EVERSOURCE

Project Approval Form

Project Title: [redacted]	**Project Number: CD02394**
Date Prepared: 01/14/2025	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** OVERLOADS-SPECIFIC PROJECTS
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: 06/1/2025	
Total Capital Request: $346.8K	**Authorization Type:** Full Funding

1. Executive Summary

Full funding is being requested for this project at a cost of $347K which is 112% of the partial funding estimate of $310K. CD02394 was partially approved on 3/14/2024. There is no scope change on the project. This project falls within the 15% threshold relative to the partial funding estimate and is being requested with no further changes anticipated.

The original project was presented as follows:

[redacted]

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

- *Project Location*
  - *Division: Central*
  - *District: Hartford AWC*
  - *City/Town: Hartford*

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2025	2026	Year 3+	Total
Internal Labor and Construction Equipment	15.4	0.0	0.0	15.4
Outside Services	94.5	0.0	0.0	94.5
Materials	53.7	0.0	0.0	53.7
Removals	11.8	0.0	0.0	11.8
Risk and Contingency	24.2	0.0	0.0	24.2
Other	0.0	0.0	0.0	0.0
Subtotal	**199.6**	**0.0**	**0.0**	**199.7**

Indirect Capital Costs	2025	2026	Year 3+	Total
Indirects/Overheads (including benefits)	147.2	0.0	0.0	147.2
Capitalized interest or AFUDC, if any	0.0	0.0	0.0	0.0
Subtotal	**147.2**	**0.0**	**0.0**	**147.2**

Total Capital Costs (Gross)	**346.8**	**0.0**	**0.0**	**346.8**

Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**

Project Costs (Net of Reimbursement)	**346.8**	**0.0**	**0.0**	**346.8**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

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

b. Project Need

- [redacted].

c. Project Scope

[redacted]

[redacted]

- Major Materials:
    - One new 2-way tie recloser.
    - 650 ft of 3 phase 336 TW.

4. Alternatives Considered

[redacted]

[redacted]

Authorization Type	Partial	Partial	Full
Capital Cost	$2,513K	$151.7K	$346.8K
Expense Cost	$78K	$4.7K	$13.8K
Total Cost	$2,591K	$156.4K	$360.6K
Cost per MVA added	$454K	Not applicable	Not applicable
Preferred option			X

5. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Partial Approval	March 2024
100% Detailed Engineering Completion	August 2024
Fully Funded	January 2025
Construction Start	March 2025
In Service Date	June 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. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Internal construction resources not available to perform the work.	2025	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.	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.
Storm delays	2025	Medium	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2025	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods.

9. References

References
1. System Planning Book
2. DESM 06.604

2.7.2. Distribution System Reliability

Distribution Feeder design is intended to provide safe, reliable service within allowed voltage limits at a reasonable cost. Reliability generally addresses interruptions of service exceeding the targets specified by state regulators. Eversource uses three reliability measures adopted by the utility industry: SAIDI, SAFI and CAIDI, refer to DSEM 02.11. There are limits as to what degree of reliability is practical or achievable, depending on the investment cost and rates permitted by regulatory authorities. To evaluate the effectiveness of reliability projects and determine the most cost-effective solution Eversource follows DSEM 03.30.

To maintain approved regulatory reliability indices, the following solutions can be implemented in areas of the distribution system that required reliability improvement:

- Add automatic sectionalizing devices to limit exposure to 500 customers or less per switchable zone. Refer to DSEM 02.30, DSEM 06.51, and DSEM 10.42.
- Eliminate or reconfigure triple circuit pole lines to minimize customer exposure for single emergency events that result in more than 1000 customers out of service
- Reconfigure double circuit pole lines where both the normal and alternate source supply the same group of customers resulting in more than 1000 customers out of service.

Overhead Design
Section 06.60

Selection of Overhead Distribution Construction Type

06.604

2. Interdependence Considerations

   a. *Circuits That Back Each Other Up* – Circuits on the same pole line should not be alternative supplies for the same load. If this is unavoidable, construct one of the circuits as an express, *aerial cable* circuit.

   b. *Aerial Cable* – Use fully insulated aerial cable for the second express circuit on a pole line if higher security is indicated for the express circuit or to avoid tree trimming required for open wire construction of the second circuit. This could be an important issue where the increased tree trimming for two open wire circuits is difficult to obtain.

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

Attachment	Included in Submittal?
A1. Partial Funding PAF	*YES*
A. Cost Estimate	*YES*
B. P6 Schedule	*NO*
C. Geographic Map	*YES*
D. System and Station One-Lines	*YES*
E. Load Sheet Analysis	*YES*

EVERSOURCE

Project Approval Form

A1 – Partial Funding PAF:

Project Title: [redacted]	**Project Number: CD02394**
Date Prepared: 01/24/2024	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** OVERLOADS-SPECIFIC PROJECTS
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: 06/1/2025	
Total Capital Request: $310.4K	**Authorization Type:** Partial Funding

11. Executive Summary

[redacted]

- Project Location
  - Division: Central
  - District: Hartford AWC
  - City/Town: Hartford

12. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2025	Total
Internal Labor and Construction Equipment	13.0	13.0
Outside Services	105.7	105.7
Materials	53.0	53.0
Removals	23.5	23.5
Other	2.1	2.1
Risk and Contingency	0.0	0.0
Subtotal	**197.2**	**197.2**

Indirect Capital Costs	2025	Total
Indirects/Overheads (including benefits)	106.2	106.2
Capitalized interest or AFUDC, if any	7.0	7.0
Subtotal	**113.3**	**113.3**
Total Capital Costs (Gross)	**310.4**	**310.4**
Less Total Customer Contribution	**0.0**	**0.0**
Project Costs (Net)	**310.4**	**310.4**

13. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

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

b. Project Need.

- [redacted]

c. Project Scope

[redacted]



Major Materials:

- **One new 2-way tie recloser.**
- **650 ft of 3 phase 336 TW.**

14. Alternatives Considered



[redacted]

[redacted]

[redacted]

[redacted]

Authorization Type	Partial	Partial	Partial
Capital Cost	$2,513K	$151.7K	$310.4K

Expense Cost	$78K	$4.7K	$9.7K
Total Cost	$2,591K	$156.4K	$320.1K
Cost per MVA added	$454K	Not applicable	Not applicable
Preferred option			X

15. Project Schedule

Milestone/Phase Name	Estimated Date
Partial Approval	March 2024
100% Detailed Engineering Completion	August 2024
Fully Funded	September 2024
Construction Start	March 2025
In Service Date	June 2025

16. Regulatory Decisions

N/A

17. Codes and Standards

N/A

18. 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. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Internal construction resources not available to perform the work.	2025	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.	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.
Storm delays	2025	Medium	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2025	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods.

19. References

References
1. System Planning Book
2. DESM 06.604

2.7.2. Distribution System Reliability

Distribution Feeder design is intended to provide safe, reliable service within allowed voltage limits at a reasonable cost. Reliability generally addresses interruptions of service exceeding the targets specified by state regulators. Eversource uses three reliability measures adopted by the utility industry: SAIDI, SAFI and CAIDI, refer to DSEM 02.11. There are limits as to what degree of reliability is practical or achievable, depending on the investment cost and rates permitted by regulatory authorities. To evaluate the effectiveness of reliability projects and determine the most cost-effective solution Eversource follows DSEM 03.30.

To maintain approved regulatory reliability indices, the following solutions can be implemented in areas of the distribution system that required reliability improvement:

- Add automatic sectionalizing devices to limit exposure to 500 customers or less per switchable zone. Refer to DSEM 02.30, DSEM 06.51, and DSEM 10.42.
- Eliminate or reconfigure triple circuit pole lines to minimize customer exposure for single emergency events that result in more than 1000 customers out of service
- Reconfigure double circuit pole lines where both the normal and alternate source supply the same group of customers resulting in more than 1000 customers out of service.

Overhead Design Section 06.60 | **Selection of Overhead Distribution Construction Type** | **06.604**

2. Interdependence Considerations

   a. *Circuits That Back Each Other Up* – Circuits on the same pole line should not be alternative supplies for the same load. If this is unavoidable, construct one of the circuits as an express, *aerial cable* circuit.

   b. *Aerial Cable* – Use fully insulated aerial cable for the second express circuit on a pole line if higher security is indicated for the express circuit or to avoid tree trimming required for open wire construction of the second circuit. This could be an important issue where the increased tree trimming for two open wire circuits is difficult to obtain.

20. 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. Load Sheet Analysis	*YES*

Attachment A – Cost Estimates

Option 1 [redacted]

Estimate

Preliminary Estimate Summary	
Revision Number:	0
Contingency:	24.00%
SubTotal:	$2,089,855
Contingency Amount:	$501,565
Estimate:	$2,591,420
Reimbursement:	$0
Net Amount:	**$2,591,420**

Description:

Item Description	CU	Amount
ENCLOSURE UG - MANHOLE - Precast	23-UG139	$163,764.64
TRAFFIC OH/DB/UG - Traffic Control - Police Officer 2 Days worth of cop labor in two locations.	23-ALL18	$4,000.00
OTHER OTHER 30% Contractor adder.	23-ALL14	$480,300.00
CONDUIT UG-Ductline-up to 12 duct - Traveled Way / Paved 450 ft of ductbank needed, but total is doubled to account for extra	23-UG137	$365,976.00
CONDUIT UG-Ductline-up to 12 duct - Traveled Way / Paved From outside [redacted] substation along driveway to Albany Ave MH #27	23-UG137	$731,952.00
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average Laber per switching order.	23-ALL17	$4,562.48
UG CABLE UG - Cable Removal - all cables Starting from [redacted]station thru to MH #38 Albany Ave	23-UG117	$58,500.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu Starting from [redacted]tation thru to MH #38 Albany Ave	23-UG114B	$280,800.00

Option 2 [redacted]

Design Alternative CD02394-01

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$126,065
Contingency Amount:	$30,256
Estimate:	$156,321
Reimbursement:	$0
Net Amount:	**$156,321**
Description:	Remove fuse and disconnect switch in parallel p# 5247 on cottage grove rd.

Item Description	CU	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average	23-ALL17	$4,562.48
TRAFFIC OH/DB/UG - Traffic Control - Police Officer # days *1000/day or 15%	23-ALL18	$13,051.00
OTHER OTHER 30% Contractor Adder	23-ALL14	$26,010.00
SECTIONALIZE OH - Recloser - 3ph Cost to replace 3B06-13T (GOAB) with 3B06-9XT	23-OH38	$62,386.48
SECTIONALIZE OH - Remove Recloser (any) Remove fuse and disconnect switch in parallel p# 5247 on cottage	23-OH42	$7,352.80
SECTIONALIZE OH - Recloser Control - setting changes only Reprogramming [redacted]	23-OH39A	$12,702.56

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Option 3 [redacted] (Preferred):

Design Alternative CD02394-03

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	24.00%
SubTotal:	$258,163
Contingency Amount:	$61,959
Estimate:	$320,123
Reimbursement:	$0
Net Amount:	**$320,123**
Description:	[redacted]

Item Description	CU	Amount
OH WIRE OH - Remove circuit wire (3 phase) 1100 ft of both [redacted]	23-OH37A	$4,576.00
OTHER OTHER 30% Contractor Contingency	23-ALL14	$52,469.00
SECTIONALIZE OH - Recloser - 3ph Installation of Tie recloser	23-OH38	$62,386.48
OH WIRE OH - Line Extension - 3ph (336 kcmil) part of new tie recloser installation on the new pole.	23-OH33	$87,880.00
TRAFFIC OH/DB/UG - Traffic Control - Police Officer Police took 15% of subtotal, did not include switching	23-ALL18	$26,234.00
SECTIONALIZE OH - Remove Recloser (any) Remove fuse and disconnect switch in parallel p# 5247 on cottage grov	23-OH42	$7,352.80
SECTIONALIZE OH - Recloser Control - setting changes only Reprogramming 2 sectionalizing reclosers	23-OH39A	$12,702.56
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Average The tie recloser will do the switching.	23-ALL17	$4,562.48

Attachment C – Geographic Maps

Option 1:



Option 2 ([redacted]):



Option 3: (Preferred, [redacted])



Attachment D – System and Station One Lines

[redacted]



[redacted]

[redacted]

After [redacted] (Option 2):

[redacted]

After 3B04 and 3B06 (Option 3):

[redacted]

Attachment E – Load Sheet Analysis

Before:

[redacted]

After Option 1: [redacted]



