EVERSOURCE

Project Approval Form

Project Title: [redacted] **P3 Remediation**	**Project Number: CD01850**
Date Prepared: 09/15/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** RIGHT OF WAY LINES
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: 12/31/2023	
Total Capital Request: $720.8K	**Authorization Type:** Full Funding

1. Executive Summary

- Project CD01850 – [redacted]5 P3 Remediation, was established to cover the costs associated with replacement of Priority 3 poles in the [redacted]
- Eversource completed drone patrols in November 2021 of all distribution ROWs and categorized all findings into five priority levels: P1, P2, P3, P4, and P5.
- P1 = poles in the worst condition; P5 = poles in the best condition.
- No P1 or P2 poles were identified in ROW 005.
- Eight P3 poles were identified in ROW 005
- Project Location
  - Division: Central
  - District: Hartford AWC
  - City: East Hartford

- The Partial Funding estimate of $284.6K was approved November 2021.
- A change in scope increased the actual cost to $720.8K. Project completed May 2023.
- The scope change included replacing 21 poles in the ROW with steel poles, installation of two Gang Operated Air Break switches (GOABs), and caisson pole foundations.
- The reason for the change in scope was due to the linemen having to mat the length of the ROW to replace the 8 poles. Based on the dollars of the matting and potentially driving by the remaining poles, it was determined to replace the additional poles to avoid having to mat the ROW again in the future.

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	Year 2023	Total
Direct Capital Costs	26.8	26.8
Internal Labor and Construction Equipment	234.2	234.2
Outside Services	158.4	158.4
Materials	53.6	53.6
Removals	14.1	14.1
Risk and Contingency	0.1	0.1
Other	**487.3**	**487.3**
Subtotal – Direct Costs		
Indirect Capital Costs		
Indirect/Overheads (including benefits)	228.5	228.5
Capitalized interest or AFUDC, if any	5.0	5.0
Subtotal – Indirect Costs	**233.5**	**233.5**
Total Gross Capital Costs	**720.8**	**720.8**
Customer Contribution		
Total Net Capital Project Costs	**720.8**	**720.8**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

- [redacted] has a total of 25 poles; eight are P3 poles, and two P4 poles. This project originally called to replace the eight P3 poles only but additional poles were replaced since matting was required throughout the ROW.

b. Project Need

- The need for this project was to replace poles in the ROW that were identified in P3 condition.

c. Project Scope

- Replace 21 structures in [redacted] with steel poles.

4. Alternatives Considered

Project Option Comparison

Design Criteria	Option [redacted]	
Authorization Type	Full	Partial
Capital Cost	$720.8K	$1,198K
Expense Cost	$16.6K	$119K
Total Cost	$737.4K	$1,317K
Preferred option	X	

Option 2 was not selected as the ROW runs along I-84 where no tree conditions exist.

5. Project Schedule

Milestone/Phase Name	Estimated Date
Partial Approval	Nov 2021
100% Detailed Engineering Completion	Mar 2022
Fully Funded	Sep 2023
Construction Start	April 2023
In Service Date	May 2023

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

Attachment	Included in Submittal?
A. Cost Estimate	*YES*
B. P6 Schedule	*NO*
C. Geographic Map	*YES*
D. System and Station One-Lines	*YES*
E. Partial Funding PAF	*YES*

Attachment A. Original Partial Cost Estimate

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	28.00%
SubTotal:	$222,350
Contingency Amount:	$62,258
Estimate:	$284,607
Reimbursement:	$0
Net Amount:	**$284,607**
Description:	

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	[redacted]		$7,019.20
POLE OH - POLE - 3ph (CL&P custodian)	16-OH14			$37,408.00
TREE OH - SYSTEM RESILENCY Tree Trimming - Backbone	16-OH62			$13,184.00
TRAFFIC OH/DB/UG - Traffic Control - Police Officer 2 Officers for 2 Days	16-ALL18			$4,000.00
OTHER OTHER Additional 20% contingency for ROW	16-ALL14			$37,000.00
POLETOP OH - Replace wood xarm with composite xarm - 3ph Additional Crossarms for 4 over 2 construction.	16-OH17A			$11,238.40
OTHER OTHER Matting: 250 mats for various locations, priced at $450/mat	16-ALL14			$112,500.00

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Specific Project Proposal - Project #: CD01850

[redacted] P3 Remediation

Work Classification

Category: Line
Type: SRRL
Type Desc: RIGHT OF WAY LINES
Work Type:

Ownership / Management

AWC: Hartford
Statewide: No
Owner [redacted]
Manager

Project Information

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

Budget Summary - Preferred Option

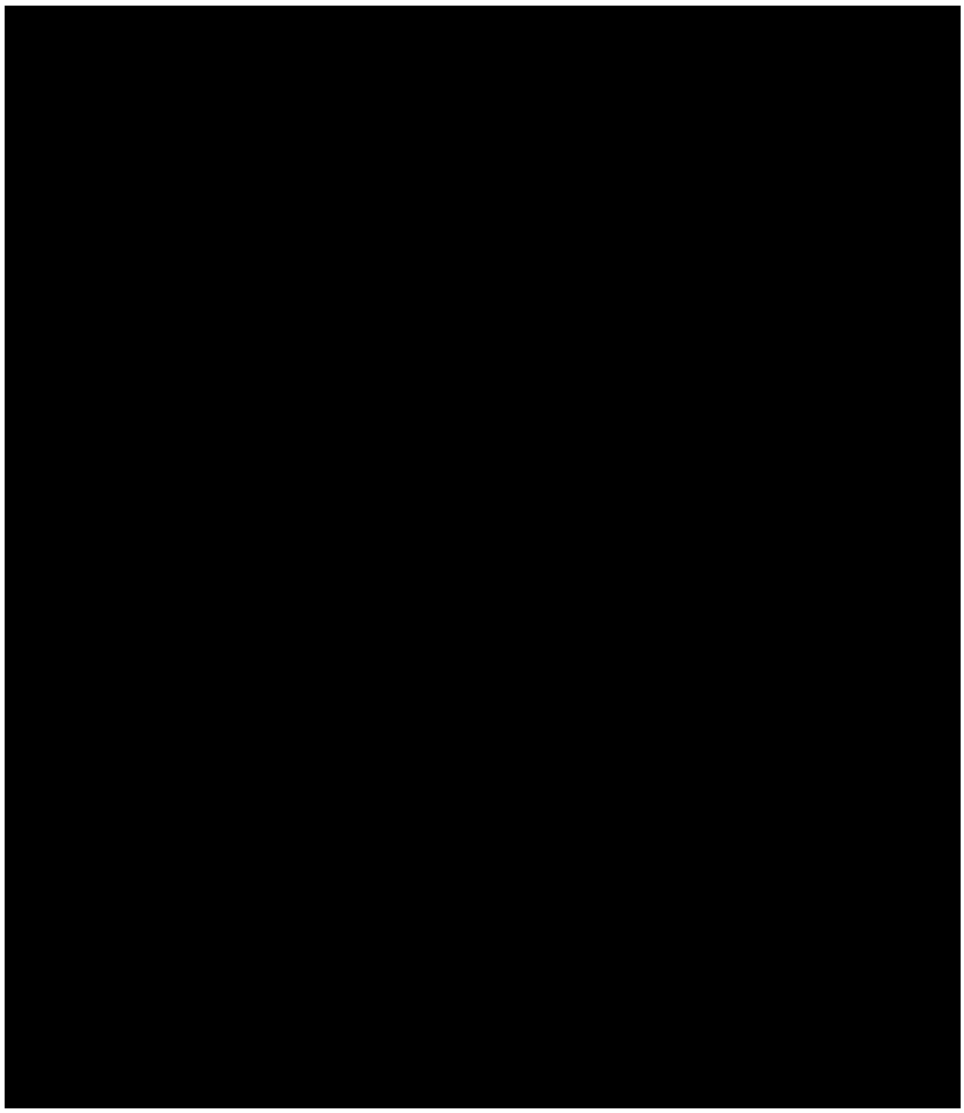
ROW 005 P3 Replacement with Wood Poles

2023 ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
3	Replace the 8 P3 poles with Wood	Draft	0	28%	$284,607	$284,607
				2023 Total:	$284,607	$284,607
				Total Project:	$284,607	$284,607

Attachment C. Geographic Map

[redacted]

Attachment D. System One-Line





Operations Project Authorization Form

Date Prepared: November 10, 2021	**Project Title: [redacted] P3 Remediation**
Company/ies: Eversource CT	**Project ID Number: CD01850**
Organization: Distribution Electric	**Class(es) of Plant: Distribution**
Project Initiator: [redacted]	**Project Category: Line**
Project Manager: [redacted]	**Project Type: ROW Rehabilitation**
Project Sponsor: [redacted]	**Project Purpose: Rehabilitate ROW 005**
Estimated in service date: December 31, 2023	**If Transmission Project: PTF? N/A**
Eng. /Constr. Resources Budgeted? Y	**Capital Investment Part of Original Operating Plan? Y**
Authorization Type: Preliminary	**O&M Expenses Part of the Original Operating Plan? Y**
Total Request: $284,607	

Financial Requirements:

Project Authorization
ERM: _____

FP&A: _____

Executive Summary

Eversource has completed drone patrols of all distribution Right of Ways (ROW) and has categorized all findings into five priority levels: P1, P2, P3, P4, and P5. Operations reviewed ROW 005 and found it did not have P1 or P2 work. There are eight P3 poles in this ROW.

[redacted]. This project proposes to replace the eight P3 poles with wood poles since there are no trees in the ROW and the poles are easily accessible.

Project Costs Summary
Dollars are in thousands

	Prior Authorized	2023	2024	2025+	Totals
Capital Additions - Direct	$0	$151.5	$0	$0	$151.5
Less Customer Contribution	$0	$0.0	$0	$0	$0.0
Removals net of Salvage ___%	$0	$35.4	$0	$0	$35.4
Total - Direct Spending	$0	$186.9	$0	$0	$186.9
Capital Additions - Indirect	$0	$82.6	$0	$0	$82.6

Subtotal Request	$0	$269.5	$0	$0	$269.5
AFUDC	$0	$5.4	$0	$0	$5.4
Total Capital Request	$0	$274.8	$0	$0	$274.8
O&M	$0	$9.8	$0	$0	$9.8
Total Request	$0	$284.6	$0	$0	$284.6

Financial Evaluation

Dollars are in thousands

Direct Capital Costs	Year 1	Year 2	Year 3+	Total
Straight Time Labor	$5.2	$0	$0	$5.2
Overtime Labor	$1.1	$0	$0	$1.1
Outside Services	$154.1	$0	$0	$154.1
Materials	$26.1	$0	$0	$26.1
Other, including contingency amounts (describe)	$0.3	$0	$0	$0.3
Total Direct Costs	**$186.9**	**$0**	**$0**	**$186.9**

Indirect Capital Costs	Year 1	Year 2	Year 3+	Total
Indirects/Overheads (including benefits)	$82.6	$0	$0	$82.6
Capitalized interest or AFUDC, if any	$5.2	$0	$0	$5.2
Total Indirect Costs	**$87.8**	**$0**	**$0**	**$87.8**
Total Capital Costs	**$274.6**	**$0**	**$0**	**$274.6**
Less Total Customer Contribution	**$0**	**$0**	**$0**	**$0**
Total Capital Project Costs	**$274.6**	**$0**	**$0**	**$274.6**
Total O&M Project Costs	**$10**	**$0**	**$0**	**$10**
Total Project Cost	**$ 284.6**	**$ -**	**$ -**	**$ 284.6**

Technical Justification:

Project Need Statement

The project was created to repair priority 3 poles in [redacted] which has a total of 25 poles. There are eight P3 poles and two P4 poles in [redacted] Since this ROW is accessible, this project calls to replace the eight P3 poles only with wood poles.

Project Objectives

This project originally called to replace the aging eight P3 structures in [redacted]

Project Scope

Replace eight P3 structures in [redacted] with wood poles.

Major Material:

- Utility Poles, 8
- Cross arms composite, 16
- Matting 8"X4'X16', 250 matts

Background / Justification

[redacted].

[redacted] have not had any outages in the past four years inside of [redacted]

Business Process and / or Technical Improvements:

The reliability performance is expected to improve for either of the options listed below on the [redacted]

Alternatives Considered with Cost Estimates

There are two alternative options being considered for [redacted]

Repair P3 poles only – Cost $370,515

- Replace eight P3 poles with steels pole in [redacted]. This does not address the P4 structures.
- Option not select since there are no trees in the ROW and the locations are easily accessible.

Rebuild [redacted] – Cost $1,317,290

- Reconductor with 556 TW using steel structures.
- Rebuild in a 2 over 2 over 2 configuration.
- Option was not selected since all poles are easily accessible and the 4/0 Cu is not the limiting factor for the circuit.

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Specific Project Proposal - Project #: CD01850
[redacted]P3 Remediation

Project Option Summary

ID	Description	Segments	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)	Prfrd
O1	[redacted]	1,2	$1,317,290	$0	100%	$680.95	$680.95	☐
O2	Replace P3 poles only	1	$370,515	$0	100%	$191.53	$191.53	☐
O3	[redacted]P3 Replacement with Wood Poles	3	$284,607	$0	100%	$0.00	$0.00	☑

Segments

ID	Title	Preliminary Estimate	Construction Estimate	Variance	IEEE $/CMS	All (w/Storm)
1	[redacted] Replace P3 poles only	$370,515			$152.76	$152.76
2	Rebuild [redacted]	$946,775			$390.35	$390.35
3	Replace the 8 P3 poles with Wood	$284,607			$0.00	$0.00

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PROs and CONS of the Design Options

Option	Pros	Cons	Cost
Address P3 poles in place with wood (preferred option)	- Least Expensive Option - Meets the emergent need inside the ROW the quickest.	- Does not address P4 and P5 poles that are not directly in the path of other work - No reconductoring which will leave 4/0 Cu bare conductor in the ROW	$284,607
Address P3 poles in place with steel structures.	- Uses stronger steel structures - Address P3 poles in place with wood	- Does not address P4 and P5 poles that are not directly in the path of other work - No reconductoring which will leave 4/0 Cu bare conductor in the ROW	$370,515
Rebuild [redacted] in place	- Replace all 25 poles in [redacted] with steel poles - Replaces 4/0 Cu, with 556 Al TW	-Most expensive option	$1,320,671

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Initial Funding Authorization	11/10/2021
Detail Design	3/30/2022
Full Funding Authorization	4/10/2022
Construction Begin	1/15/2023
Construction End	12/31/2023

Regulatory Approvals

ROW 005 does not cross any protected wetlands.

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	Work in the ROW could be delayed due to access and terrain
Internal construction resources not available to perform the work.	2023	High	Plan external resources to complete this project. Use competitive bidding to ensure lowest outside labor cost.
Internal engineering resources not available to perform the work.	2022	Low	Internal resources tentatively planned to support this project, particularly within the areas of construction supervision, equipment settings.
Materials Shortage or long lead times	2023	Low	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2023	Low	Contractors will manage weather delays as necessary.

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