EVERSOURCE

Project Approval Form

Project Title: Route 72/69 Bristol Intersection Improvements	**Project Number: CD01920**
Date Prepared: 08/16/2023	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** Line Relocations/Act of Public
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: 6/1/2023	
Total Capital Request: $1,582.5K ($78.7K)	**Authorization Type:** Full Funding

1. Executive Summary

The State of Connecticut is improving the Route 72/69 intersection in the City of Bristol. The construction is planned to start in October 2022.

[redacted]

[redacted]

[redacted]

[redacted]. This re-route comes at an additional cost of $389k which Eversource will pay.

The State will be contributing 50 percent for the work completed to relocate the two 13.8 kV circuits on the Route 72 pole line as described under trigger #1 of the utility relocation guideline.



Full Funding.

On June 16, 2022, the project's Partial Funding was approved for $1,167K. The Full Funding amount is $1,582.5K. The difference is $415.5K. The original Partial Funding estimate used old estimating units and no contractor costs were added. If 2023 estimating units were used, the Partial Funding amount would have been $1,819K. This would have the project coming in 13% percent less than the revised Partial Funding amount.

Work Request number ST3315112 covers the 50 percent reimbursable work the State of Connecticut will reimburse. The reimbursement amount based on the original work order estimate is $78.7k.

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2023	2024	2025	Total
Internal Labor and Construction Equipment	33.5	0.0	0.0	33.5
Outside Services	630.9	0.0	0.0	630.9
Materials	218.7	0.0	0.0	218.7
Removals	39.9	0.0	0.0	39.9
Risk and Contingency	31.0	0.0	0.0	31.0
Other	-3.1	0.0	0.0	-3.1
Subtotal	**951.0**	**0.0**	**0.0**	**951.0**

Indirect Capital Costs	2023	2024	2025	Total
Indirect/Overheads (including benefits)	611.7	0.0	0.0	611.7
Capitalized interest or AFUDC, if any	19.9	0.0	0.0	19.9
Subtotal	**631.5**	**0.0**	**0.0**	**631.5**
Total Capital Costs (Gross)	**1,582.5**	**0.0**	**0.0**	**1,582.5**
Less Total Customer Contribution	**-78.7**	**0.0**	**0.0**	**-78.7**
Project Costs (Net of Reimbursement)	**1,503.8**	**0.0**	**0.0**	**1,503.8**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

At the request of the State of Connecticut, facilities at the intersection of Routes 72 and 69 require relocation.

b. Project Need

- The State of Connecticut is widening and changing the roadway.

[redacted]

c. Project Scope

[redacted]

Major Material:

- 1,540 feet of 750 Al aerial cable.
- 11,055 feet of 556 TW
- 325 feet of 1,000 KCMIL Cu EPR.

4. Alternatives Considered

Option 2.

[redacted]

[redacted]

Project Option Comparison

	Option		
[redacted]			
Capital Cost	$1,582.5K	$925K	$M
Expense Cost	$20K	$11.7K	$M
Total Cost	$1,602.5K	$936.7K	$M
Total Cost / MVA added	$/MVA	$/MVA	$/MVA
Total Cost / CM Saved	$/CM	$/CM	$/CM
Total Cost / CI Saved	$/CI	$/CI	$/CI
Preferred option	X		

5. Project Schedule

Add any additional milestones that are pertinent to the project.

Milestone/Phase Name	Estimated Date
Partial Approval	7/31/2022
100% Detailed Engineering Completion	10/1/2022
Fully Funded	10/4/2023
Construction Start	6/1/2023
In Service Date	6/1/2023

6. Regulatory Decisions

No.

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.	2022/ 2023	Medium	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 /	2022/ 2023	Medium	Design to minimize customer impact. Project Preplanning and customer/community outreach.

Municipal approvals			
Internal construction resources not available to perform the work.	2022/ 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.	2022	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2022/ 2023	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2022/ 2023	Medium	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2022/ 2023	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system is abnormal for extended periods.
Technological risks involving integration of new technology	2022/ 2023	Medium	Before use of new technology ensure support of standards and manufacturer. Schedule projects to accommodate for extra time or ensure new technology is not on the critical path.
Wetlands / Environmentally sensitive area	2022/ 2023	Medium	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. P6 Schedule	*NO*
C. Geographic Map	*YES*
D. School Street Risers	*YES*
E. Load sheets	*YES*
F. State Highway Estimate Letter	*YES*
G. Partial Funding PAF	*YES*

A. Cost Estimate.

Preferred Option 1 (Segments 9, 10, and 11.)

Budget Summary - Preferred Option					Relocate the 11K1 to Pleasant Street	
2022					Expenditure	Net
ID	Title	Status	Rev	Contingency	Amount	Estimate
9	Relocate [redacted]to Pleasant Street	Prelim	0	28%	$389,326	$389,326
10	Fringe CDOT Without [redacted]	Prelim	0	28%	$387,868	$387,868
11	Segment One Minus th[redacted]	Prelim	0	28%	$414,166	$414,166
				2022 Total:	$1,191,359	$1,191,359
				Total Project:	$1,191,359	$1,191,359

Segment 9.

CD01920-09

General Information

Segment: 9 - Relocate [redacted] to Pleasant Street
Status: Prelim Design Approved
Segment Type: RELOCATION - OH SPECIFIC
Town: BRISTOL
Budget Year: 2022
Work Type: BB-Reconductoring
Trimming ☐
In Service Date: 12/31/2023
Description:

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	28.00%
SubTotal:	$304,161
Contingency Amount:	$85,165
Estimate:	$389,326
Reimbursement:	$0
Net Amount:	**$389,326**

Description:

Item Description	CU	Amount
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18	$35,000.00
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18	$30,000.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 336 kcmil Chestnut Street	16-OH26b	$48,720.00
POLE DB/UG - Riser - 3ph Chestnut Street pole #2509	16-UG146	$10,794.40
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 336 kcmil Church Street Pole #'s 2251 and 8001	16-OH26b	$10,092.00
ACT ACT Estimate for Contractor Crews Create a dead span between poles 8013 and 3169	16-ALL12	$3,000.00
OH WIRE OH - Reconductor w/Spacer Cable - 336 kcmil Pleasant Street	16-OH28	$94,400.00
POLE DB/UG - Riser - 3ph Pleasant Street Pole 2067	16-UG146	$10,794.40
OH WIRE OH - Reconductor w/Spacer Cable - 336 kcmil West Street Between Poles 4026 and 1374	16-OH28	$61,360.00

Segment 10.

CD01920-10

General Information

Segment: 10 - Fringe CDOT Without [redacted] Status: Prelim Design Approved

Segment Type: RELOCATION - OH SPECIFIC Town: BRISTOL Budget Year: 2022

Work Type: BB-Reconductoring Trimming ☐ In Service Date: 12/31/2023

Description: [redacted]

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	28.00%
SubTotal:	$303,022
Contingency Amount:	$84,846
Estimate:	$387,868
Reimbursement:	$0
Net Amount:	$387,868

Description:

Item Description	CU	Amount
OH WIRE OH - Line Extension w/Aerial Cable - (any gauge)	16-OH35	$103,680.00
SECTIONALIZE OH-Vertical Disconnect Switches-600/900 amp 3-1ph	16-OH43	$20,566.40
EQUIPMENT OH - Conversion - CUTOVER	16-OH58	$2,140.80
POLE DB/UG - Riser - 3ph	16-UG146	$32,383.20
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 336 kcmil 11K43	16-OH26b	$95,352.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu MH #64 to Pole #8003	16-UG114B	$10,080.00
UG CABLE DB/UG - 750/1000 - 3-1/C (3ph) Cu MH #91 to MH #64	16-UG114B	$20,160.00
XF DB/UG - Padmount XF - 3ph Pad #416	16-UG131	$6,299.20
EQUIPMENT OH - Conversion Prep Work - 1ph Poles 8005, 8011, 8015, 8016, and 1428.	16-OH56	$6,180.00
EQUIPMENT OH - Conversion Prep Work - 3ph Poles 8006, 3169 and 3432	16-OH57	$6,180.00

[redacted]

Segment 11.

CD01920-11

General Information

Segment: 11 - Segment One Minus the [redacted] Status: Prelim Design Approved

Segment Type: RELOCATION - OH SPECIFIC Town: BRISTOL Budget Year: 2022

Work Type: BB-Reconductoring Trimming ☐ In Service Date: 12/31/2023

Description:

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	28.00%
SubTotal:	$323,567
Contingency Amount:	$90,599
Estimate:	$414,166
Reimbursement:	$0
Net Amount:	**$414,166**
Description:	

Item Description	CU	[redacted]	Amount
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18		$30,000.00
POLE OH - JUNCTION POLE - 3ph (CL&P custodian)	16-OH14A		$46,761.60
OH WIRE OH - Reconductor w/Spacer Cable - 336 kcmil	16-OH28		$93,928.00
OH WIRE OH - Reconductor Open Wire Secondary w/ Triplex	16-OH30		$7,960.00
OH WIRE OH - Remove circuit wire (3 phase)	16-OH37A		$5,760.00
OH WIRE OH - Line Extension w/Aerial Cable - (any gauge) 11K45	16-OH35		$118,080.00
POLE DB/UG - Riser - 3ph 11K45 Aerial Cable Riser	16-UG146		$10,794.40
SECTIONALIZE OH-Vertical Disconnect Switches-600/900 amp 3-1ph 11K45 Aerial Cable termination	16-OH43		$10,283.20

Option 2 (Segments 1 and 8.)

CD01920-01

General Information

Segment: 1 - State Highway Reimbursement Segment Status: Draft

Segment Type: RELOCATION - OH SPECIFIC Town: BRISTOL Budget Year: 2022

Work Type: BB-Reconductoring Trimming ☐ In Service Date: 12/31/2023

Description: [redacted]

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Estimate

Preliminary Estimate Summary

Revision Number:	0
Contingency:	28.00%
SubTotal:	$340,344
Contingency Amount:	$95,296
Estimate:	$435,640
Reimbursement:	$0
Net Amount:	**$435,640**
Description:	Design from MAXIMO WR #ST3315112

Item Description	CU	Amount
TRAFFIC OH/DB/UG - Traffic Control - Police Officer	16-ALL18	$30,000.00
POLE OH - JUNCTION POLE - 3ph (CL&P custodian)	16-OH14A	$58,452.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 336 kcmil	16-OH26b	$44,544.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil	16-OH27	$44,620.00
OH WIRE OH - Reconductor Open Wire Secondary w/ Triplex	16-OH30	$7,960.00
OH WIRE OH-Install Aerial Cable-existing poles (any gauge) 11K43	16-OH36	$75,440.00
OH WIRE OH - Remove circuit wire (3 phase) 11K43 2/0 Cu	16-OH37A	$2,048.00
OH WIRE OH-Install Aerial Cable-existing poles (any gauge) 11K45	16-OH36	$75,440.00
OH WIRE OH - Remove circuit wire (3 phase) 11K45 2/0 Cu	16-OH37A	$1,840.00

[redacted]

EVERSOURCE

Project Approval Form

CD01920-08

General Information

Segment: 8 - Fringe of CDOT Paul's version
Status: Draft
Segment Type: RELOCATION - OH SPECIFIC
Town: BRISTOL
Budget Year: 2023
Work Type: Other
Trimming ☐
In Service Date: 3/3/2023
Description: Fringes of State Highway project Paul wrote up.

Itemized Work List

ID	Major Grid	Minor Grid	Description of Work to be Performed

Estimate

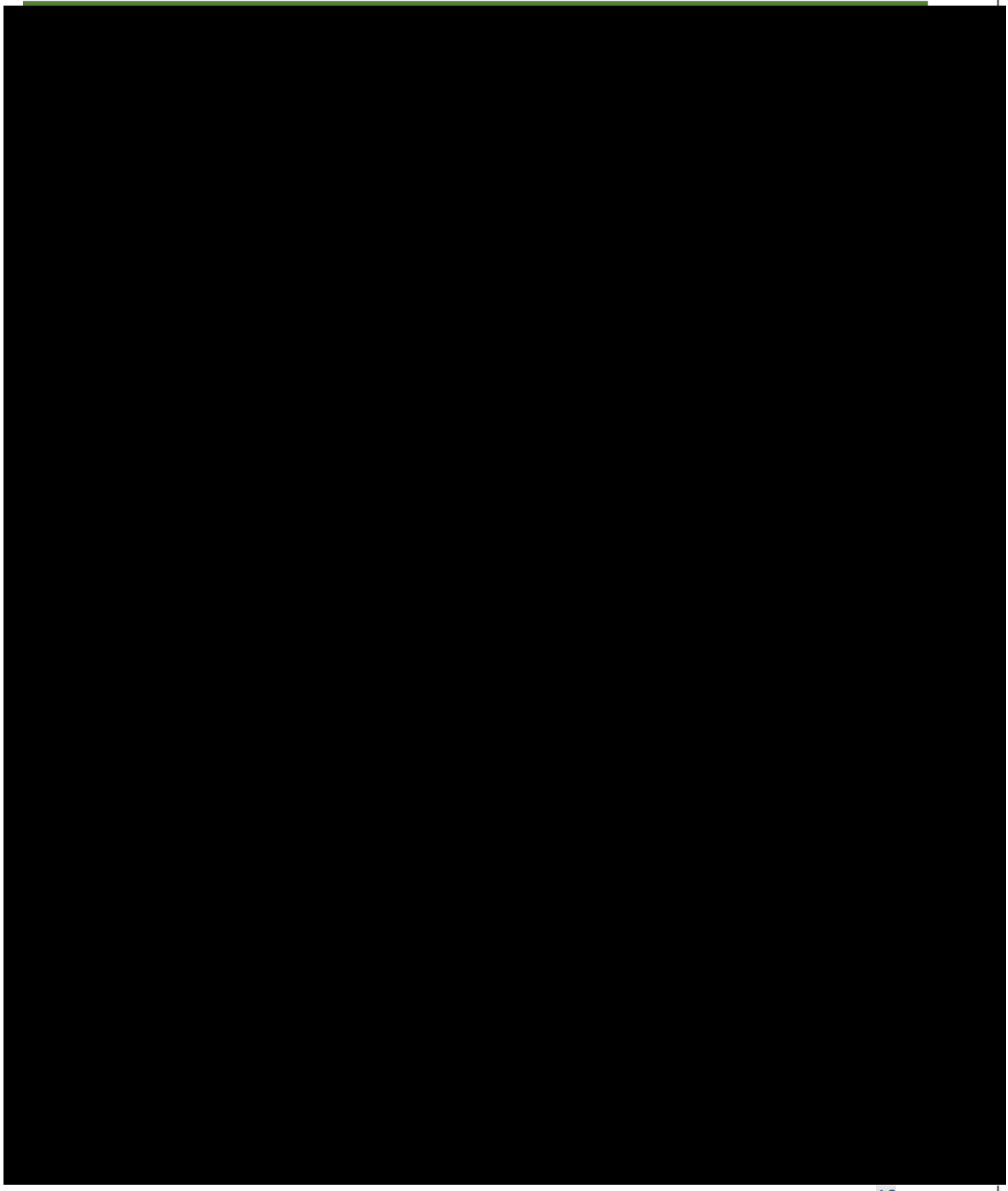
Preliminary Estimate Summary

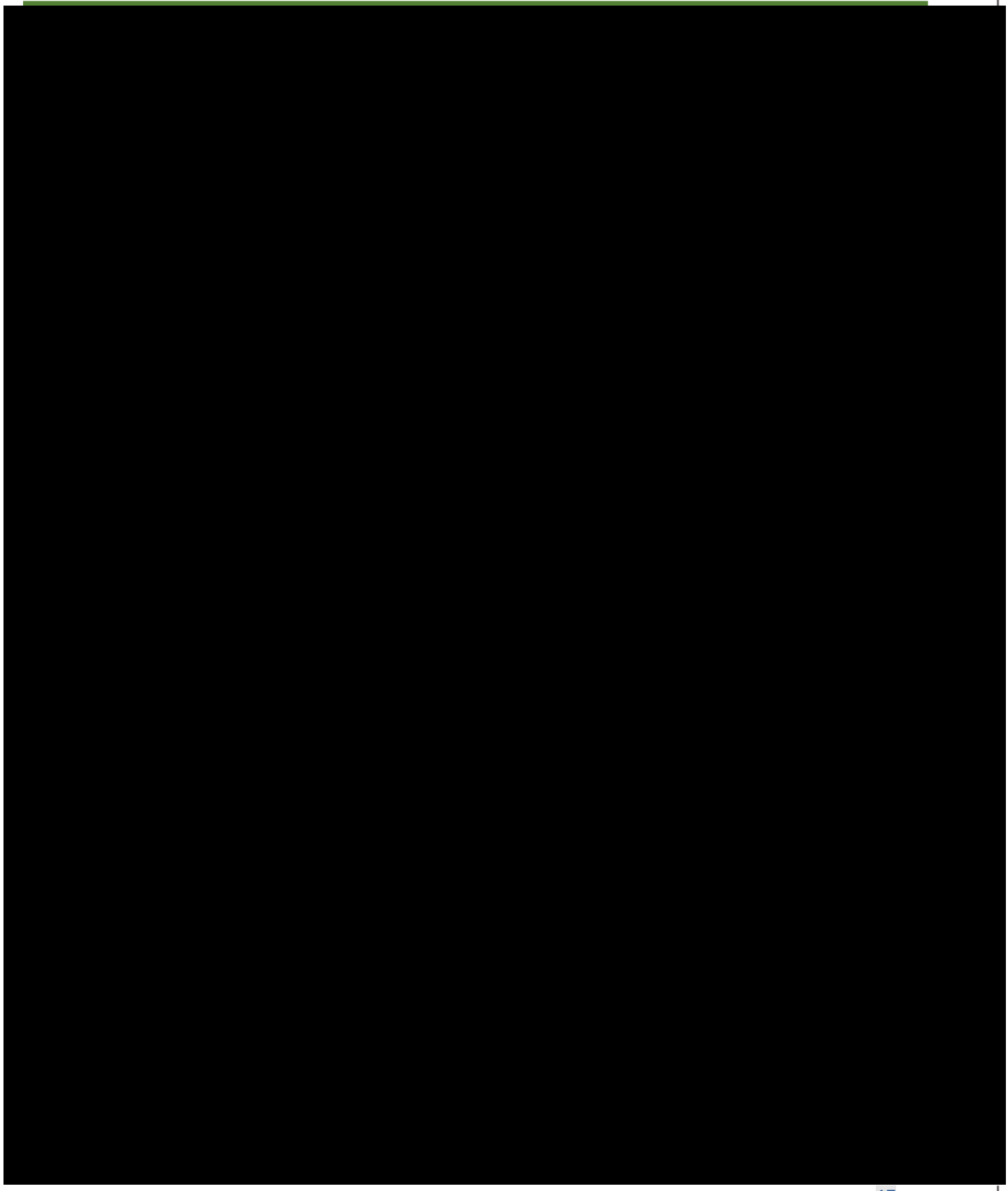
Revision Number:	0
Contingency:	28.00%
SubTotal:	$381,988
Contingency Amount:	$106,957
Estimate:	$488,945
Reimbursement:	$0
Net Amount:	**$488,945**

Description: Maximo Wr #7648751

Item Description	CU	Amount
SECTIONALIZE OH-Vertical Disconnect Switches-600/900 amp 3-1ph	16-OH43	$41,132.80
POLE DB/UG - Riser - 3ph	16-UG146	$32,383.20
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 556 kcmil East side of Project	16-OH27	$27,936.00
OH WIRE OH-Reconductor w/175 Mil Tree Wire-3ph- 336 kcmil East Side of project	16-OH26b	$70,296.00
OH WIRE OH - Line Extension w/Aerial Cable - (any gauge) East Side of Project	16-OH35	$210,240.00

[redacted]





[redacted]

[redacted]

G. Partial Funding PAF.

Operations Project Authorization Form

Project Title: Route 72/69 Bristol Intersection Improvements	**Project Number: CD01920**
Date Prepared: 06/02/2022	**Company:** Eversource CT
Organization: Electric Field Operations	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category:** Line Relocations/Act of Public Authority
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Capital Investment part of original Operating Plan:** No
Estimated in service date: 3/31/2023	**Emergency Related Request?** No
Eng./Constr. Resources Budgeted? No	**Facility Type** (check all that apply)**:** ☐ PTF ☐ non-PTF ☒ Distribution
Total Gross Capital Request: $1,167K ($180K)	**Authorization Type:** Initial Funding

Executive Summary

The State of Connecticut is improving the Route 72/69 intersection in the City of Bristol. The construction is planned to start in October 2022.

[redacted]

[redacted]

[redacted]. This re-route comes at an additional cost of $389k which Eversource will pay.

The State will be contributing 50 percent for the work completed to relocate the two 13.8 kV circuits on the Route 72 pole line as described under trigger #1 of the utility relocation guideline.



Project Costs Summary

Note: Dollar values are in thousands

Capital Costs	Year 2022	Year 2023	Year 20__+	Total
Direct Capital Costs				
Internal Labor and Construction Equipment	$37	$37	$0	$74
Outside Services	$248	$248	$0	$496
Materials	$82	$82	$0	$163
Removals	$41	$41	$0	$83
Risk and Contingency	($100)	($100)	$0	($200)
Other	$0	$0	$0	$0
Subtotal – Direct Costs	**$308**	**$308**	**$0**	**$616**
Indirect Capital Costs				
Indirect/Overheads (including benefits)	$263	$263	$0	$526
Capitalized interest or AFUDC, if any	$12	$12	$0	$25
Subtotal – Indirect Costs	**$275**	**$275**	**$0**	**$551**
Total Gross Capital Costs	**$583**	**$583**	**$0**	**$1,167**
Customer Contribution	**($90)**	**($90)**	**$0**	**($180)**
Total Net Capital Project Costs	**$493**	**$493**	**$0**	**$986**

Technical Justification:

Project Need, Objective, and Justification:

- The State of Connecticut is widening and changing the roadway.
- [redacted]

Project Scope:

[redacted]

Major Material:

- 1,540 feet of 750 Al aerial cable.
- 11,055 feet of 556 TW
- 325 feet of 1,000 KCMIL Cu EPR.

Background:

At the request of the State of Connecticut, facilities at the intersection of Routes 72 and 69 require relocation.

Alternatives Considered:

Were alternative solutions considered/applicable? Include any cost/benefit analysis.

Alternatives were considered (please describe below)

[redacted]

[redacted]

	Option		
[redacted]			
Cost	$1,167K	$925K	
Preferred option	X		

Regulatory Approvals:

Are Regulatory body approvals needed for the project?

No

Project Schedule

Milestone/Phase Name	Estimated Date
100% Engineering Completion	7/31/2022
Construction Start	10/1/2022
Testing/Commissioning	N/A
In Service Date	3/31/2023

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost is higher than estimated due to scope changes.	2022/ 2023	Medium	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	2022/ 2023	Medium	Design to minimize customer impact. Project Preplanning and customer/community outreach.
Internal construction resources not available to perform the work.	2022/ 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.	2022	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2022/ 2023	Medium	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
Storm delays	2022/ 2023	Medium	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2022/ 2023	Medium	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system is abnormal for extended periods.
Technological risks involving integration of new technology	2022/ 2023	Medium	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	2022/ 2023	Medium	Use of mats and specialty equipment, only work during certain times of the year.

Drawings Sent to State showing new pole locations.

WO ST3315112 Pole Relocation Plar

Plan 2 Pole Relocation Sh 2 of 2