EVERSOURCE

Project Approval Form

Project Title: [redacted] DB Rebuild	Project Number: CD01735
Date Prepared: 09/28/2023	**Company:** Eversource CT
Organization: Electric System Operations	**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: 12/31/23	
Total Capital Request: $1,093K	**Authorization Type:** Full Funding

1. Executive Summary

Project CD01735 – [redacted] DB Rebuild - was established to address the poor reliability in a Direct Buried (DB) development off [redacted]., which is supplied by the [redacted]

- [redacted]
- [redacted]
- Project CD01735 also called for the installation of [redacted]
- Project Location
  - Division: Central
  - District: Tolland AWC
  - City/Town: Ashford

The partial funding estimate for this project is $438K and was approved at the 5/27/2021 CTPAC. The full funding estimate is $1,093K. The difference in cost equates to $655K, an increase of 150%. This project is complete with no scope changes.

Legacy estimating units were used for the partial funding estimate. If updated estimating units were used, the high-level estimate would be $567K.

Additionally, the partial funding estimate used Eversource crews as the labor resource. Contractors worked on this project which if estimated originally, would increase the project total an additional 30% to $737K.

Additional cost overruns are due to work delays regarding planned outage coordination within the development because of the non-loadbreak devices from the original equipment. Further, emergency outages over the duration of the year required the working crews to break down the job to reallocate focus on such emergency work. Material shortages due to supply chain issues because of COVID shutdowns also contributed to coordination efforts being complex to complete the work.

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2022	2023	Total
Direct Capital Costs			
Internal Labor and Construction Equipment	0.2	0.0	0.1
Outside Services	158.5	430.7	511.6
Materials	36.8	16.5	46.8
Removals	12.6	29.0	126.4
Risk and Contingency	5.8	15.7	21.4
Other	0.0	0.0	0.0
Subtotal – Direct Costs	**213.9**	**491.9**	**706.4**
Indirect Capital Costs			
Indirect/Overheads (including benefits)	78.8	297.2	376.2
Capitalized interest or AFUDC, if any	2.3	9.9	11.3
Subtotal – Indirect Costs	**81.1**	**307.1**	**387.4**

Total Gross Capital Costs	**295.0**	**799.0**	**1,093.8**
Customer Contribution	**0.0**	**0.0**	**0.0**
Total Net Capital Project Costs	**295.0**	**799.0**	**1,093.8**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

a. Background

The [redacted] This project intends to eliminate failing DB cable and reduce the duration of events should they occur in the future.

b. Project Need

Over the last 4 years, this development has experienced [redacted] The transformers and cable were installed in the 60's and 70's and cannot be switched live which results in the "go-back" planned outages after a cable fault occurs. This project proposed the [redacted].

In addition, project CD01735 installed a [redacted]

[redacted]

c. Project Scope

The scope of this project is as follows:

[redacted]

Major Material:

- 6,980 ft. #1 AL DB Cable in Conduit
- 1,100 ft. of 1/0 TW
- 2 Wood Poles (Eversource)
- 12 Single-Phase Pad mount Transformers
- 1 Three-Phase Pad mount Transformer
- 3 Doghouses

4. Alternatives Considered

The alternative option specified [redacted]. The estimated cost for this alternative is $540K using updated estimating units.

Project Option Comparison

Design Criteria	Option	
[redacted]		
Estimate Type:	Full	Partial
Capital Cost	$1,093.8K	$511K
Expense Cost	$34.1K	$29K
Total Cost	$1,127.9K	$540K
Preferred option	X	

Note – All estimates reflect updated estimating units.

5. Project Schedule

Milestone/Phase Name	Estimated Date
Partial Approval	May 2021
100% Detailed Engineering Completion	November 2021

Milestone/Phase Name	Estimated Date
Fully Funded	October 2023
Construction Start	January 2023
In Service Date	August 2023

6. 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	*N/A*
E. Easement	*YES*
F. Partial Funding PAF	*YES*

Attachment A - Partial Cost Estimate:

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$107,570
Contingency Amount:	$30,119
Estimate:	$137,689
Reimbursement:	$0
Net Amount:	**$137,689**
Description:	

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Complex	16-ALL16	[redacted]		$21,072.00
TRAFFIC OH/DB/UG - Traffic Control - Flagger	16-ALL19			$5,000.00
XF DB/UG - Padmount XF - 1ph	16-UG130			$34,619.20
ENCLOSURE DB - Fiberglass Enclosure - 1ph - Doghouse	16-UG147			$9,182.40
UG CABLE DB - Cable Replacement - 1ph	16-UG151			$37,696.00

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Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	28.00%
SubTotal:	$234,909
Contingency Amount:	$65,774
Estimate:	$300,683
Reimbursement:	$0
Net Amount:	**$300,683**
Description:	

Item Description	CU	$ / Per	Qty	Amount
SWITCHING OH/DB/UG - SWITCHING NonNetwork - Complex	16-ALL16	[redacted]		$7,024.00
TRAFFIC OH/DB/UG - Traffic Control - Flagger	16-ALL19			$2,500.00
OH WIRE OH - Line Extension - 1ph (any gauge)	16-OH32			$66,000.00
XF DB/UG - Padmount XF - 1ph	16-UG130			$3,147.20
XF DB/UG - Padmount XF - 3ph	16-UG131			$6,299.20
POLE DB/UG - Riser - 1ph	16-UG145			$7,370.40
UG CABLE DB - Cable Replacement - 1ph	16-UG151			$6,448.00
UG CABLE DB - Cable Replacement - 3ph	16-UG151A			$118,552.00
UG CABLE DB - Splice Box	16-UG154			$17,568.00

Attachment C: Geographic Map - Before:



Attachment C: Geographic Map - After:



Attachment E: Easement Agreement

KNOW ALL MEN BY THESE PRESENTS:

That ASHFORD PARK, INC., a Connecticut Corporation located in the TOWN OF WALLINGFORD, COUNTY OF NEW HAVEN, STATE OF CONNECTICUT, acting herein by Nicholas Tomassetti, its President, hereunto duly authorized by vote hereto attached, for a valuable consideration, the receipt of which is hereby acknowledged does hereby grant to THE CONNECTICUT LIGHT AND POWER COMPANY, a Corporation chartered by the General Assembly of the State of Connecticut and having its principal office in the Town of Berlin, in the State of Connecticut, and its successors and assigns, the permanent rights to install, operate, maintain, renew and replace underground electric lines and facilities consisting of ducts, cables and underground service lines together with above ground padmounted transformers and transclosures, below-ground transformer vaults, with submersible transformers, pullboxes, service handholes and other fixtures and appurtenances, all as are from time to time needed for the transmission of electric current for light, heat or other purposes, and for telephone purposes.

Said rights being on, over and under ten (10) foot wide rights of way adjoining and parallel to any and all of the private or public streets or passways now or hereafter laid out or located on the property herein described. Also with the right to cross under, any and all of the private or public streets or passways now or hereafter laid out or located on the property herein described, from side to side with underground electric lines consisting of ducts, cables and underground services, situated in the TOWN OF ASHFORD, COUNTY OF WINDHAM, STATE OF CONNECTICUT.

Together with the right to install, operate, maintain, replace and renew underground electric lines and facilities used and adapted for the transmission of electric current for light, heat, power or for any other purpose and for telephone purposes on any or all of the ten (10) foot wide strips of land parallel to and adjoining, and with the right to cross from side to side under, any or all of said private or public streets or passways

Attachment F: Partial PAF:

Operations Project Authorization Form

Date Prepared: 05/11/2021	**Project Title: [redacted] DB Rebuild**
Company/ies: Eversource CT	**Project ID Number: CD01735**
Organization: Distribution Design	**Class(es) of Plant: Distribution**
Project Initiator: [redacted]	**Project Category: Reliability - Other**
Project Manager: [redacted]	**Project Type: URD/DB Cable Improvements**
Project Sponsor: [redacted]	**Project Purpose: Resolve 3 or more**
Estimated in service date:12/31/2023	**If Transmission Project: PTF? NA**
Eng. / Constr. Resources Budgeted? No	**Capital Investment Part of Original Operating Plan? Yes**
Authorization Type: Preliminary Funding	**O&M Expenses Part of the Original Operating Plan? Yes**
Total Request: $438,372	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

The [redacted] in a direct buried (DB) development [redacted]. [redacted] This reliability work will improve the number of customers impacted by these events as well as reduce the outage duration.

The DB cable between [redacted]

[redacted]

[redacted]

Project Costs Summary

	Prior Authorized	2023	2024	2025+	Totals
Capital Additions - Direct	$0	$249,940	$0	$0	$249,940
Removals net of Salvage ____%	$0	$23,061	$0	$0	$23,061
Total - Direct Spending	$0	$273,002	$0	$0	$273,002
Capital Additions - Indirect	$0	$148,631	$0	$0	$148,631
Subtotal Request	$0	$421,632	$0	$0	$421,632
AFUDC	$0	$3,362	$0	$0	$3,362
Total Capital Request	$0	$424,994	$0	$0	$424,994
O&M	$0	$13,378	$0	$0	$13,378
Total Request	$0	$438,372	$0	$0	$438,372

Financial Evaluation

Direct Capital Costs	2023	2024	2025+	Total
Straight Time Labor	$18,562	$0	$0	$18,562
Overtime Labor	$3,388	$0	$0	$3,388
Outside Services	$186,389	$0	$0	$186,389
Materials	$63,853	$0	$0	$63,853
Other, including contingency amounts (describe)	$811	$0	$0	$811
Total Direct Costs	**$273,002**	**$0**	**$0**	**$273,002**

Indirect Capital Costs	2023	2024	2025+	Total
Indirects/Overheads (including benefits)	$148,631	$0	$0	$148,631
Capitalized interest or AFUDC, if any	$3,258	$0	$0	$3,258
Total Indirect Costs	**$151,889**	**$0**	**$0**	**$151,889**
Total Capital Costs	**$424,891**	**$0**	**$0**	**$424,891**
Less Total Customer Contribution	**$0**	**$0**	**$0**	**$0**
Total Capital Project Costs	**$424,891**	**$0**	**$0**	**$424,891**
Total O&M Project Costs	**$13,481**	**$0**	**$0**	**$13,481**

Total Project Cost	**$438,372**	**$ -**	**$ -**	**$438,372**

Technical Justification:

Project Need Statement

The direct buried development has seen multiple recent events and Operations has expressed the need to review the design of the development. Over the last 4 years, this development has experienced [redacted]. These events include [redacted]"

[redacted]



Project Objectives

The objective of this project is to reduce the number of outages and durations due to cable faults.

Project Scope

[redacted]

Major Material:

- 6980’ #1 AL DB Cable in Conduit
- 1100’ 1/0 TW
- 2 Wood poles (Eversource)
- 12 Single-Phase Padmount Transformers
- 1 Three-Phase Padmount Transformer
- 3 Doghouses

Background / Justification

The [redacted] This project intends to eliminate failing DB cable and reduce the duration of events should they occur in the future.

Business Process and / or Technical Improvements

[redacted]

Alternatives Considered with Cost Estimates:

[redacted]

Project Schedule

Design Criteria	[redacted]	
Cost	$438,372	$300,683
Cost/MVA added	N/A	N/A

Milestone/Phase Name	Estimated Completion Date
Preliminary Engineering	05/2021
Detail Design	09/2022
Full Funding	12/2022
Construction	01/2023

Regulatory Approvals

None

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	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/ Wetlands Permitting	2022/2023	Low	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.	2022/2023	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Materials Shortage or long lead times	2023	Low	Pre-order long lead time material; minimize the use of non-standard and non-stocked material.
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. Install temporary bypasses/equipment if system will be abnormal for extended periods
Technological risks involving integration of new technology	2023	Low	Before use of new technology ensure support of standards and manufacture. Schedule project to accommodate for extra time or ensure new technology is not on the critical path.
Wetlands Environmentally sensitive area	2022/2023	Low	Use of mats and specialty equipment, only work during certain times of the year