EVERSOURCE

Project Approval Form

Project Title: [redacted]	**Project Number CD01385**
Date Prepared: 07/11/2023	**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: 12/31/2023	
Total Capital Request: $2,477K	**Authorization Type:** Full Funding

1. Executive Summary

Full funding is now being requested for this project at a cost of $2,477K. This represents an increase of $284K or 113% of the Initial funding request.

The general scope of the work remained the same. Upon review of the work orders, it was noticed that one recloser wasn't accounted for, so the cost of that additional recloser was added to the project. There was also some secondary and primary work [redacted] that was missing from the work order.

Other factors that contributed to the increase cost of this work was that the [redacted] had mandated that this work be done at night which added a premium to the labor cost. Plan and profile drawings and video recording of the storm drains in the vicinity of the work had to be done before any permit was issued by the [redacted]. This also added to the "Outside Services" cost on the project.

Location Information:

Division: Western
District: Stamford
City: Greenwich

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	Prior Actuals	2023	Total
Direct Capital Costs			
Internal Labor and Construction Equipment	28.1	14.3	42.4
Outside Services	332.2	169.2	501.4
Materials	406.8	207.2	614.0
Removals	167.6	123.0	290.6
Risk and Contingency	0.0	172.8	172.8
Other	1.4	0.7	2.2
Subtotal – Direct Costs	**936.1**	**686.6**	**1,623.4**
Indirect Capital Costs			
Indirect/Overheads (including benefits)	420.3	433.2	853.5
Capitalized interest or AFUDC, if any	27.2	-27.2	0.0
Subtotal – Indirect Costs	**447.5**	**406.1**	**853.5**
Total Gross Capital Costs	**1,383.6**	**1,092.6**	**2,477.0**
Customer Contribution	**0.0**	**0.0**	**0.0**
Total Net Capital Project Costs	**1,383.6**	**1,092.6**	**2,477.0**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

REINFORCEMENT

Primary Voltage Distribution Prior to New Prospect Street Substation:

[redacted]

[redacted]

DIVERSIFICATION

An additional degree of diversification is achievable by [redacted]

[redacted]

b. Project Need

[redacted]

[redacted]. Below are the steps that will guide the design process:

- Reinforcement through redundancy
- Diversification of supply
- Contraction of the network where appropriate

The justification for this project is based on the following:

- Offer a higher level of service to a downtown load area.
- Offset system stress, (secondary loading), resulting from poor component reliability.
- Minimize system stress due to unknown system malfunctions, (e.g. open network protectors).
- Capability to survive simultaneous component failures without catastrophic system

degradation.

- Increase time to make operational decisions while under contingency operation.
- A highly positive Return on Investment when considering the avoidance of the risk inherent from catastrophic failure.

c. Project Scope

[redacted]

[redacted]

[redacted]

Major Material:

- Network Transformer 1
- Network Protector 1
- UCT 1
- Duct bank .....750'
- Ring Bus 5
- Relay 1
- Recloser 6

4. Alternatives Considered

Alternatives were considered (please describe below)

An alternative considered was to [redacted]

5. Project Schedule

Add any additional milestones that are pertinent to the project.

Milestone/Phase Name	Estimated Date
100% Detailed Engineering Completion	May, 2020
Partial Approval	May, 2020
Construction Started	December, 2020
Fully Funded	June, 2023
In Service Date	December, 2023

6. Regulatory Decisions

7. Codes and Standards

8. Risk and Contingencies

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.
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	Medium	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.
Storm delays	2023	Low	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. Most of this work will require system to be abnormal for any extended period of time.

9. References

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

Attachment	Included in Submittal?

A. Cost Summary	YES
B. Oneline	YES
C. Load Sheet	YES
D. Geographic Map	YES
E. Partial Funding PAF	YES

Attachment A: Cost Summary:

Segment 1: Electrical Work

Estimate

Preliminary Estimate Summary

Revision Number:	2
Contingency:	24.00%
SubTotal:	$1,055,929
Contingency Amount:	$253,423
Estimate:	$1,309,352
Reimbursement:	$0
Net Amount:	$1,309,352

Description:

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING Network	16-ALL15	[redacted]		$56,195.20
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18			$10,000.00
POLE OH - POLE - 3ph (CL&P custodian)	16-OH14			$4,676.00
SECTIONALIZE OH - Cutouts or Arresters - 3ph	16-OH20			$2,315.20
SECTIONALIZE OH - Recloser - 3ph	16-OH38			$47,989.60
DB CABLE DB/UG - #1 - 3-1/C (3ph) Al	16-UG112			$6,080.00
DB CABLE DB/UG - 4/0 - 3-1/C (3ph) Al	16-UG113			$1,660.00
UG CABLE UG - Network Secondary Ring Bus	16-UG118			$460,000.00
XF UG - Submersible XF, 3-1ph - in manhole/vault	16-UG133			$49,488.80

XF UG - Network XF	16-UG134	[redacted]	$41,200.00
XF UG - Network Protector	16-UG135		$28,840.00
XF UG - CM-22 network protector relay	16-UG136		$5,000.00
CONDUIT UG-Ductline-up to 12 duct - Traveled Way / Paved	16-UG137		$134,504.00
ENCLOSURE UG - Network Vault or Switch Vault	16-UG144		$148,468.00
POLE DB/UG - Riser - 3ph	16-UG146		$10,794.40
CONDUIT DB - Conduit Installation	16-UG152		$6,720.00
UG CABLE UG - Copper Secondary in Conduit	16-UG153		$777.60
XF UG - Network XF Removal	16-UG134		$41,200.00

Segment 2: Civil Work

Estimate

Preliminary Estimate Summary

Revision Number:	3
Contingency:	24.00%
SubTotal:	$388,706
Contingency Amount:	$93,289
Estimate:	$481,995
Reimbursement:	$0
Net Amount:	$481,995

Description:

Item Description	CU	$ / Per	Qty	Amount
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18	[redacted]		$15,000.00
UG CABLE DB/UG - 350/500 - 3-1/C (3ph) Cu	16-UG114			$83,520.00
CONDUIT UG-Ductline-up to 12 duct - Traveled Way / Paved	16-UG137			$125,120.00
OTHER OTHER Contractor Adjustment	16-ALL14			$165,066.00

Segment 3: Contingency load relief

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$323,633
Contingency Amount:	$77,672
Estimate:	$401,305
Reimbursement:	$0
Net Amount:	**$401,305**
Description:	

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	16-ALL17	[redacted]		$14,038.40
TRAFFIC OH/DB/UG - Traffic Control - Flagger	16-ALL19			$7,000.00
SECTIONALIZE OH - Recloser - 3ph	16-OH38			$287,937.60
SECTIONALIZE OH - Recloser Control - setting changes only	16-OH39A			$14,656.80

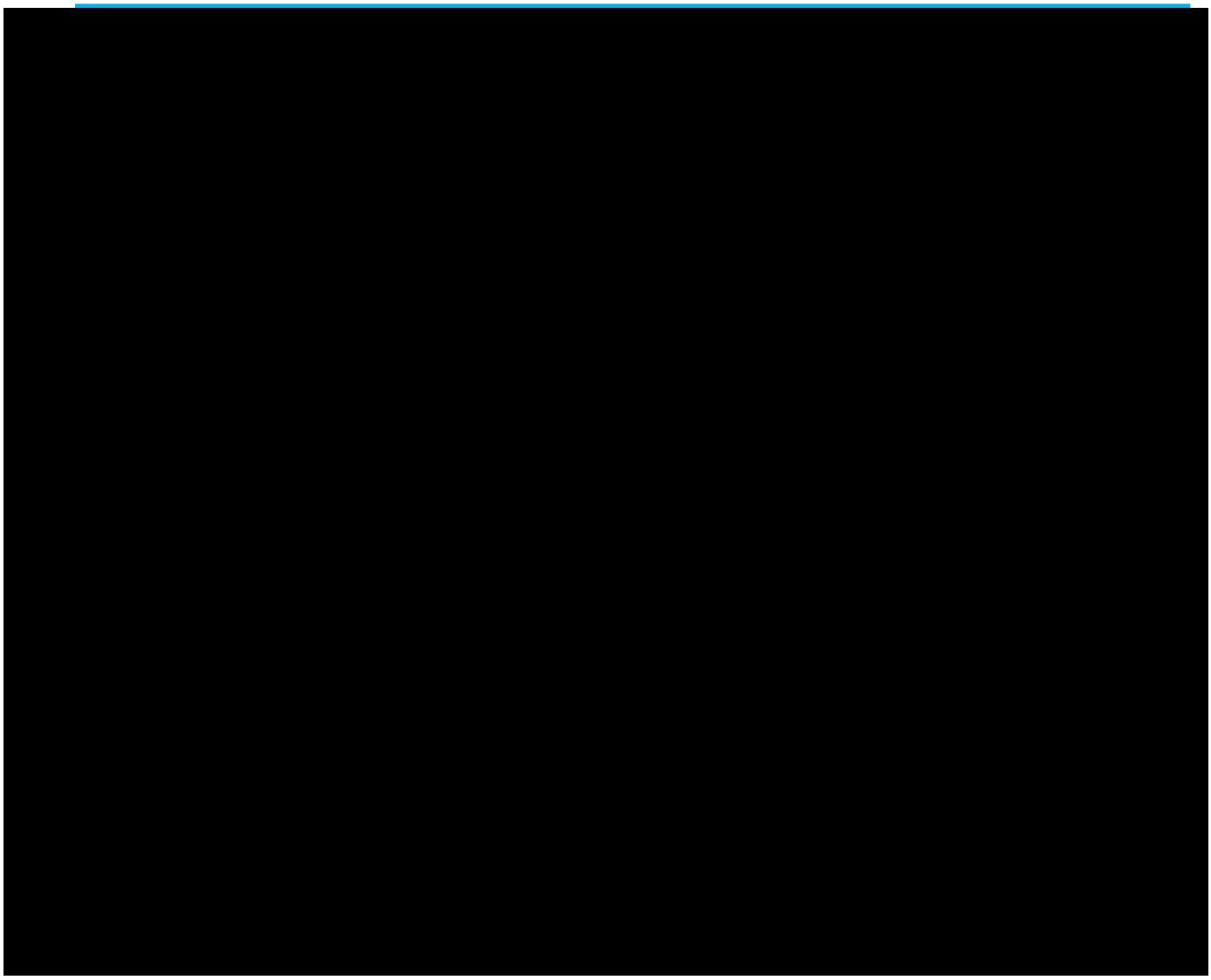
PDF

CD01385_project_needs_statement_opt1.p

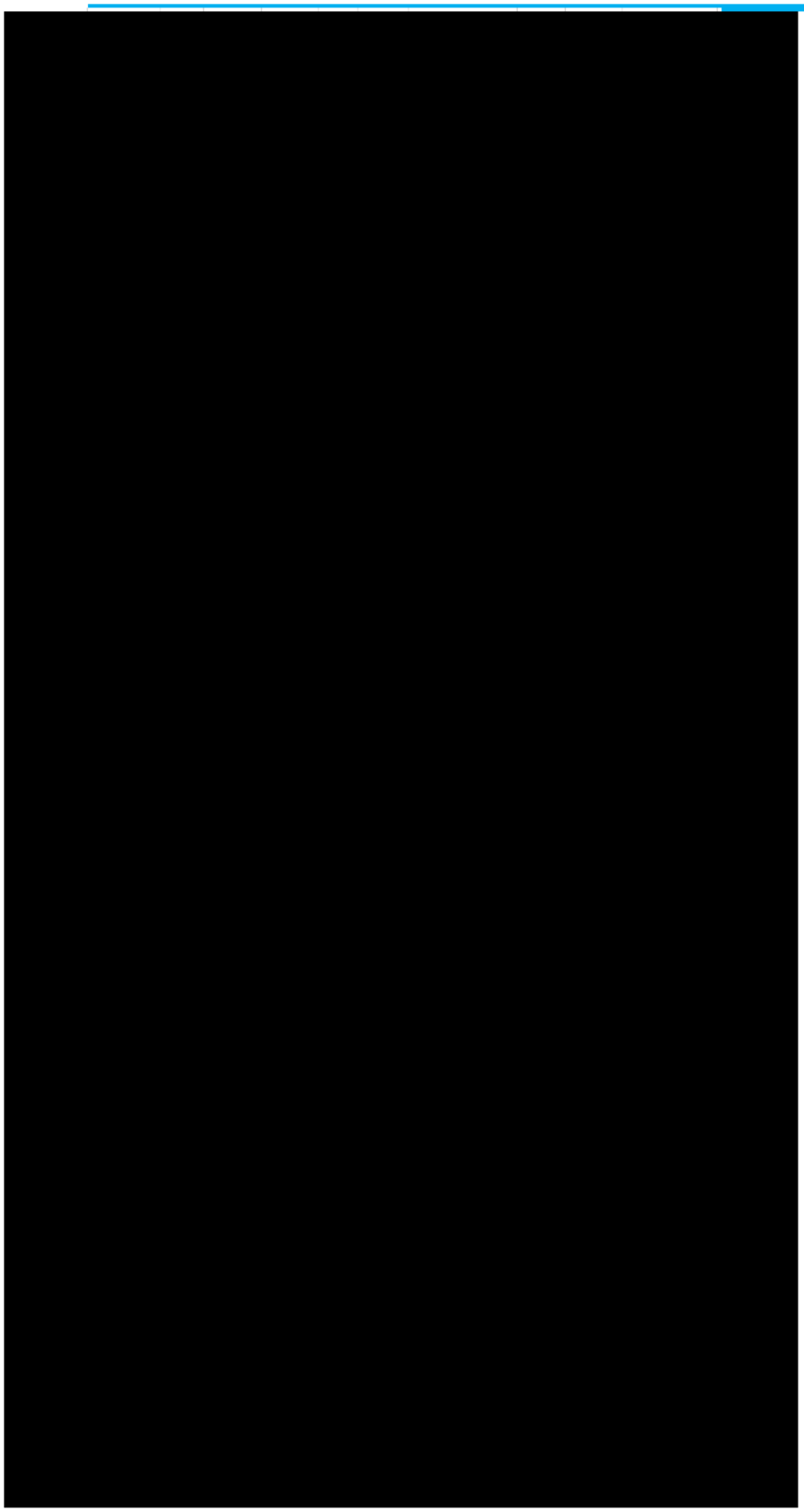
Attachment B: Oneline:

[redacted]





[redacted]



load Projection R1.xlsx

Attachment C: Geographic Map:



Attachment C: Partial Funding PAF:

Operations Project Authorization Form

Date Prepared: 09/10/19	**Project Title:** [redacted]
Company/ies: Eversource CT	**Project ID Number:** CD01385
Organization: Distribution Electric	**Class(es) of Plant:** Distribution
Project Initiator: [redacted]	**Project Category:** Line
Project Manager: [redacted]	**Project Type:** Reliability Improvements Specific Projects
Project Sponsor: [redacted]	**Project Purpose:** Raise Network reliability from [redacted]
Estimated in service date: 12/31/2021	**If Transmission Project: PTF? N/A**
Eng. /Constr. Resources Budgeted?	**Capital Investment Part of Original Operating Plan?**
Authorization Type: Preliminary Funding	**O&M Expenses Part of the Original Operating Plan?**
Total Request: $2,192,652	

Financial Requirements:

Project Authorization
ERM: _____

FP&A: _____

Executive Summary
This project is required to raise the resiliency of the [redacted]

The completion of this project will accomplish the following:

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

[redacted]

Project Costs Summary

	Prior Authorized	2020	2021	2022+	Totals
Capital Additions - Direct	$0	$274,812	$975,341	$0	$1,250,153
Less Customer Contribution	$0	$0	$0	$0	$0
Removals net of Salvage ____%	$0	$25,356	$89,992	$0	$115,348
Total - Direct Spending	$0	$300,169	$1,065,333	$0	$1,365,501
Capital Additions - Indirect	$0	$163,421	$580,001	$0	$743,422
Subtotal Request	$0	$463,590	$1,645,334	$0	$2,108,923
AFUDC	$0	$3,696	$13,118	$0	$16,815
Total Capital Request	$0	$467,286	$1,658,452	$0	$2,125,738
O&M	$0	$14,709	$52,204	$0	$66,913
Total Request	$0	$481,995	$1,710,656	$0	$2,192,651

Financial Evaluation

Direct Capital Costs	2020	2021	2022+	Total
Straight Time Labor	$20,409	$72,433	$0	$92,842
Overtime Labor	$3,725	$13,219	$0	$16,944
Outside Services	$204,936	$727,343	$0	$932,279
Materials	$70,207	$249,174	$0	$319,381
Other, including contingency amounts (describe)	$891	$3,163	$0	$4,055
Total Direct Costs	**$300,169**	**$1,065,333**	**$0**	**$1,365,501**

Indirect Capital Costs	2020	2021	2022+	Total
Indirects/Overheads (including benefits)	$163,421	$580,001	$0	$743,422
Capitalized interest or AFUDC, if any	$3,583	$12,715	$0	$16,298
Total Indirect Costs	**$167,004**	**$592,716**	**$0**	**$759,719**
Total Capital Costs	**$467,172**	**$1,658,048**	**$0**	**$2,125,221**
Less Total Customer Contribution	**$0**	**$0**	**$0**	**$0**
Total Capital Project Costs	**$467,172**	**$1,658,048**	**$0**	**$2,125,221**
Total O&M Project Costs	**$14,823**	**$52,608**	**$0**	**$67,430**

Total Project Cost	**$ 481,995**	**$ 1,710,656**	**$ -**	**$2,192,651**

Technical Justification:

Project Need Statement

The [redacted]

Project Objectives

[redacted]

Below are the steps that will guide the design process:

- Reinforcement through redundancy
- Diversification of supply
- Contraction of the network where appropriate

Project Scope

[redacted]



Major Material:

- Network Transformer ……1
- Network Protector ……..1
- UCT ……...1
- Duct bank ……..…..750’
- Ring Bus ……..5
- Relay ……1
- Recloser ……..……...6

Background / Justification

The justification for this project is based on the following:

- Offer a higher level of service to a downtown load area.

- Offset system stress, (secondary loading), resulting from poor component reliability.
- Minimize system stress due to unknown system malfunctions, (e.g. open network protectors).
- Capability to survive simultaneous component failures without catastrophic system degradation.
- Increase time to make operational decisions while under contingency operation.
- A highly positive Return on Investment when considering the avoidance of the risk inherent from catastrophic failure.

Business Process and / or Technical Improvements

REINFORCEMENT

[redacted]

[redacted]

[redacted]

[redacted]

Refer to Distribution Capital Project Approval Process
JA-AM-2001-B, Rev.1

DIVERSIFICATION

[redacted]

NETWORK CONTRACTION

[redacted]

Alternatives Considered with Cost Estimates

Option 2 provides an alternative to [redacted] is approximately $2,169,380.

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Preliminary Approval	05/04/20
Civil Work – [redacted]	12/31/20
Electrical work/ Civil Work – [redacted]	12/31/21
Load Relief	12/31/21

Regulatory Approvals

N/A

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2021	Medium	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
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References

27.6 kV Loading R1.pdf

[redacted] Simulations.pdf

voltage limits.pdf

[redacted] 27.6kV Oneline.pdf

load Projection R1.xlsx

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

[redacted]