EVERSOURCE

Project Approval Form

Project Title: Energy Release MH covers – Western	**Project Number:** CD02324
Date Prepared: 08/12/2024	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** UNDERGROUND STRUCTURE ISSUE
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: 12/31/25	
Total Capital Request: $921.7K	**Authorization Type:** Full Funding

1. Executive Summary

Full funding is being requested for this funding project at a cost of **$921.7K** which is 152% of the partial funding capital estimate of $607.5K. CD02324 was partially approved on 11/22/2023. There is no scope change on the project. The increased cost between the full funding and partial funding estimates is due to the following:

- The Partial Funding used an estimate of $7,500 per location. The Full Funding came in at $10,445 per location, which is a 40% increase. When referencing the partial funding financial table, the main driver of the cost increase is material. The partial funding had material cost at $15,500 whereas the full funding had material at $190,700. The average cost per location of the frame and cover came out to $2,354.
- The full funding estimate used contractor estimates for the work that came out to $3,844 per location. The bids for the associated work came out to $311,405, where the partial estimate was $393,900 or a decrease of $82,495.
- Four covers were replaced this year because they were paved over and needed to be raised, which contributed to the charges in 2024. The remaining 77 locations will be completed in 2025. The frames and covers for Norwalk were charged out before the project was deferred and BCW would not take them back, so that cost is also represented in 2024.

The Original Project was presented as follows:

Energy Release MH covers are made such that they do not dislodge from MH structures in the event of a splice/cable failure in the manholes. Eversource created a program to replace existing MH covers throughout its territory with new energy release manhole covers. This will begin in 2024 with a $1.5M investment across the state. Years 2025 and beyond will see investments being made as well. The $1.5M for 2024 will be spent across the 3 divisions with the highest priority holes being done first. Holes are prioritized as shown:

Priority	Description
1	Outdoor Dining Areas
2	High Pedestrian and Vehicular Traffic
3	Downtown areas
4	Holes containing High Fault Duty circuits
5	Getaway manholes
6	Other

Of the $1.5M allocated for next year, $583.3K has already been allocated for two previously presented and approved projects (CD02220 and CD02254) to install a total of 74 covers in Greenwich, CT. The remaining $929.2K will be used to replace 124 covers that have been identified as priority 1 throughout the state at an average cost of approximately $7,500 each in 2024.

This project is being created to request Partial Funding at a cost of $607.5K to install Energy Release MH covers at 81 priority 1 holes in the Western region of Connecticut throughout 2024. The manholes being addressed are shown in Attachment "B".

Location Information:

Division: Western

Districts: Stamford, Norwalk, Newtown, Waterbury, Torrington, Falls Village

City: Various Cities/Towns

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2024 Actual	2025 Estimate	Total
Internal Labor and Construction Equipment	3.4	18.0	21.4
Outside Services	34.5	183.2	217.6
Materials	30.2	160.5	190.7
Removals	7.6	48.6	56.2
Risk and Contingency	0.0	75.7	75.7
Other	0.0	0.0	0.0
Subtotal	**75.6**	**486.0**	**561.6**

Indirect Capital Costs	2024 Actual	2025 Estimate	Total
Indirects/Overheads (including benefits)	33.2	324.6	357.9
Capitalized interest or AFUDC, if any	2.3	0.0	2.3
Subtotal	**35.5**	**324.6**	**360.1**

Total Capital Costs (Gross)	**111.1**	**810.6**	**921.7**
Less Total Customer Contribution			
Project Costs (Net of Reimbursement)	**111.1**	**810.6**	**921.7**

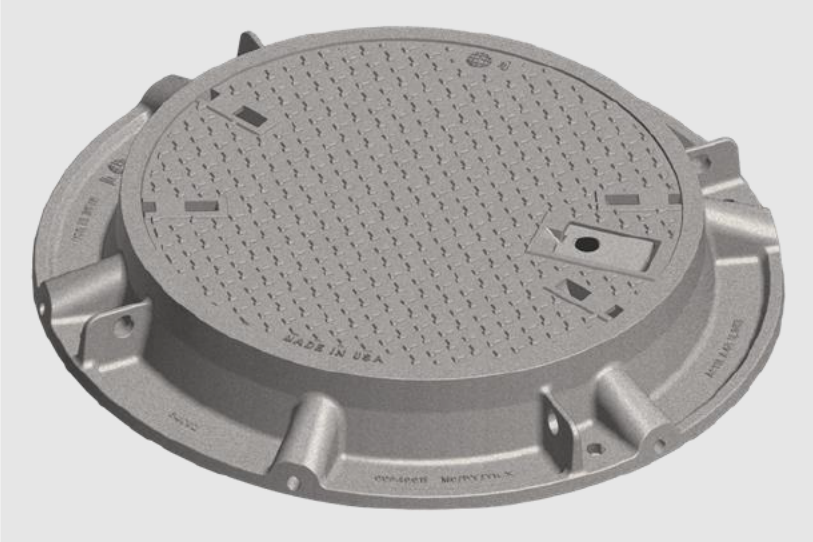
3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

Two types of Energy Release Manhole Covers and Frames were piloted on Eversource's system in early 2023 – Neenah and East Jordan. The preference is for East Jordan (EJ) covers. Some specifications of EJ covers and frames are as follows:

- Designed to restrain the cover during explosion.
- Cover is allowed to lift providing relief of internal pressure.
- Currently tooled for various sizes ranging from 26" – 40" diameter. Other sizes are available upon request.
- Heavy duty (AASHTO H25 rated)
- Optional security bolt



b. Project Need

Cable faults in manholes sometimes cause an explosion that dislodges the manhole covers and they get launched up in the air. This poses a danger to pedestrians and could cause property damage. Eversource created a program to proactively replace all manhole covers throughout the state with new energy release covers. These new covers would release the energy caused from faults and gaseous build up in these manholes, and not allow the covers to be dislodged from the manholes. There are approximately 8,400 manholes on Eversource's UG system that are not of the Energy Release type – 2,330 of these are in the Western region. At an average cost of approximately $7,500 per manhole cover replacement, 81 high priority covers will be replaced in Western Connecticut throughout 2024.

c. Project Scope

Replace 81 existing manhole frame and covers with new energy release frames and covers according to highest priorities throughout Western AWCs as shown in Attachment "B"

4. Alternatives Considered

The alternative to doing this project would be to leave the existing manhole frames and covers in place. Eversource has developed a program to proactively replace existing manhole frames and covers with safer energy release frames and covers.

5. Project Schedule

Milestone/Phase Name	Estimated Date
Partial Approval	November 2023
100% Detailed Engineering Completion	March 2024
Fully Funded	August 2024
Construction Start	April 2024
In Service Date	December 2025

6. Regulatory Decisions

N/A

7. Codes and Standards

N/A

8. Risk and Contingencies

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2024	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	2024	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2024	High	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2024	High	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Technological risks involving integration of new technology	2024	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.

9. References

References
1. N/A

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

Attachment	Included in Submittal?
A1. Partial Funding PAF	*YES*
A. Cost Estimate	*YES*
B. Priority 1 Manholes	*YES*
C. Manhole Summary	*YES*
D. Partial PAF	*YES*

Please see Partial Funding PAF for attachments.

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Project Approval Form

A1: Partial Funding PAF

Project Title: Energy Release MH covers – Western 2024	**Project Number:** CD02324
Date Prepared: 09/19/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** UNDERGROUND STRUCTURE ISSUE
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: 12/31/2024	
Total Capital Request: $607.5K	**Authorization Type: Partial Funding**

1. Executive Summary

Energy Release MH covers are made such that they do not dislodge from MH structures in the event of a splice/cable failure in the manholes. Eversource created a program to replace existing MH covers throughout its territory with new energy release manhole covers. This will begin in 2024 with a $1.5M investment across the state. Years 2025 and beyond will see investments being made as well. The $1.5M for 2024 will be spent across the 3 divisions with the highest priority holes being done first. Holes are prioritized as shown:

Priority	Description
1	Outdoor Dining Areas
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Of the $1.5M allocated for next year, $583.3K has already been allocated for two previously presented and approved projects (CD02220 and CD02254) to install a total of 74 covers in Greenwich, CT. The remaining $929.2K will be used to replace 124 covers that have been identified as priority 1 throughout the state at an average cost of approximately $7,500 each in 2024.

This project is being created to request Partial Funding at a cost of $607.5K to install Energy Release MH covers at 81 priority 1 holes in the Western region of Connecticut throughout 2024. The manholes being addressed are shown in Attachment "B".

Location Information:

Division: Western

Districts: Stamford, Norwalk, Newtown, Waterbury, Torrington, Falls Village

City: Various Cities/Towns

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2024	2025	2026+	Total
Internal Labor and Construction Equipment	12.9	0.0	0.0	12.9
Outside Services	249.5	0.0	0.0	249.5
Materials	15.5	0.0	0.0	15.5
Removals	144.4	0.0	0.0	144.4
Other	0.5	0.0	0.0	0.5
Risk and Contingency	0.0	0.0	0.0	0.0
Subtotal	**422.8**	**0.0**	**0.0**	**422.8**

Indirect Capital Costs	2024	2025	2026+	Total
Indirects/Overheads (including benefits)	182.7	0.0	0.0	182.7
Capitalized interest or AFUDC, if any	2.0	0.0	0.0	2.0
Subtotal	**184.8**	**0.0**	**0.0**	**184.8**
Total Capital Costs (Gross)	**607.5**	**0.0**	**0.0**	**607.5**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Project Costs (Net)	**607.5**	**0.0**	**0.0**	**607.5**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

Two types of Energy Release Manhole Covers and Frames were piloted on Eversource's system in early 2023 – Neenah and East Jordan. The preference is for East Jordan (EJ) covers. Some specifications of EJ covers and frames are as follows:

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b. Project Need

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an average cost of approximately $7,500 per manhole cover replacement, 81 high priority covers will be replaced in Western Connecticut throughout 2024.

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5. Project Schedule

Milestone/Phase Name	Estimated Date
Partial Approval	October 2023
100% Detailed Engineering Completion	March 2024
Fully Funded	April 2024
Construction Start	April 2024
In Service Date	December 2024

6. Regulatory Decisions

N/A

7. Codes and Standards

N/A

8. Risk and Contingencies

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
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9. References

References
1. N/A

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

Attachment	Included in Submittal?
A. Cost Estimate	*YES*
B. Priority 1 Manholes	*YES*
. Manhole Summary	*YES*

Attachment A: Cost Estimate.

Design Alternative CD02324-01

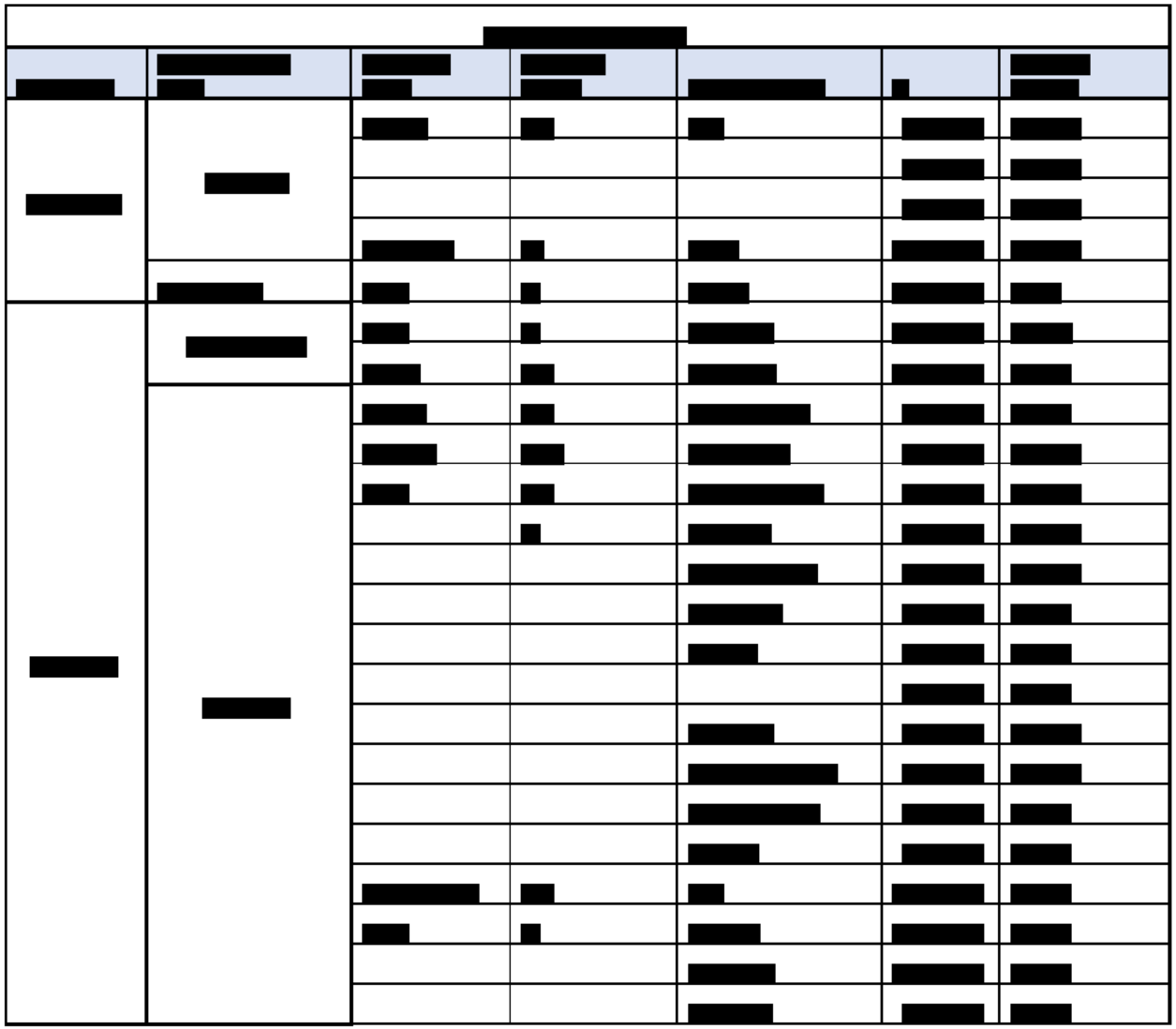
Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	24.00%
SubTotal:	$504,274
Contingency Amount:	$121,026
Estimate:	$625,300
Reimbursement:	$0
Net Amount:	**$625,300**
Description:	

Item Description	CU	[redacted]	Amount
OTHER	23-ALL14		$504,274.00
OTHER			

[redacted]



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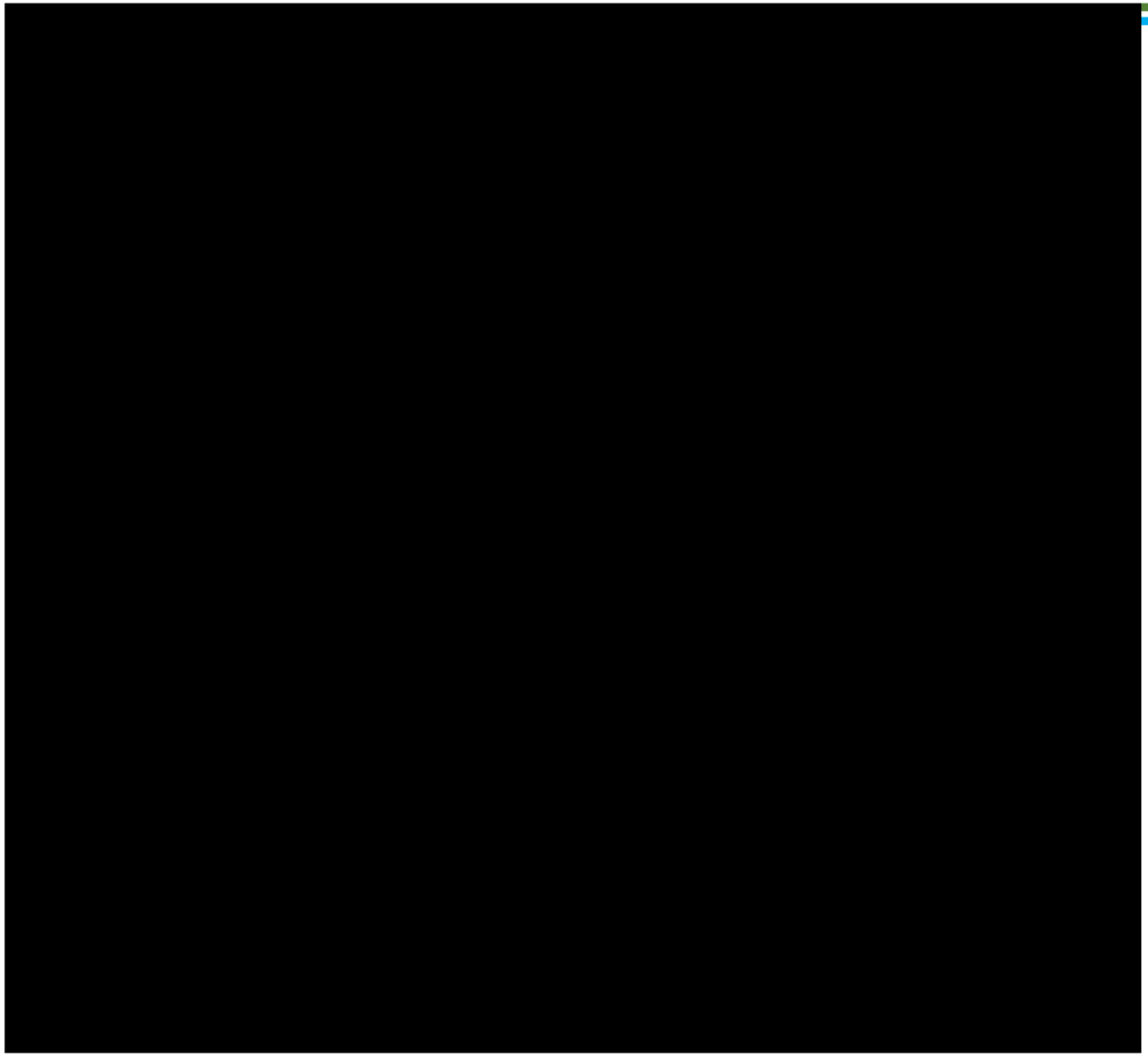

Project Approval Form



[redacted]

Attachment C: Priority 1 Manhole Summary

Priority 1 Summary		
Zone	**LOC District**	**Count**
CT CENTRAL	HARTFORD	19
CT EASTERN	MADISON	17
	NEW LONDON	7
CT WESTERN	NEWTOWN	5
	NORWALK	23
	STAMFORD	38
	TORRINGTON	2
	WATERBURY	13
Grand Total		**124**