EVERSOURCE

Project Approval Form

Project Title: [redacted] PILC Repl.	**Project Number: CD02359**
Date Prepared: 07/26/2024	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** UG CABLE & EQUIPMNT REPLACEMNT
Project Initiator: [redacted]	**Project Type:** Specific
Initiating Organization: Distribution	**Capital Investment part of original Op Plan:** Yes
Project Manager: [redacted]	**Emergency Related Request?** No
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: $1,730.8K	**Authorization Type:** Full Funding

1. Executive Summary

Full funding is being requested for this project at a cost of **$1,730.8K** which is 62.2% of the partial funding capital estimate of $2,783K. CD02359 was partially approved on 2/1/2024. There is no scope change on the project. The variance between the full funding and partial funding estimate is due to the following:

- The partial funding estimate assumed contractors would be performing the work, but this project will be done by internal resources. This equates to a $622,238 decrease relative to the partial funding estimate.
- The partial funding estimate included $14,000 in traffic control, which is now an indirect cost and should not be in the estimate.
- The partial funding estimate included additional costs for removal of cable that were not required. This totals to a reduction of $271,258.
- Other additional costs are due to indirect overhead costs associated with the project.

The Original Project was presented as follows:

- [redacted]
- *Project Location*
  - *Division: Central*
  - *District: Hartford*
  - *City: Hartford*

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2025	Total
Direct Capital Costs		
Internal Labor and Construction Equipment	132.1	132.1
Outside Services	120.9	120.9
Materials	420.0	420.0
Removals	184.7	184.7
Risk and Contingency	157.3	157.3
Other	0.0	0.0
Subtotal – Direct Costs	**1,015.0**	**1,015.0**
Indirect Capital Costs		
Indirect/Overheads (including benefits)	715.8	715.8
Capitalized interest or AFUDC, if any	0.0	0.0
Subtotal – Indirect Costs	**715.8**	**715.8**
Total Gross Capital Costs	**1,730.8**	**1,730.8**
Customer Contribution	**0.0**	**0.0**
Total Net Capital Project Costs	**1,730.8**	**1,730.8**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

PILC cable was used extensively in the urban underground electrical systems that were built in the early/mid 1900s. This cable is now reaching the end of its useful life, and cable failures cause feeder lockouts which can impact customer reliability and satisfaction.

Eversource CT established a program in 2018 to proactively replace PILC cable. Targeted cable replacement is prioritized based on load, outage history and reliability.

b. Project Need

[redacted]

Town	Feeder	Report Number	Date	Failure Type
[redacted]				

c. Project Scope

This project consists of the following underground aging infrastructure replacement:

- [redacted]
- [redacted]

Major Material:

- 10,433’ of 500 kcmil 25kV CU EPR cable

Note: the cable required amounts shown above are greater than the amount being replaced to account for extra cable needed in the manholes for racking.

4. Alternatives Considered

Replacement of PILC cable is the only feasible option to mitigate the underground aging infrastructure and reliability events on the Eversource Distribution Circuits which contain PILC. PILC cable is Eversource’s most mature asset and has reached the end of its useful life. It is not only prone to failure but requires longer repair time.

The alternative proposed (Option 2) is to [redacted] Therefore Option 2 was selected as the preferred option.

Project Option Comparison

[redacted]	

Estimate Type	Partial	Full
Total Cost	$2,697k	$1,730K
Capital Cost	$2,615k	$1,781k
Expense Cost	$82K	$51.9K
Cost / MVA added	$1,822K	$1,168K
Preferred option		X

5. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Preliminary Approval	November 2023
Detail Design Engineering	October 2024
Construction Start	January 2025
Construction Complete	December 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.
Internal construction resources not available to perform the work.	2025	Medium	Use competitive bidding to ensure lowest outside labor cost. 30% adder added to estimate for contractor labor.
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.
System abnormal configuration	2025	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods. Selected option 2 to avoid additional cable cutovers.

9. References

N/A

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

Attachment	Included in Submittal?
A1. Partial Funding PAF Form	*YES*
A. Cost Summary	*YES*
B. Load Sheets	*YES*
C. Geographic Map	*YES*
D. Cable Data	*YES*

Attachment A1: Partial Funding PAF Form

Project Title: [redacted] **PILC Repl.**	**Project Number: CD02359**
Date Prepared: 10/25/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** UG Cable & Equipment Replacement
Project Initiator: TRC	**Project Type:** Specific
Initiating Organization: Distribution	**Capital Investment part of original Op Plan:** Yes
Project Manager: [redacted]	**Emergency Related Request?** No
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: $2,783K	**Authorization Type:** Partial Funding

1. Executive Summary

Project CD02359 is being established to replace the remaining 9,598' of paper-insulated lead covered (PILC) cable [redacted]. This project is part of an overall strategy to address poor performing PILC cable in the underground distribution system.

This project consists of the following:

- [redacted]
- [redacted]

- Project Location
  - Division: Central
  - District: Hartford
  - City: Hartford

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2025	Total
Internal Labor and Construction Equipment	143.9	143.9
Outside Services	682.3	682.3
Materials	647.8	647.8
Removals	468.4	468.4
Other	12.2	12.2
Risk and Contingency	0.0	0.0
Subtotal	**1,954.6**	**1,954.6**

Indirect Capital Costs	2025	Total
Indirects/Overheads (including benefits)	742.6	742.6
Capitalized interest or AFUDC, if any	86.1	86.1
Subtotal	**828.7**	**828.7**

Total Capital Costs (Gross)	**2,783.3**	**2,783.3**
Less Total Customer Contribution	**0.0**	**0.0**
Project Costs (Net)	**2,783.3**	**2,783.3**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

PILC cable was used extensively in the urban underground electrical systems that were built in the early/mid 1900s. This cable is now reaching the end of its useful life, and cable failures cause feeder lockouts which can impact customer reliability and satisfaction.

Eversource CT established a program in 2018 to proactively replace PILC cable. Targeted cable replacement is prioritized based on load, outage history and reliability.

b. Project Need

[redacted]

Town	Feeder	Report Number	Date	Failure Type
[redacted]				

c. Project Scope

This project consists of the following underground aging infrastructure replacement:

- [redacted]

[redacted]

Major Material:

- 10,433' of 500 kcmil 25kV CU EPR cable

Note: the cable required amounts shown above are greater than the amount being replaced to account for extra cable needed in the manholes for racking.

4. Alternatives Considered

Replacement of PILC cable is the only feasible option to mitigate the underground aging infrastructure and reliability events on the Eversource Distribution Circuits which contain PILC. PILC cable is Eversource's most mature asset and has reached the end of its useful life. It is not only prone to failure but requires longer repair time.

[redacted]

Project Option Comparison

	Option
[redacted]	

[redacted]

Total Cost	$2,697k	$2,871k
Capital Cost	$2,615k	$2,783k
Expense Cost	$82K	$88K
Cost / MVA added	$1,822K	$1,940
Preferred option		X

5. Project Schedule

Milestone/Phase Name	Estimated Date
Preliminary Approval	November2023
Detail Design Engineering	October 2024
Construction Start	January 2025
Construction Complete	December 2025

6. Regulatory Decisions

N/A

7. Codes and Standards

N/A

8. Risk and Contingencies

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.
Internal construction resources not available to perform the work.	2025	Medium	Use competitive bidding to ensure lowest outside labor cost. 30% adder added to estimate for contractor labor.
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.
System abnormal configuration	2025	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods. Selected option 2 to avoid additional cable cutovers.

9. References

References
1. N/A

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

Attachment	Included in Submittal?
A. Cost Summary	*YES*
B. Load Sheets	*YES*
C. Geographic Map	*YES*
D. Cable Data	*YES*

Attachment A: Cost Summary. Option 1:

Connecticut Light & Power
A Northeast Utilities Company

Project Design Alternative: 1
Project: CD02359 - [redacted]

Design Alternative CD02359-01

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	28.00%
SubTotal:	$2,107,348
Contingency Amount:	$590,057
Estimate:	$2,697,405
Reimbursement:	$0
Net Amount:	**$2,697,405**

Description: Option 1

Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING Network	23-ALL15		$36,526.88
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	23-ALL18		$15,000.00
UG CABLE DB/UG - 350/500 - 3-1/C (3ph) Cu	23-UG114		$868,427.04
OTHER OTHER 30% contractor adder	23-ALL14		$584,698.00
OTHER OTHER Additional cost for PILC cable removal	23-ALL14		$249,548.00
OTHER OTHER Cleaning MHs and rotting ducts, $1500 per location	23-ALL14		$60,000.00
OTHER OTHER Inspect MHs for Eng. - 28 Locations, $1200 per location	23-ALL14		$33,600.00
OTHER OTHER Mechanicl H Splice - $5000 each	23-ALL14		$10,000.00
UG CABLE UG - Cable Removal - all cables PILC cable removal	23-UG117		$249,548.00

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Option 2:

Connecticut Light & Power
A Northeast Utilities Company

Project Design Alternative: 2

Project: CD02359 - [redacted] PILC Cable Repl.

Design Alternative CD02359-02

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	28.00%
SubTotal:	$2,242,649
Contingency Amount:	$627,942
Estimate:	$2,870,590
Reimbursement:	$0
Net Amount:	**$2,870,590**

Description: Option 2

Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING Network	23-ALL15		$36,526.88
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	23-ALL18		$14,000.00
UG CABLE DB/UG - 350/500 - 3-1/C (3ph) Cu	23-UG114		$943,977.84
OTHER OTHER 30% Contractor adder	23-ALL14		$622,238.00
OTHER OTHER Additional cost for PILC cable removal	23-ALL14		$249,548.00
OTHER OTHER Cleaning MHs and rotting ducts, $1500 per location	23-ALL14		$61,500.00
UG CABLE UG - Cable Removal - all cables EPR cable removal	23-UG117		$21,710.00
OTHER OTHER Inspect MHs for Eng. - 28 locations, $1200 per location	23-ALL14		$33,600.00
OTHER OTHER Mechanical H Splice - $5000 eacg	23-ALL14		$10,000.00

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Attachment B Load Sheets:

Current Load Sheet:

Circuit/Zone	S/S Bus	Load Amps	Normal			Emergency		
			Rating	% of	Limiting Factor	Rating	% of	Limiting Factor
[redacted]								

Proposed Load Sheet Option 1 & 2:

Circuit/Zone	S/S Bus	Load Amps	Normal			Emergency		
			Rating	% of Rating	Limiting Factor	Rating	% of Rating	Limiting Factor
[redacted]								

Attachment C Project Maps:

Existing:



Option 1:



Option 2:

