Appendix 2
Operations Project Authorization Form

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Project Title: Bungee Lake Reconductoring	**Project Number: CD01914**
Date Prepared: 05/14/2023	**Company:** Eversource CT
Organization: EFO	**Class(es) of Plant:** D Line
Project Initiator: [redacted]	**Project Category: Reliability Improve Specific Project**
Project Manager: [redacted]	**Project Type:** Specific
Project Sponsor: [redacted]	**Capital Investment part of original Operating Plan:** No
Estimated in service date: 12/31/2023	**Emergency Related Request?** No
Eng./Constr. Resources Budgeted? Yes	**Facility Type** (check all that apply)**:** ☐ PTF ☐ non-PTF ■ Distribution
Total Gross Capital Request: $887K	**Authorization Type:** Full Funding

Executive Summary

The Bungee Lake community on the [redacted]

The initial Engineering estimate for this project was approved for $616K on March 10, 2022. However, the initial estimate did not include a revised increase per unit cost for material, labor, and additional needed tree-trimming. The CPAC committee recommended to update the full funding request and include its recommendations, and then present it before CPAC for full funding.

Therefore, the full funding request for this project is $887K, which includes an additional $171K (28%) for labor and materials and $100K for additional tree trimming. All system upgrades in this project were selected to replace aging infrastructure dating to early 1960's that has reached the end of its service life.

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Project Costs Summary
See APS3 and APS8 requirements and consult with Plant Accounting for capital/O&M determination. Use published loaders for benefits, materials, and invoices, maintained by the Director, Budget and Internal Reporting.
Note: Dollar values are in thousands

Financial Evaluation

Capital Costs	2023	Year 2	Year 3+	Total
Internal Labor and Construction Equipment	183.2	0.0	0.0	183.2
Outside Services	214.3	0.0	0.0	214.3
Materials	58.4	0.0	0.0	58.4
Removals	37.1	0.0	0.0	37.1
Risk and Contingency	61.6	0.0	0.0	61.6
Other	1.5	0.0	0.0	1.5
Subtotal	**556.0**	**0.0**	**0.0**	**556.0**

Indirect Capital Costs	2023	Year 2	Year 3+	Total
Indirects/Overheads (including benefits)	325.5	0.0	0.0	325.5
Capitalized interest or AFUDC, if any	4.9	0.0	0.0	4.9
Subtotal	**330.4**	**0.0**	**0.0**	**330.4**
Total Capital Costs (Gross)	**886.4**	**0.0**	**0.0**	**886.4**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Project Costs (Net of Reimbursement)	**886.4**	**0.0**	**0.0**	**886.4**

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Technical Justification:

Project Need, Objective and Justification

In the last 4 years there have been 40 outages in the [redacted]

Project Scope

There are multiple drivers to this project. The 38 tree related outages these customers have experienced within this stepped-down zone will be addressed by reconductoring with tree wire as well as tree trimming. The voltage to the area is 8.32 kV and will be converted to 23 kV MGY. The aging plant will be replaced, and all transformers will be fused.

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Background

The Bungee Lake area on the 26E8 has experienced 40 outages in the last 4 years with 38 being tree related. The area contains plant that dates back to the 1940's with mostly bare #4 wire.

The area is supplied via 8.32kV and will be converted to 23 kV by removing both step-down transformers.

Alternatives Considered:

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

Alternatives were considered (please describe below)

[redacted] This alternative would add approximately $123,000 for a total project capital cost of approximately $796,330.

Project Option Comparison

	[redacted]	
Cost / CI Saved	$5,490	$6,687
Cost	$640K	$796K
Preferred option	X	

Selective reconducting was the chosen preferred option because it targets infrastructure that has reached the end of its service life benefiting system's reliability at a lower cost for customers.

The incremental cost for both options would have increased the final cost by the same scaling factor of approximately 28%. For instance, the alternative option for "reconducting all" would have had a final cost of $1,118 M, or $796K * 1.28% + $100k-additional tree trimming, instead of $796K.

Major Material:

- 8,730' 1/0 TW (1.65 miles)
- 43 transformers
- 43 fused cutouts
- 56 Eversource poles

Project Schedule

Milestone/Phase Name	Estimated Date
Preliminary Approval	02/01/22
100% Engineering Completion	01/01/23
Construction Start	04/01/23
In Service Date	12/31/23

References

	DPU Non-Storm Default	DPU Non-Storm Override	IEEE Non-Storm Default	IEEE Non-Storm Override	ALL Default	ALL Override
Customer Interruptions Saved:	119.08	0.00	119.08	0.00	218.90	0.00
Cost Per Customer Interruption Saved:	5,490.21	0.00	5,490.21	0.00	2,986.63	0.00
Customer Minutes Saved:	11,320.70	0.00	11,320.70	0.00	76,189.50	0.00
Cost Per Customer Minutes Saved:	57.75	0.00	57.75	0.00	8.58	0.00

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

Reference appendices items in the appropriate section of the PAF and list items in the same order as referenced in the PAF

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Lake Bungee OWS removal.vsdx


Bungee Lake Conversion Map.pdf


Device Reliability Bungee Lake.xlsx


CD01914_project_needs_statement.pdf