EVERSOURCE
Project Authorization Form

Operations Project Authorization Form

Date Prepared: 04/13/2022	**Project Title:** [redacted] TDRP
Company/ies: CT	**Project ID Number:** CD01547
Organization: Electric	**Class(es) of Plant:** Distribution
Project Initiator: [redacted]	**Project Category:** TDRP
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Project Purpose:** Reliability Improvement
Estimated in service date: 12/31/2021	**If Transmission Project: PTF?** NA
Eng. /Constr. Resources Budgeted? No	**Capital Investment Part of Original Operating Plan?** N
Authorization Type: Full Funding	**O&M Expenses Part of the Original Operating Plan?** N
Total Request: $1,105.1 k	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

The purpose of this project is to address the large customer zone with recurring outages. [redacted]. In Addition, this circuit was ranked 109 in the "2019 TDRP List".

[redacted]

This request is for full funding authorization of $1,105.1 k, an increase of $558.9 k vs the initial authorization amount of $546,1k. There was no scope change. The variance in underestimated materials such as 14 poles, 31 cross-arms, 6 disconnects, 6 cutouts & 150' of 1000 Cu UG cable resulted in approximately $200k additional cost. The additional cost variance was due to an increase in labor/material costs due to the pandemic and associated indirect costs.

Project Costs Summary

Note: Dollar values are in thousands

	Prior Authorized	2021+	2022	2023	Totals
Capital Additions - Direct	$329.4	$55.0			$384.3
Less Customer Contribution	$0	$0			$0
Removals net of Salvage ____%	$13.8	$273.0			$286.8
Total - Direct Spending	$343.1	$328.0			$671.1
Capital Additions - Indirect	$186.4	$216.6			$403.0
Subtotal Request	$529.6	$544.6			$1,074.1
AFUDC	$8.5	$4.2			$12.7
Total Capital Request	$538.1	$548.8			$1,086.8
O&M	$8.0	$10.5			$18.5
Total Request	$546.1	$559.2			$1,105.3

Financial Evaluation

Note: Dollar values are in thousands

Direct Capital Costs	2021	2022	2023+	Total
Straight Time Labor	$128.0	$0	$0	$128.0
Overtime Labor	$49.8	$0	$0	$49.8
Outside Services	$87.9	$0	$0	$87.9
Materials	$194.4	$0	$0	$194.4
Other, including contingency amounts (describe)	$25.9	$0	$0	$25.9
Total Direct Costs	**$486.0**	**$0**	**$0**	**$486.0**

Indirect Capital Costs	2021	2022	2023+	Total
Indirects/Overheads (including benefits)	$588.2	$0	$0	$588.2
Capitalized interest or AFUDC, if any	$12.7	$0	$0	$12.7
Total Indirect Costs	**$600.9**	**$0**	**$0**	**$600.9**
Total Capital Costs	**$1,086.8**	**$0**	**$0**	**$1,086.8**
Less Total Customer Contribution	**$0**	**$0**	**$0**	**$0**
Total Capital Project Costs	**$1,086.8**	**$0**	**$0**	**$1,086.8**
Total O&M Project Costs	**$18.5**	**$0**	**$0**	**$18.5**
Total Project Cost	**$1,105.3**	**$0**	**$0**	**$1,105.3**

Note: Explain unique payment provisions, if applicable

Technical Justification:

Project Need Statement

This project has been established to address [redacted]

Project Objectives

The goal of this project is to reduce the number of customers effected by an outage event. The project reduces large customer zone to less than 400 customers by installing a Sectionalizing Recloser and a Smart Switch.

Project Scope

In order to meet the above objective, this project proposes the following:

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

Major Material

1. Cooper Nova / Form 6 recloser as a Sectionalizing Recloser.
2. Cooper Nova / Form 6 recloser as a Smart Switch.
3. 1940 ft. of 556 TW
4. 1000ft. of 1000 CU

Business Process and / or Technical Improvements:

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

Background / Justification

First zone [redacted].

Table 1: Outage History - Breaker Zone

Start time	Circuit	Cause type	Weather type	Cust. Count	Cust. Minutes	Duration	Reportable description
8/14/2016 0:37	[redacted]	Tree Related	Normal Weather	107	4387	41	isolated wire down, partial restoration
5/16/2018 12:53		Tree Related	Normal Weather	124	214272	1728	
7/2/2018 3:09		Equip Failure	Hot Weather	911	13665	15	[redacted]
9/21/2019 4:36		Equip Failure	Normal Weather	4	136	34	Final customer group to be restored after properly having isolated the area restoring the majority of customers in an efficient manner to minimize the customer's outage exposure.
10/31/2019 9:56		Oper/Maint	High Winds	107	75435	705	Crew patrolling, looking for one phase out of the three phases that is broken.
2/27/2020 1:08		Tree Related	High Winds	217	15190	70	Broken x-arm at pole [redacted] tree down broken phase. Isolated wires down and restored most customers.
4/13/2020 10:37		Momentary	High Winds	107	7597	71	[redacted]

Table 2: Outage History – [redacted] Zone

Start time	Circuit	Cause type	Weather type	Cust. Count	Cust. Minutes	Duration	Reportable description
10/12/2018 2:45	[redacted]	Tree Related	High Winds	516	7740	15	Review cmp; OPENED RECLOSER TO REMOVED TREE FROM 3-PH, RESTORED CKT TO NORMAL 18-E-2495
7/23/2018 11:15		Tree Related	Normal Weather	516	7224	14	LIMB ON WIRE; Tree crew & shooter removed tree from pole [redacted] & restored to normal. Mazurek/ Lewis Tree
5/15/2018 4:50		Tree Related	Normal Weather	388	1018500	2625	READY TO ENERGIZE BETWEEN 70S & Switch pole [redacted] trees on primary. wires down from [redacted] 5-sections, cross arms broken. see event#3655090 = p6995 limb on primaries, crossarm broken p5902 tr;
2/1/2018 11:41		Tree Related	Normal Weather	515	15965	31	Tman onsite / Related to 911 event 3535941; opened recloser to put out fire; flopped loop from [redacted] to end // lineman cleared limb and cleaned burned connections // took arrestors off line and restored // follow up with line dept to investigate recloser in daylight
2/25/2016 12:17		Tree Related	Normal Weather	496	53568	108	Brush fire from burning wire.; REMOVED TREE..RESTORED CIRCUIT
9/18/2018 12:11		Tree Related	Rain	133	1596	12	isolated wire down at pole [redacted], opened at pole [redacted] and closed recloser

Alternatives Considered with Cost Estimates

Option 1 will precisely focus on the Smart Switch project ranked 44 i.e. [redacted]

This option proposes the following:

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

This option is not recommended due to two reasons. One, [redacted]

Option 2 will address [redacted]

This option proposes the following:

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

This option was not selected due to the preferred option which mainly consist of the above changes, and due to the higher cost.

Project Option Comparison

	[redacted]		
Cost	$237,553.24	$546,087.06	$631,096.50
Cost / MVA added			
Cost / CM Saved	1.86	3.28	3.84
Cost / CI Saved	1000.61	1424.23	1664.99

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Initial Funding Authorization	May 2020
Detailed Design	August 2020
Full Funding Authorization	November 2020
Construction Begin	February 2021
Construction End	June 2021

Regulatory Approvals

Eversource Transmission-Distribution Reliability Performance (TDRP) Projects address reliability issues associated with the Worst Performing Top 100 circuits in Connecticut. In doing so, Eversource maintains compliance with Docket 86-12-03. Eversource is required to report the status of the actions taken to improve performance for each Circuit topping the "Worst 100" list. Updates are required each year consecutively for a total of four years following a circuit's appearance on the list.

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2021	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	2021	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach
Internal construction resources not available to perform the work.	2021	High	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.	2021	Medium	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Storm delays	2021	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2021	Low	Schedule work to minimize system abnormal time. Most of this work will to require system to be abnormal for any extended period of time.

References

None

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

Map	One-Lines	Load Sheet	Need Statement
[redacted] - Map..pdf	[redacted] - Oneline.pdf	[redacted] - Load Sheets.pdf	CD01547_project_needs_statement.pdf