EVERSOURCE

Project Approval Form

Project Title:	Project Number: CD01853
Date Prepared: 08/22/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** LINE WORK FOR TRANSMISSION
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: 9-1-22	
Total Capital Request: $5,470,261	**Authorization Type:** Full Funding

1. Executive Summary

Eversource Transmission is looking to [redacted]

The total cost of the preferred option is $5,194,321
The detail design full funding estimate came in at $5,470,300 which is 107% of the partial funding cost. There was no change in scope.

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2023	2024	2025+	Total
Internal Labor and Construction Equipment	283.1	0.0	0.0	283.1
Outside Services	2,029.9	0.0	0.0	2,029.9
Materials	359.1	0.0	0.0	359.1
Removals	198.7	0.0	0.0	198.7
Risk and Contingency	497.3	0.0	0.0	497.3
Other	0.0	0.0	0.0	0.0
Subtotal	**3,368.0**	**0.0**	**0.0**	**3,368.0**

Indirect Capital Costs	2023	2024	2025+	Total
Indirects/Overheads (including benefits)	2,102.3	0.0	0.0	2,102.3
Capitalized interest or AFUDC, if any	0.0	0.0	0.0	0.0
Subtotal	**2,102.3**	**0.0**	**0.0**	**2,102.3**
Total Capital Costs (Gross)	**5,470.3**	**0.0**	**0.0**	**5,470.3**
Less Total Customer Contribution	**-5,470.3**	**0.0**	**0.0**	**-5,470.3**
Project Costs (Net of Reimbursement)	**0.0**	**0.0**	**0.0**	**0.0**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

[redacted]

b. Project Need

[redacted]

c. Project Scope

The project proposes the following:

[redacted]



Major Material

- 13000' 556 AL SC
- 3 1257 Auto transformer
- 3 Cooper Nova / Form 6 recloser
- 1 100k Trip Saver
- 1 900 amps GOAB SW
- 79 45' class 1 poles (or class 2) – Bowers Hill Rd and Roosevelt Dr for backbone
- 5 Junction poles – ROW for H frame rebuilt
- 82 40' class 2 poles – Freeman Rd for lateral (if needed)
- 3 40 class 2 poles – Bowers Hill Rd for Lateral Relocation
- 15400' 1/0 Tree Wire
- 4 15k C/O
- 1 Three-phase OH transformer
- 73 Single-phase OH transformers
- 24 Single-phase pad-mount transformers

4. Alternatives Considered

Option 2, $5,598,570 increase of $404,249. [redacted]

Option 3 is to [redacted]

With a cost of $6,995,309 this option does not provide any benefits as option 1 that cost's $1.8 mil less than option 3.

Option 4, this option proposes to shift [redacted]

Project Option Comparison

Preferred Option	✔		
[redacted]			

[redacted]

Authorization Type	Full Funding	Partial	Partial
Cost	$6,017K	$7,279K*	$9,375K*
Capital Cost	$5,470K	$6,523K	$8,403K
Expense	$547K	$757K	$971K
Cost / CM Saved	$6.47	$9.07	$29.28
Cost / CI Saved	$12,110.23	$16,968.52	$48,410.41

***30% added due to 2016 Estimating units being used**

5. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Partial Approval	May 2022
100% Detailed Engineering Completion	November 2022
Fully Funded	August 2023
Construction Start	April 2023
In Service Date	August 2023

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	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 are not available to	2023	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure the lowest outside labor cost if necessary.

perform the work.			
Internal engineering resources are not available to perform the work.	2022	Low	Plan internal resources to perform the work. Use competitive bidding to ensure the lowest outside labor cost if necessary.
Materials shortage or long lead times	2023	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2022/2023	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 the system will be abnormal for extended periods.
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.

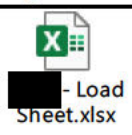
9. References

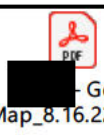
References
1.
2.
3.
4.
5.

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

Attachment	Included in Submittal?
A. Cost Estimate	*YES*
B. Initial Funding PAF	*YES*









A. Cost Estimate

Design Alternative CD01853-01

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$158,978
Contingency Amount:	$44,514
Estimate:	$203,492
Reimbursement:	$0
Net Amount:	$203,492
Description:	

Item Description	CU	[redacted]	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17		$7,019.20
TRAFFIC OH/DB/UG - Traffic Control - Flagger	16-ALL19		$3,000.00
OTHER OTHER 20% Contractor	16-ALL14		$32,403.00
OTHER OTHER 65 Pole removal Pole 25504 to G8532 @ $500 each (reference ma	16-ALL14		$32,500.00
OH WIRE OH - Remove circuit wire (3 phase) from pole G8532 [redacted] to 25503 [redacted]	16-OH37A		$44,800.00
OH WIRE OH - Remove circuit wire (1 phase) Neutral - from pole G8532 [redacted] to 25503 [redacted]	16-OH37		$33,600.00
SECTIONALIZE OH - Remove Recloser (any) Remove existing [redacted]	16-OH42		$5,656.00

Design Alternative CD01853-02

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	28.00%
SubTotal:	$443,615
Contingency Amount:	$124,212
Estimate:	$567,827
Reimbursement:	$0
Net Amount:	$567,827
Description:	

Item Description	CU			Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17			$14,038.40
TRAFFIC OH/DB/UG - Traffic Control - Police Officer x 6% Police/Flagger	16-ALL18			$25,563.00
EQUIPMENT OH - Conversion Prep Work - 1ph 14A1 - On Freeman Rd - 1 ph - 69 poles - From pole 20761	16-OH56			$85,284.00
EQUIPMENT OH - Conversion - CUTOVER 14A1 - On Coppermine Rd - 1 ph - 18 xfmrs (4 PADMOUNT) - From	16-OH58			$9,633.60
EQUIPMENT OH - Conversion Prep Work - 1ph 14A1 - On Coppermine Rd - 1 ph - 37 Pole - From pole B9263, B92	16-OH56			$45,732.00
EQUIPMENT OH - Conversion Prep Work - 3ph 14A1 - On Coppermine Rd - 3 ph - 11 Poles - From pole 20724 to 2	16-OH57			$22,660.00
EQUIPMENT OH - Conversion Prep Work - 3ph 14A1 - On Coppermine Rd - 3 ph - 5 Pole - From pole 25503 to F48	16-OH57			$10,300.00
EQUIPMENT OH - Conversion - CUTOVER 14A1 - On Coppermine Rd - 3 ph - 6 xmfrs (1 - 3 ph PADMOUNT & 1 - 3 ph OH xfmr) - From pole 20724 to 20760	16-OH58	535.20 / LOC	6	$3,211.20
EQUIPMENT OH - Conversion - CUTOVER 14A1 - On Freeman Rd - 1 ph - 39 xfmrs (6 PADMOUNT)	16-OH58	535.20 / LOC	40	$21,408.00

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Design Alternative		[redacted]	CD01853-02
OTHER OTHER 20% Contractor	16-ALL14		$85,208.00
EQUIPMENT OH - Conversion - CUTOVER 21K11 - 36 xfmrs on Bowers Hill Rd and Freeman Rd (14 PADMOUN	16-OH58		$19,267.20
EQUIPMENT OH - Conversion Prep Work - 1ph 21K11 - On Bowers Hill Rd - 1 ph - 31 Poles - From pole 62787 - B929	16-OH56		$38,316.00
EQUIPMENT OH - Conversion Prep Work - 1ph 21K11 - On Bowers Hill Rd - 1 ph - 31 Poles - From pole D236 - G338	16-OH56		$21,012.00
EQUIPMENT OH - Conversion Prep Work - 1ph 21K11 - On Freeman Rd - 1 ph - 13 Poles - From pole 22975 - G1213	16-OH56		$16,068.00
EQUIPMENT OH - Remove Capacitor, any kVAR 21K11 - Remove 333 kVA steps from pole 62786 and load side C/O	16-OH54		$1,800.00
SECTIONALIZE OH - Cutouts or Arresters - 1ph Install new C/O on pole C2125, 20764 & G1212	16-OH19		$4,113.60
XF OH - Stepdowns, 3-1ph - on one POLE Replace non standard stepdown xfrm with 1257 kVA auto parallel - pole 8533, 8534 & 3835	16-OH50		$20,000.00

Design Alternative CD01853-03

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	28.00%
SubTotal:	$2,577,795
Contingency Amount:	$721,783
Estimate:	$3,299,578
Reimbursement:	$0
Net Amount:	$3,299,578

Description:

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	$14,038.40
OTHER OTHER 20% for Contractor	16-ALL14	$455,616.00
OH WIRE OH - Reconductor w/Spacer Cable - 556 kcmil 21K11 and 14A1 - Reconductor 1 ph 1/0 TW with 556 SC on Coppe	16-OH29	1,331,200.00
OH WIRE OH - Remove circuit wire (1 phase) 21K11 and 14A1 - Remove existing - 1 phase Cable - Coppermin	16-OH37	$31,200.00
OH WIRE OH - Remove circuit wire (1 phase) 21K11 and 14A1 - Remove existing neutral - Coppermine Rd and B	16-OH37	$31,200.00
TRAFFIC OH/DB/UG - Traffic Control - Police Officer 6% for Police/flagger	16-ALL18	$136,685.00
POLE OH - POLE - 3ph (CL&P custodian) 84 poles (50% included in reconductoring) Replace old/non standar Bowers Hill Rd	16-OH14	$369,404.00 d and
TREE OH - Tree Trimming From pole 25503 Roosevelt Dr to pole 20752 on Coppermine Rd to	16-OH61	$150,000.00
POLE OH - JUNCTION POLE - 3ph (CL&P custodian) Reject pole on H Frame F4811	16-OH14A	$58,452.00

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Design Alternative CD01853-05

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	28.00%
SubTotal:	$192,112
Contingency Amount:	$53,791
Estimate:	$245,903
Reimbursement:	$0
Net Amount:	$245,903
Description:	

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	$7,019.20
SECTIONALIZE OH - Hydraulic Recloser - 1ph 100k - 1 ph - TS on pole 20761	16-OH40	$6,855.20
SECTIONALIZE [redacted]	16-OH38	143,968.80
TRAFFIC OH/DB/UG - Traffic Control - Police Officer 6% Police & Flaggers	16-ALL18	$13,702.00
SECTIONALIZE OH - GOAB Switch GOAB on pole B9290	16-OH44	$20,566.40

[redacted]

Design Alternative CD01853-06

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$75,298
Contingency Amount:	$21,083
Estimate:	$96,381
Reimbursement:	$0
Net Amount:	**$96,381**
Description:	

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING Network	16-ALL15	$28,097.60
TRAFFIC OH/DB/UG - Traffic Control - Flagger	16-ALL19	$1,200.00
OH WIRE OH - Line Extension - 1ph (any gauge) Pole B9293 to 25535	16-OH32	$36,000.00
TREE OH - Tree Trimming Trimming estimates from Barber, Eric E	16-OH61	$10,000.00

[redacted]

Design Alternative CD01853-07

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$610,266
Contingency Amount:	$170,874
Estimate:	$781,140
Reimbursement:	$0
Net Amount:	**$781,140**
Description:	

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING Network	16-ALL15	$28,097.60
TREE OH - Tree Trimming	16-OH61	$10,000.00
OH WIRE OH - Remove circuit wire (1 phase) 14A1 - Freeman Rd - Conductor removal, pri and N	16-OH37	$28,800.00
OH WIRE OH - Neutral 14A1 - N on Freeman Rd from pole 20760 to 20772	16-OH31	$12,800.00
OH WIRE OH - Neutral 14A1 - N on Freeman Rd from pole 6795 to D234	16-OH31	$25,600.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-1ph (any gauge) 14A1 - Pri on Freeman Rd from pole 20760 to 20772	16-OH25	$48,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-1ph (any gauge) 14A1 - Pri on Freeman Rd from pole 6795 to D234	16-OH25	$96,000.00
OH WIRE OH - Neutral 21K11 - N on Freeman Rd from pole B9296 to 22978	16-OH31	$7,680.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-1ph (any gauge) 21K11 - Pri on Freeman Rd from pole B9296 to 22978	16-OH25	$28,800.00

[redacted]

Design Alternative		[redacted]	CD01853-07
OH WIRE OH - Remove circuit wire (1 phase) 21K11 - Removal on Freeman Rd from pole B9296 to 22978	16-OH37		$2,880.00
POLE OH - POLE - 1ph (CL&P custodian) 40/2 on Freeman Road from pole 20761 total poles 82	16-OH13		$118,244.00
OTHER OTHER Contractor 20%	16-ALL14		$150,964.00
TRAFFIC OH/DB/UG - Traffic Control - Flagger Flaggers	16-ALL19		$20,000.00
OH WIRE OH - Remove circuit wire (1 phase) Remove 500' of #6 & N	16-OH37		$2,400.00
OH WIRE OH - Line Extension - 1ph (any gauge) Replace #6 Cu + N from pole 3591 to C3494 with 1/0 TW	16-OH32		$30,000.00

Operations Project Authorization Form

Project Title: [redacted] Line Relocation	**Project Number:** CD01853
Date Prepared: 04/14/2022	**Company:** Eversource CT
Organization: Distribution Electric	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category:** Distribution Line Work for Transmission
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Capital Investment part of original Operating Plan:** Yes
Estimated in-service date: 12/31/23	**Emergency Related Request?** Yes
Eng./Constr. Resources Budgeted? Yes	**Facility Type** (check all that apply)**:** ☐ PTF ☐ non-PTF ☒ Distribution
Total Gross Capital Request: $5,094k (100% Reimb.)	**Authorization Type:** Initial Funding

Executive Summary

Eversource Transmission is looking to [redacted]

The total cost of the preferred option is $5,194,321

Project Costs Summary

Note: Dollar values are in thousands

Direct Capital Costs	Year 2023	Year 2024	Year 2025+	Total
Internal Labor and Construction Equipment	$45	$0	$0	$45
Outside Services	$388	$0	$0	$388
Materials	$146	$0	$0	$146
Removals	$302	$0	$0	$302
Risk and Contingency	$4	$0	$0	$4
Other	$0	$0	$0	$0
Subtotal	**$884**	**$0**	**$0**	**$884**
Indirect Capital Costs	**Year 2023**	**Year 2024**	**Year 2025+**	**Total**
Indirects/Overheads (including benefits)	$4,172	$0	$0	$4,172
Capitalized interest or AFUDC, if any	$37	$0	$0	$37
Subtotal	**$4,209**	**$0**	**$0**	**$4,209**
Total Capital Costs (Gross)	**$5,094**	**$0**	**$0**	**$5,094**
Less Total Customer Contribution	**$0**	**$0**	**$0**	**$0**
Project Costs (Net)	**$5,094**	**$0**	**$0**	**$5,094**

Technical Justification:

Project Need Statement

[redacted]

Project Objectives

[redacted]

Project Scope

The project proposes the following:

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Alternatives Considered:

Alternatives were considered (please describe below)

Option 2, $5,598,570 increase of $404,249. [redacted]

Option 3 is to [redacted]

With a cost of $6,995,309 this option does not provide any benefits as option 1 that cost's $1.8 mil less than option 3.

Option 4, this option proposes to [redacted]

Preferred Option	✔		

[redacted]

[redacted]

Cost	$5,194,321	$5,598,570	$7,211,290
Cost / CM Saved	$6.47	$6.98	$22.52
Cost / CI Saved	$12,110.23	$13,052.71	$37,238.78

Regulatory Approvals

No

Project Schedule

Milestone/Phase Name	Estimated Completion
Initial Funding Authorization	May. 2022
Detailed Design	Aug. 2022
Full Funding Authorization	Sep. 2022
Construction Begin	Jan 2023
Construction End	Dec 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	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 are not available to perform the work.	2023	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure the lowest outside labor cost if necessary.
Internal engineering resources are not available to perform the work.	2022	Low	Plan internal resources to perform the work. Use competitive bidding to ensure the lowest outside labor cost if necessary.
Materials shortage or long lead times	2023	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.

Storm delays	2022/2023	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 the system will be abnormal for extended periods.
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.

References

NA