EVERSOURCE

Project Approval Form

Project Title: Long Hill Rd Lateral Reliability	Project Number: CD01951
Date Prepared: 09/14/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** RELIABILITY IMPROVE SPEC PROJ
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: 12/31/24	
Total Capital Request: $2,508.8K	**Authorization Type:** Full Funding

1. Executive Summary

This project was established to address the [redacted] and has seen 11 outages over the past 4 years – 1 outage was planned to replace a step transformer, 1 outage was a motor vehicle incident, and 9 were tree related. The 9 tree related outages occurred consistently throughout the lateral. The circuit was trimmed to ETT specs in 2019 and is scheduled to be trimmed again in 2023. [redacted]. Hazard trees will be removed during the reconductoring process. [redacted]

9/14/23 – Full Funding request. The Partial Funding estimate is $1,394K, approved on 3/17/22. Full Funding estimate is $1,232.3K, a difference of $161.7K, or a 12% decrease. The project is expected to be completed in 2024.

Change of scope - [redacted] The high-level estimate to convert and reconductor County Rd ($247K), Hemlock Rd ($197K), Beaver Head Rd ($155K), Wilburs Ln & West St ($750K) is $1,349K. This figure is shown in the financial table below and is included in the new Full Funding estimate of $2,508.8K.

The current approved estimate was prepared using legacy unit costs, which are approximately 30% lower than the estimates used today to account for an increase in material and labor costs. Using the estimating units of today, the Partial Funding estimate would be $1,812.2K.

Also, the project was delayed due to residents complaining about the tree trimming and tree removals. A town hall meeting was held in which Eversource was present to explain the reason for this project and Eversource's tree trimming program.

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	Year 2023	Year 2024	Year 2024 ENG Estimate	Total
Direct Capital Costs				
Internal Labor and Construction Equipment	183.3	111.1	66.8	361.2
Outside Services	29.7	18.0	452.6	500.3
Materials	73.8	44.7	181.5	300
Removals	74.2	45.0	159.7	278.9
Risk and Contingency	53.5	32.4	6.2	92.1
Other	0.0	0.0	0.0	0
Subtotal – Direct Costs	**414.6**	**251.2**	**866.8**	**1,532.6**
Indirect Capital Costs				
Indirect/Overheads (including benefits)	352.7	213.7	384.3	950.7
Capitalized interest or AFUDC, if any	0.0	0.0	25.4	25.4
Subtotal – Indirect Costs	**352.7**	**213.7**	**409.8**	976.2
Total Gross Capital Costs	**767.3**	**465.0**	**1,276.5**	**2,508.8**
Customer Contribution	**0.0**	**0.0**	**0.0**	0
Total Net Capital Project Costs	**767.3**	**465.0**	**1,276.5**	**2,508.8**

Detail Estimate, see Attachment “A”.

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

- Refer to ‘Distribution Partial/Full Funding Request Form – Guide, rev0’.

b. Project Need

[redacted]. The circuit was ETT trimmed in 2019. Of the 11 outages over the past 4 years, 3 were in 2019, 4 were in 2020, 2 were in 2021 and 2 in January 2022. Nine outages were due to trees, one was a vehicle accident and the other was a planned outage to replace one of the auto-transformers.

[redacted]

[redacted]

c. Project Scope

[redacted]

4. Alternatives Considered

Project Option Comparison

	Option		
[redacted]			
Authorization Type	Partial	Partial	Full
Capital Cost	$1,128.7	$1,383.6	$2,508.8K
Expense Cost	$64.1K	$78.6K	$302.4K
Total Cost	$1,192.8K	$1,462.2K	$2,811.2K
Total Cost / CM Saved	$39.66	$39.66	$23,101
Total Cost / CI Saved	$4,650	$4,650	$/CI
Preferred option			X

Option 1 was not selected because it leaves [redacted]

Option 2 was initially the preferred option, but due to the [redacted]

Option 3 is the new preferred option because it [redacted]

5. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Partial Approval	3/17/22
100% Detailed Engineering Completion	8/31/22
Fully Funded	9/14/23
Construction Start	3/1/23
In Service Date	12/31/24

6. Regulatory Decisions

7. Codes and Standards

8. Risk and Contingencies

Contingencies:

Risk Mitigation:

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2023	High	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	High	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2023	Low	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.	2023	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2023	High	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2023	Medium	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2023	Low	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	2023	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	2023	Low	Use of mats and specialty equipment, only work during certain times of the year.

9. References

References
1.
2.
3.
4.
5.

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

Attachment	Included in Submittal?
A. Cost Estimate	*YES*
B. Outage History	*YES*
C. Geographic Map	*YES*

Attachment A

Option 1 – Reconductor Long Hill Rd (no conversion)

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01951
Long Hill Reconductor

Design Alternative CD01951-01

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	20.00%
SubTotal:	$994,030
Contingency Amount:	$198,806
Estimate:	$1,192,836
Reimbursement:	$0
Net Amount:	**$1,192,836**
Description:	

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	$3,509.60
TREE OH - Tree Trimming 100k given by Susan Stotts for reliability inprovement.	16-OH61	$100,000.00
TRAFFIC OH/DB/UG - Traffic Control - Police Officer 5% of total	16-ALL18	$50,000.00
POLE OH - POLE - 3ph (Telephone custodian) All poles plus 3	16-OH12	$103,240.00
OH WIRE OH - Reconductor w/Spacer Cable - 556 kcmil Reconductor 7,200' from Step-down to 100k fuse @3125	16-OH29	$737,280.00

[redacted]

Associated / Impacted Devices

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

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Option 2 – Reconductor and Convert Long Hill Rd

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01951
Long Hill Reconductor

Segment CD01951-02

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	20.00%
SubTotal:	$1,218,479
Contingency Amount:	$243,696
Estimate:	$1,462,175
Reimbursement:	$0
Net Amount:	**$1,462,175**

Description:

Item Description	CU			Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	[redacted]		$3,509.60
POLE OH - POLE - 3ph (CL&P custodian)	16-OH14			$135,604.00
OH WIRE OH - Reconductor w/Spacer Cable - 556 kcmil	16-OH29			$737,280.00
XF DB/UG - Padmount XF - 1ph	16-UG130			$25,177.60
XF DB/UG - Padmount XF - 3ph	16-UG131			$6,299.20
XF OH - Stepdowns, 3-1ph - on one POLE @p3116, 3104,1627, 1647, 1710	16-OH50			$50,000.00
TREE OH - Tree Trimming 100k given by Susan Stotts for reliability inprovement.	16-OH61			$100,000.00
TRAFFIC OH/DB/UG - Traffic Control - Police Officer 5% of total	16-ALL18			$40,000.00
EQUIPMENT OH - Conversion - CUTOVER Cost for cut over of all 33 xfmrs being converted or installed.	16-OH58	535.20 / LOC	49	$26,224.80

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Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01951

Long Hill Reconductor

Segment		[redacted]	CD01951-02
XF OH - Stepdowns, 3-1ph - on one POLE Install step down at 3125.	16-OH50		$10,000.00
XF OH - OH XF - 1ph Replace the 40OH xfmrs	16-OH45		$84,384.00

Reconductor and convert Wilburs Ln, West St

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01951
Long Hill Reconductor

Design Alternative CD01951-03

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	24.00%
SubTotal:	$604,837
Contingency Amount:	$145,161
Estimate:	$749,998
Reimbursement:	$0
Net Amount:	**$749,998**
Description:	

Item Description	CU	Amount
TRAFFIC OH/DB/UG - Traffic Control - Flagger	23-ALL19	$77,000.00
POLE OH - POLE - 1ph (Telephone custodian)	23-OH11	$34,143.20
SECTIONALIZE OH - Cutouts or Arresters - 1ph	23-OH19	$124,779.20
OH WIRE OH-Reconductor w/175 Mil Tree Wire-1ph (any gauge)	23-OH25	$177,840.00
OH WIRE OH - Neutral	23-OH31	$47,424.00
EQUIPMENT OH - Conversion Prep Work - 1ph	23-OH56	$75,519.60
EQUIPMENT OH - Conversion - CUTOVER	23-OH58	$50,790.48
TREE OH - Tree Trimming Estimate from Dale	23-OH61	$15,000.70
EQUIPMENT OH - Remove Capacitor, any kVAR P1755 Wilburs ln	23-OH54	$2,340.00

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Reconductor and convert County Rd, Hemlock Rd, Beaver Head Rd

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Specific Project Proposal - Project #: CD01951
Long Hill Reconductor

Design Alternative — CD01951-04

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	24.00%
SubTotal:	$483,095
Contingency Amount:	$115,943
Estimate:	$599,037
Reimbursement:	$0
Net Amount:	**$599,037**
Description:	

Item Description	CU	Amount
TRAFFIC OH/DB/UG - Traffic Control - Flagger Beaver Head	23-ALL19	$17,000.00
POLE OH - POLE - 1ph (Telephone custodian) Beaver Head	23-OH11	$14,632.80
OH WIRE OH-Reconductor w/175 Mil Tree Wire-1ph (any gauge) Beaver Head	23-OH25	$65,520.00
OH WIRE OH - Neutral Beaver Head	23-OH31	$9,984.00
EQUIPMENT OH - Conversion Prep Work - 1ph Beaver Head	23-OH56	$3,213.60
EQUIPMENT OH - Conversion - CUTOVER Beaver Head	23-OH58	$5,566.08
TREE OH - Tree Trimming Beaver Head	23-OH61	$4,999.80
EQUIPMENT OH - Conversion - CUTOVER Country	23-OH58	$12,523.68
TRAFFIC OH/DB/UG - Traffic Control - Flagger County	23-ALL19	$22,500.00

[redacted]

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Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01951

Long Hill Reconductor

Design Alternative		[redacted]	CD01951-04
POLE OH - POLE - 1ph (Telephone custodian) County	23-OH11		$17,071.60
SECTIONALIZE OH - Cutouts or Arresters - 1ph County	23-OH19		$21,390.72
SECTIONALIZE OH - Cutouts or Arresters - 1ph County	23-OH19		$8,912.80
OH WIRE OH-Reconductor w/175 Mil Tree Wire-1ph (any gauge) County	23-OH25		$78,000.00
OH WIRE OH - Neutral County	23-OH31		$13,312.00
EQUIPMENT OH - Conversion Prep Work - 1ph County	23-OH56		$16,068.00
TREE OH - Tree Trimming County	23-OH61		$5,003.70
TRAFFIC OH/DB/UG - Traffic Control - Flagger Hemlock	23-ALL19		$20,000.00
POLE OH - POLE - 1ph (Telephone custodian) Hemlock	23-OH11		$17,071.60
SECTIONALIZE OH - Cutouts or Arresters - 1ph Hemlock	23-OH19		$8,912.80
OH WIRE OH-Reconductor w/175 Mil Tree Wire-1ph (any gauge) Hemlock	23-OH25		$68,640.00
OH WIRE OH - Neutral Hemlock	23-OH31		$18,304.00
EQUIPMENT OH - Conversion Prep Work - 1ph Hemlock	23-OH56		$3,213.60

Connecticut Light & Power
A Northeast Utilities Company

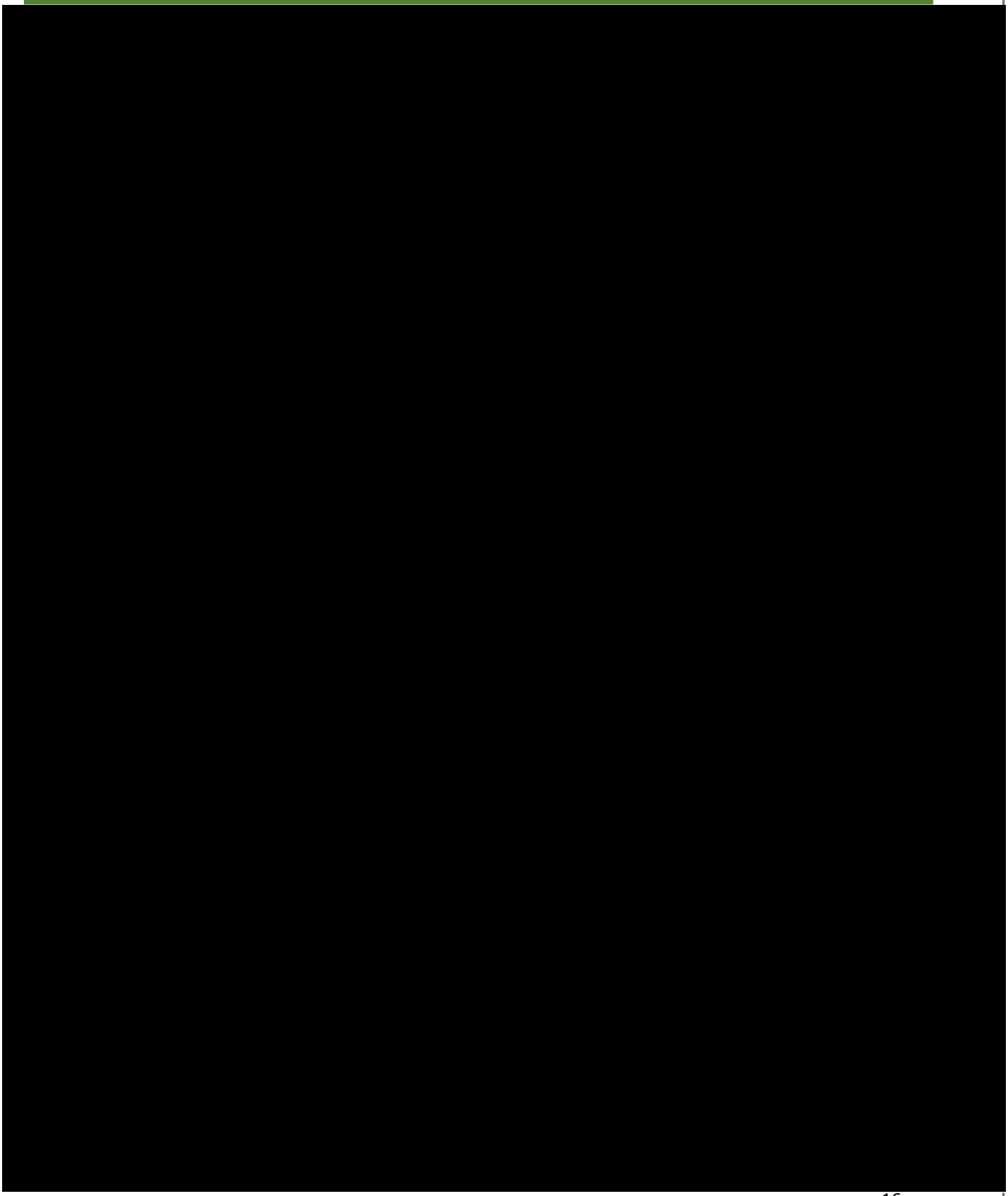
Specific Project Proposal - Project #: CD01951
Long Hill Reconductor

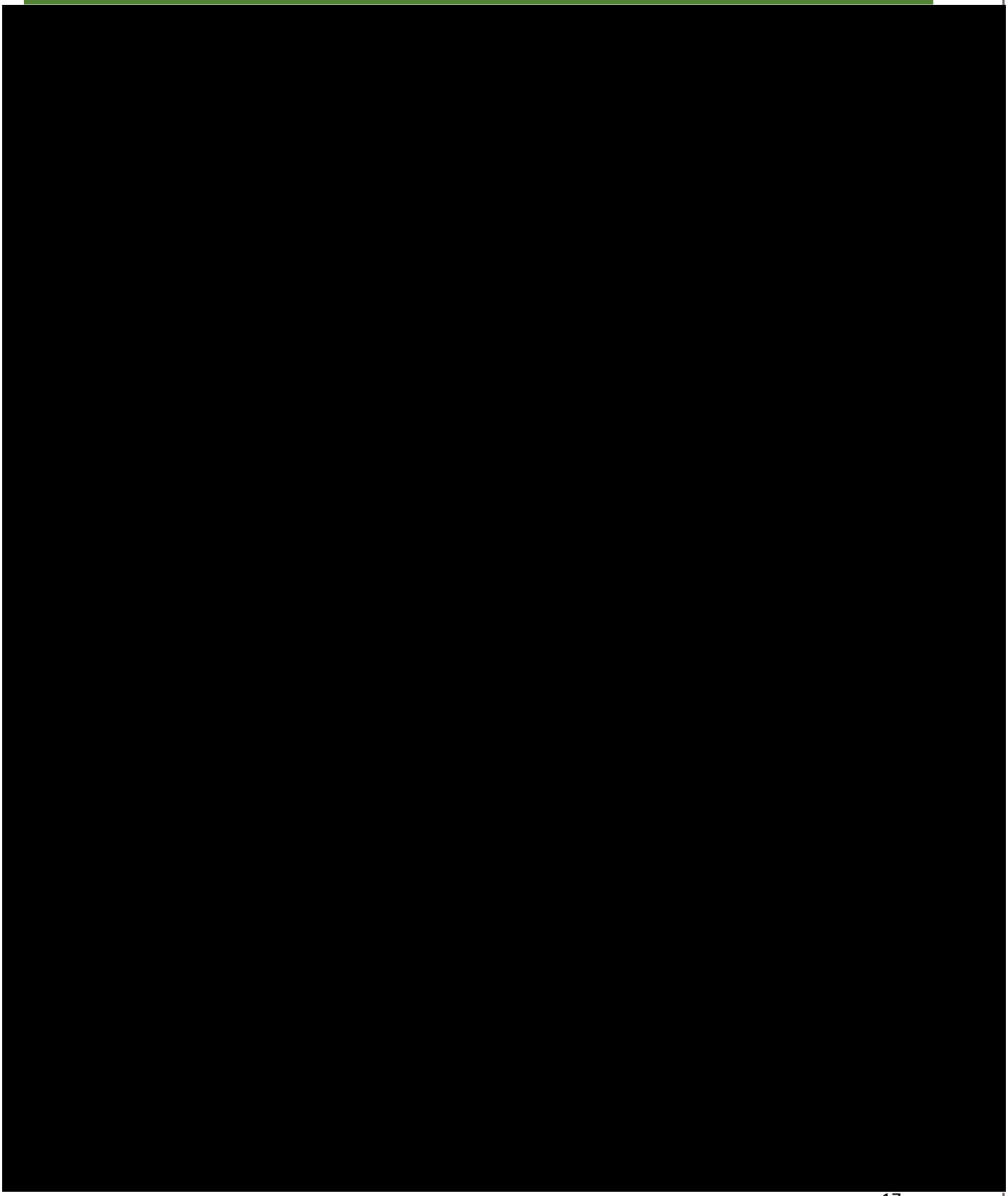
Design Alternative		[redacted]	CD01951-04
EQUIPMENT OH - Conversion - CUTOVER Hemlock	23-OH58		$5,566.08
TREE OH - Tree Trimming Hemlock	23-OH61		$12,000.30
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average Hemlock, County and Beaver Head	23-ALL17		$13,687.44

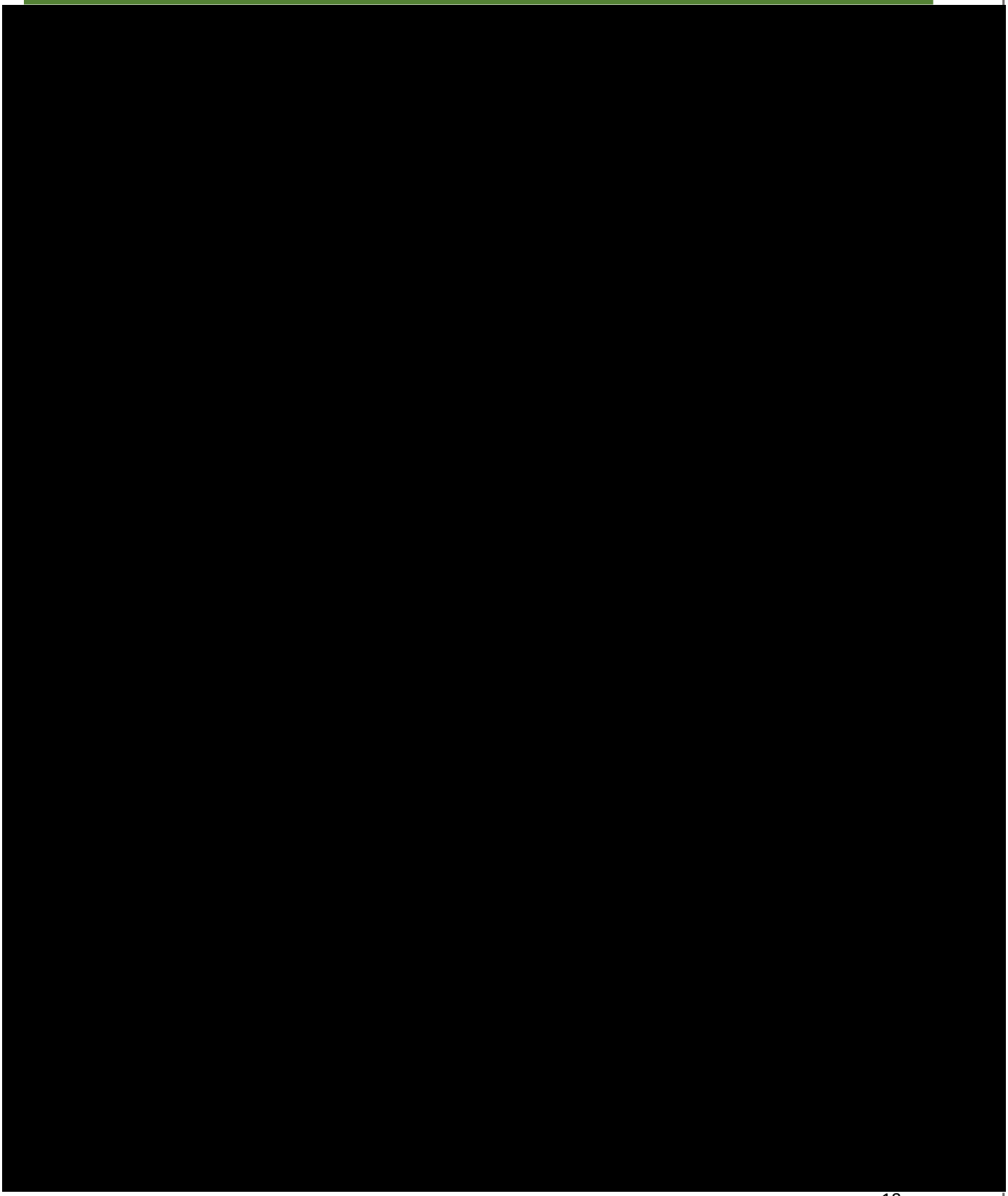
Attachment B

[redacted]

[redacted]







EVERSOURCE
APS 1 - Project Authorization Policy

Appendix 2
Operations Project Authorization Form

Operations Project Authorization Form

Project Title: Long Hill Rd Lateral reliability	**Project Number: CD01951**
Date Prepared: 03/17/2022	**Company:** Eversource CT
Organization: EFO	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category:** Reliability
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Capital Investment part of original Operating Plan:** Yes
Estimated in service date: 12/31/2023	**Emergency Related Request?** No
Eng./Constr. Resources Budgeted? Yes	**Facility Type** (check all that apply): ☐ PTF ☐ non-PTF ☒ Distribution
Total Gross Capital Request: $1.394M	**Authorization Type:** Partial Funding

Executive Summary

This project was established to address the poor [redacted] and has seen 11 outages over the past 4 years – 1 outage was planned to replace a step transformer, 1 outage was a motor vehicle incident, and 9 were tree related. The 9 tree related outages occurred consistently throughout the lateral. The circuit was trimmed to ETT specs in 2019 and is scheduled to be trimmed again in 2023. [redacted] Hazard trees will [redacted]

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APS 1 - Project Authorization Policy

Appendix 2
Operations Project Authorization Form

Project Costs Summary

Capital Costs	2023	2024	2025	Total
Internal Labor and Construction Equipment	$29	$0	$0	$29
Outside Services	$708	$0	$0	$708
Materials	$76	$0	$0	$76
Removals	$31	$0	$0	$31
Risk and Contingency	($4)	$0	$0	($4)
Other	$0	$0	$0	$0
Subtotal	**$841**	**$0**	**$0**	**$841**
Indirect Capital Costs	**Year 1**	**Year 2**	**Year 3+**	**Total**
Indirects/Overheads (including benefits)	$553	$0	$0	$553
Capitalized interest or AFUDC, if any	$0	$0	$0	$0
Subtotal	**$553**	**$0**	**$0**	**$553**
Total Capital Costs (Gross)	**$1,394**	**$0**	**$0**	**$1,394**
Less Total Customer Contribution	**$0**	**$0**	**$0**	**$0**

Technical Justification:

Project Need, Objective and Justification

[redacted]

Project Scope

[redacted]

- Remove hazard trees as necessary

EVERSOURCE
APS 1 - Project Authorization Policy

Appendix 2
Operations Project Authorization Form

[redacted]

Major Material:

7,200 ft. 556 spacer cable
55 - 45' poles (telephone custodian)
40 - OH transformers
6 - Step-down transformers
9 - Padmount transformers

Background

[redacted]

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APS 1 - Project Authorization Policy

Appendix 2



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APS 1 - Project Authorization Policy

Appendix 2
Operations Project Authorization Form

[redacted]

Alternatives Considered:

Alternatives were considered (please describe below)

This alternative calls to [redacted]

Regulatory Approvals:

No

Project Schedule

Milestone/Phase Name	Estimated Date
100% Engineering Completion	May 2023
Construction Start	September 2023
Testing/Commissioning	November 2023
In Service Date	December 2023

Risks and Risk Mitigation Plans

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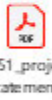
APS 1 - Project Authorization Policy

Appendix 2
Operations Project Authorization Form

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2023	Low	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Internal construction resources not available to perform the work.	2023	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost if necessary.
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	Medium	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

References


Outage Data Long Hill Rd 3519.xlsx


CD01951_project_needs_statement.pdf


Cd01951 Fault Map.pdf

Policy Sponsor: EVP and CFO

Issued 12/31/21
Rev. 6