EVERSOURCE

Supplement Authorization Form

Project Title: Cheshire MBI Initiative – Pole Integrity	Project Number: CD00840
Date Prepared: 04/28/2026	**Company:** Eversource CT
Organization: Distribution Engineering	**Project Category:** POLE INTEGRITY PROGRAM
Initiating Organization: Distribution	**Project Type:** Specific
Project DDE: [redacted]	**Capital Investment part of 5-year plan?** No
Project Manager: [redacted]	**Emergency Related Request?** No
Project Sponsor: [redacted]	**Facility Type** (check all that apply): ☐ PTF ☐ non-PTF ☒ Distribution ☐ N/A (General Plant)
Current Authorized Amount: $ 1,981,144	**Approved In-Service Date:** 12/31/2017
Supplement Request: $ 1,140,098	**Estimated In-Service Date:** 12/31/2020
Total Capital Request: $ 3,121,242	**Authorization Type:** Supplement Request
	Reason: : Cost Overage

1. Project Background

Project CD00840 was established to proactively reduce outages and enable the system to better withstand day-to-day extreme weather conditions. Pole findings identified during circuit patrols were selected for completion under the System resiliency pole integrity program. Poles requiring structural upgrades- including rotten or cracker crossarms, arrestors, pole replacements, pole shifts, crossarm braces, anchors, down grounds, guying, pins and insulators – were included in the program.

A total of [redacted] pole locations were identified for remediation as part of the MBI initiative within the Cheshire area work enter. The goal of the MBI initiative was to address priority patrol findings and upgrade pole locations to system resiliency standards.

Each identified pole location was assessed using the Pole Foreman structural loading tool and evaluated against system resiliency loading criteria of 95 mph winds or 40 mph winds with ¾-inch ice. In addition, any pole greater than 40 years old was designed for replacement. Fuse protection, animal protection, and zap shields were added to transformers on backbone and lateral circuits.

2. Supplement Justification Overview

The requested amount of $354.7k is 22% above the authorized direct cost of $1,981.1k. Additional cost spent was due to higher material cost and removals needed for this project.

3. Supplement Justification Detail

Additional $354.7k is mainly due to higher material cost and removals needed for this project. This project spanned multiple years and was extended beyond its original timeline.

4. Supplement Cost Summary (Project Total)

Capital Costs	To Date Spend	Prior Authorized	Supplemental Request	Total Request
Internal Labor and Construction Equipment	3.1	23.7	-21.2	2.5
Outside Services	1,454.0	1,182.7	-13.8	1,168.9
Materials	204.6	155.2	9.3	164.5
Removals	0.0	0.0	324.5	324.5
Risk and Contingency	61.2	0.0	61.2	61.2
Other	-6.7	0.0	-5.4	-5.4
Subtotal	**1,716.2**	**1,361.5**	**354.7**	**1,716.2**

Indirect Capital Costs	To Date Spend	Prior Authorized	Supplemental Request	Total Request
Indirects/Overheads (including benefits)	1,267.8	610.1	657.8	1,267.8
Capitalized interest or AFUDC, if any	137.2	9.6	127.6	137.2
Subtotal	**1,405.0**	**619.6**	**785.4**	**1,405.0**
Total Capital Costs (Gross)	**3,121.2**	**1,981.1**	**1,140.1**	**3,121.2**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**

Project Costs (Net of Reimbursement)	**3,121.2**	**1,981.1**	**1,140.1**	**3,121.2**

New Total Request by Year (if applicable)

Note: If multi-year project, include actuals for current and years past, and then show forecasted spend for upcoming years.

Line item Category	Year 2017	Year 2018	Year 2019	Year 2020	Total
Internal Labor and Construction Equipment	0.5	1.8	0.1	0.1	2.5
Outside Services	235.6	851.2	50.9	31.2	1,168.9
Materials	33.2	119.8	7.2	4.4	164.5
Removals	62.5	225.9	13.5	22.6	324.5
Risk and Contingency	0.0	0.0	0.0	61.2	61.2
Other	-1.1	-3.9	-0.2	-0.1	-5.4
SUBTOTAL DIRECTS W/ RISKS	**330.7**	**1,194.8**	**71.4**	**119.3**	**1,716.2**
Indirect / Overhead (including benefits)	131.7	1,513.9	8.6	-386.5	1,267.8
AFUDC	6.3	72.7	54.7	3.5	137.2
Subtotal – Indirect Costs	**138.0**	**1,586.6**	**63.4**	**-383.0**	**1,405.0**
TOTAL CAPITAL REQUEST	**468.8**	**2,781.4**	**134.8**	**-263.7**	**3,121.2**
Reimbursables/Customer Contribution	0.0	0.0	0.0	**0.0**	**0.0**
PROJECT TOTAL (LESS REIMBURSABLES)	**468.8**	**2,781.4**	**134.8**	**-263.7**	**3,121.2**

5. Lessons Learned

N/A

Project Authorization Form

Date Prepared: 8/02/17	Project Title: Cheshire MBI Initiative – Pole Integrity
Company/ies: Eversource CT	Project ID Number: CD00840
Organization: Distribution Engineering	Class(es) of Plant: Distribution
Project Initiator: [redacted]	Project Category: Pole Integrity
Project Owner/Manager: [redacted]	Project Type: Specific
Project Sponsor: [redacted]	Project Purpose: System Resiliency PURA Docket 12-0706RE01
Estimated in service date: 12/31/17	If Transmission Project: NA
Supplement to Existing Authorization? No	Capital Investment Part of Original Operating Plan Y
Eng./Constr. Resources Budgeted? Yes	O&M Expenses Part of the Original Operating Plan? Y

Project Authorization

Project authorization must be in accordance with the approval levels included in the Delegation of Authority Policy (DOA).

If Chief Executive Officer or subsidiary board approval is required, document the review by Enterprise Risk Management (ERM) and Financial Planning and Analysis (FP&A)

ERM: _____

FP&A: _____

Executive Summary

System Resiliency project CD00840 will address specifically categorized Patrol Findings in the Cheshire AWC following statewide circuit patrols completed in 2016. Poles requiring the following structural upgrades will be included in the Pole Integrity Program: rotten or cracked cross arms, arrestors, pole replacements, pole shifts, cross arm braces, anchors, down grounds, guying, pin and

insulators. The 12 MBI initiative projects were developed in an effort to proactively prevent outages to the system, ultimately allowing the system to better withstand day-to-day and extreme weather events.

The original scope of this project was approved for engineering at TRC on November 22, 2016 for $886,738. Survey and detailed design results were reviewed on the first of the 12 MBI projects, and a greater number of pole replacements were identified that were not originally included in the ENG estimate due to pole age, condition and pole foreman analysis results to meet Resiliency standards, thus resulting in additional costs. Preliminary estimates for all of the MBI projects were prepared using the assumed additional scope and were re-presented and approved at TRC on April 20, 2017. It was estimated the Cheshire MBI project would fall between $1,350,000 and $1,850,000.

After survey, detailed design and a competitive bid process the ACT estimate is $2,658,983. After survey of 279 locations and detailed design, 231 locations require work including [redacted] pole replacements.

Total project request: $2,658,983

Project Costs Summary

	Prior Authorized*	Additional Request	2017**	2018+	Total
Capital Additions Direct	0	0	$ 1,041,790	0	$1,041,790
Less Customer Contribution	0	0	$ -	0	$0
Removals Net of Salvage	0	0	$ 319,732	0	$319,732
Total - Direct Spending	$0	$0	$ 1,361,523	$0	$1,361,523
Capital Additions - Indirect	0	0	$ 610,069	0	$610,069
AFUDC	0	0	$ 9,552	0	$9,552
Total Capital Request	$66,860	$ 1,914,284	$ 1,981,144	$0	$1,981,144
O&M	21,814	$ 656,025	$ 677,839	0	$677,839
Total Request	**$88,674**	**$ 2,570,309**	**$ 2,658,983**	**$0**	**$2,658,983**
* Current amount authorized in PowerPlan					
** Total amount needed for authorization in PowerPlan based on ACT					

Financial Evaluation

Supplement Authorization Form

Direct Capital Costs	2017	2018	2019	Total
Straight Time Labor	$ 23,705	0	0	$ 23,705
Overtime Labor		0	0	
Outside Services	$ 1,182,662	0	0	$ 1,182,662
Materials	$ 155,156	0	0	$ 155,156
Other, including contingency amounts	$ -	0	0	$ -
Total	$ 1,361,523	0	0	$ 1,361,523

Indirect Capital Costs	$ 2,017	2018	2019	Total
Indirects/Overheads (including benefits)	$ 610,069	0	0	$ 610,069
Capitalized interest or AFUDC, if any	$ 9,552	0	0	$ 9,552
Total	$ 619,621	0	0	$ 619,621

Total Capital Costs	$ 1,981,144	0	0	$ 1,981,144
Less Total Customer Contribution	$ -	0	0	$ -
Total Capital Project Costs	$ 1,981,144	0	0	$ 1,981,144
Total O&M Project Costs	$ 677,839	0	0	$ 677,839
Total Project Cost	$ 2,658,983	0	0	$ 2,658,983

Technical Authorization Form

Date Prepared: 4/11/17	Project Title: Cheshire MBI Initiative – Pole Integrity
Company/ies: Eversource CT	Project ID Number: CD00840
Organization: Distribution Design	Class(es) of Plant: Distribution
Project Initiator: [redacted]	Project Category: Pole Integrity
Project Owner/Manager: [redacted]	Project Type: *Specific*
Project Sponsor: [redacted]	Project Purpose: System Resiliency PURA Docket 12-07-06RE01
Estimated in service date: 9/30/2017	If Transmission Project: *NA*
Authorization Type: *Additional Scope*	Authorization Amount: $88,674 approved 11/22/16

Project Need Statement

Following the 2016 circuit patrols, specifically categorized Patrol Findings were selected to be completed under the 2017 System Resiliency Pole Integrity Program. Poles requiring the following structural upgrades were included in the Program: rotten or cracked cross arms, arrestors, pole replacements, pole shifts, cross arm braces, anchors, down grounds, guying, pin and insulators. These issues were chosen out of the list of Patrol Findings to be included in System Resiliency as they require more intensive design and construction to repair.

A total of [redacted] pole locations were identified to be fixed as part of the MBI initiative. These locations included fixes such as: pole replacements, cross arm replacements, damaged cross arm braces, broken or damaged pole guying, broken or bent ridge pins, broken insulators and missing or cut down grounds. This project is one of twelve created, one for each area work center. This project includes the analysis of 279 locations in the Cheshire area. This project is currently within survey and detailed design phase where the number of pole replacements, cross arm upgrades, and other fixes will be determined.

Project Objectives

The goal of the MBI initiative is to fix the priority patrol findings that were identified and upgrade these pole locations to the new System Resiliency Standards.

Project Scope

This project includes the analysis of [redacted] locations in the Cheshire area.

Each identified pole location is being assessed using the pole foreman structural loading tool and evaluated according to the System Resiliency loading criteria (95mph winds or 40mph winds & ¾" ice). In addition to the existing Resiliency standards, any pole greater than 40 years old is being designed to be replaced, animal protection and zap shields are being added to transformers, and fuses are being added to transformers on the backbone and on laterals.

Background / Justification

The MBI initiative projects were developed in an effort to proactively prevent outages to the system, ultimately allowing the system to better withstand day-to-day and extreme weather events.

Business Process and / or Technical Improvements:

This program will proactively target poles and pole-top attachments with identified fixes. A checklist was developed by distribution engineering as a guideline to be used during each pole assessment. The checklist includes structural and electrical guidance such as replacing poles older than 40 years old. These guidelines will ensure that each pole being assessed will be fixed or replaced so that meets System Resiliency guidelines.

Cost Estimate and Assumptions

The initial project estimate of **$886,738** was approved at TRC on 11/22/16. This estimate was created using average costs of approximately $5,000/location for pole replacements and approximately $3,000/location to address all other issues (pole top construction and upgrades). The team also assumed 30% of pole replacements and 70% other issues to determine the cost per project. In AIMS, pole replacement and cross arm replacement unit costs were used with a 33% contingency in order to match the high-level cost estimates.

Design Alternative CD00840-01

Estimate

	Preliminary Estimate Summary
Revision Number:	0
Contingency:	33.00 %
SubTotal:	$666,720
Contingency Amount:	$220,018
Estimate:	$886,738
Reimbursement:	$0
Net Amount:	**$886,738**
Description:	

Item Description	CU	$ / Per	Qty	Amount
POLE OH - POLE - 3ph (CL&P custodian)	16-OH14	[redacted]		$392,784.00
POLETOP OH - Replace wood xarm with composite xarm - 3ph	16-OH17A			$273,936.00

To date, a portion of the twelve MBI projects' survey and detailed design work is complete and preliminary estimates have been prepared using STORMS contractor resource costs. The design complete projects require additional pole replacements not originally included in the ENG estimate due to pole age, condition and pole foreman analysis results to meet Resiliency standards, thus resulting in additional costs.

Using this trend of increased cost and pole replacement, new assumptions can be made and the project estimate for Cheshire MBI fixes is expected to be **between $1,350,000 and $1,850,000** due to the expectation of approximately [redacted] additional pole replacements after survey and detailed design completion.

Alternatives Considered with Cost Estimates

Do nothing: If the identified fixes and improvements are not performed as recommended, then system performance will suffer and customer satisfaction and Company MBI will be negatively impacted.

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Detail Design	May 2017
ACT Approval	June 2017
Construction	August 2017
Close-Out	September 2017

Regulatory Approvals

System Resiliency Docket No. 12-07-06RE01

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2017	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	2017	Low	Design to minimize customer impact. Project Preplanning and customer/community outreach
Storm delays	2017	Low	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2017	Low	Schedule work to minimize system abnormal time. Install temporary bypasses/equipment if system will be abnormal for extended periods

Wetlands / Environmentally sensitive area	2017	Low	Use of mats and specialty equipment, only work during certain times of the year

One-Line Diagrams, Attachments, and Images



MBI initiative - Pole Integrity 2017 -11-15