Way / Paved	16-UG137	$112,608.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu [redacted] 750 CU EPR, 3 @ 380' each	16-UG114B	$109,440.00
OTHER OTHER 20% adder for contacr labor & extra 10% for UG duct work	16-ALL14	$106,000.00
OTHER OTHER manhole cleanng: 2 @ $1K each.	16-ALL14	$2,000.00
UG CABLE UG - Copper Secondary in Conduit st lt cable	16-UG153	$15,552.00

[redacted]

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD02176

W Main St Wtby Repl Duct Bank

Design Alternative CD02176-01

Associated / Impacted Devices

Status	Type / SysID	Street / Cross St	Structure / Town	Circuit	Map	Cust	Notes
Existing	[redacted]						
Existing							
Existing							

Reliability Projection

Title:

Outage Start Date: 1/1/2007 Outage End Date: 2/8/2023 Years History: 16.12

[redacted]

Attachment C: Partial Funding PAF Form

Operations Project Authorization Form

Project Title: W Main St Wtby Replace Duct Bank	**Project Number: 0**
Date Prepared: 02/13/2023	**Company:** Eversource CT
Organization: Electric Field Operations	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category:** UNDERGROUND STRUCTURE ISSUE
Project Manager [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Capital Investment part of original Operating Plan:** No
Estimated in service date: 12/31/2023	**Emergency Related Request?** Yes
Eng./Constr. Resources Budgeted? No	**Facility Type** (check all that apply)**:** ☐ PTF ☐ non-PTF ☒ Distribution
Total Gross Capital Request: $546K	**Authorization Type:** Initial Funding

Executive Summary

[redacted]

[redacted]

[redacted]

Project Costs Summary

Note: Dollar values are in thousands

Capital Costs	Year 2023	Total
Direct Capital Costs		
Internal Labor and Construction Equipment	$19	$19
Outside Services	$244	$244
Materials	$31	$31
Removals	$79	$79
Risk and Contingency	($28)	($28)
Other	$0	$0
Subtotal – Direct Costs	**$345**	**$345**
Indirect Capital Costs		
Indirect/Overheads (including benefits)	$199	$199
Capitalized interest or AFUDC, if any	$2	$2
Subtotal – Indirect Costs	**$201**	**$201**
Total Gross Capital Costs	**$546**	**$546**
Customer Contribution	**$0**	**$0**
Total Net Capital Project Costs	**$546**	**$546**

Technical Justification:

Project Need, Objective and Justification:

[redacted]

Project Scope:

- [redacted]
- [redacted]
- [redacted]

Major Material:

- 1,140’ of 750 CU EPR 15kV cable
- 380’ of 4/0 4CT 600V cable.

Background:

[redacted]

[redacted]

[redacted]

Alternatives Considered:

Were alternative solutions considered/applicable? Include any cost/benefit analysis.

Project is a compliance obligation - no alternatives considered - no financial benefit

Due to the nature of this project, there are no reasonable alternatives. [redacted].

Regulatory Approvals:

Are Regulatory body approvals needed for the project?

No

Project Schedule

Milestone/Phase Name	Estimated Date
100% Engineering Completion	May 2023
Full Funding Authorization	June 2023
Construction Start	September 2023
In Service Date	December 2023

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2023	Medium	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Customer Permission / Siting Council / Municipal approvals	2023	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2023	High	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
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Storm delays	2023	Low	If storm activity delays work, we may be forced to use external resources.

System abnormal configuration	2023	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods.
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Wetlands / Environmentally sensitive area	2023	Low	Use of mats and specialty equipment, only work during certain times of the year.

References

None

Appendices (One-Line Diagrams, Images, etc.)

CD02176 Project Map.pdf

CD02176_project_needs_statement_202