Project Title: Middletown River Rd. Multiple Tree Outages	Project Number: CD01907
Date Prepared: 08/21/2023	**Company:** Eversource CT
Organization: Electric System Operations	**Project Category:** Distribution Line Reliability
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: 10/2023	
Total Capital Request: $564.6K	**Authorization Type:** Full Funding

1. Executive Summary

Over a 15-year history, this [redacted] has experienced 34 outages. Of the 34 outages, only five (5) of the outages were not caused by trees or vines. Besides the reliability concern for the Eversource Transmission Switching station, we have received three customer complaints about the outages including at least one from our transmission's maintenance department. Over this period the protection scheme has been modified to minimize the number of customers affected by outages in this remote section of River Road in Middletown. Normal tree trimming practices and programs have proved to be insufficient in this area, its largely woods with most of the land owned by Eversource.

Due to the length of this radial tap, reconductoring or refeeding it would cost more than $1M. This project concentrates on removing dead and diseased trees beyond the normal tree trimming programs and remove trees greater than ten (10 ft.) feet off the road. A section of reconductoring is proposed for the area with the greatest reliability concern.

The initial engineering estimate for this project was approved for $637K on May 26th, 2022. The project was completed on time and within budget due to in part by the reduction of indirect cost. The engineering estimate calculated $221K for indirect capital cost but a revised ACT estimated it at $111K. In addition, outside services cost came lower than expected than initially estimated.

2. Project Cost Summary

Note: Dollar values are in thousands.

Capital Costs	2022	2023	Year 3+	Total
Internal Labor and Construction Equipment	50.3	14.4	0.0	64.6
Outside Services	161.6	46.2	0.0	207.8
Materials	42.8	12.2	0.0	55.0
Removals	63.2	18.0	0.0	81.2
Risk and Contingency	30.6	8.8	0.0	39.4
Other	4.4	1.2	0.0	5.6
Subtotal	**352.8**	**100.8**	**0.0**	**453.6**

Indirect Capital Costs	2022	2023	Year 3+	Total
Indirects/Overheads (including benefits)	78.3	22.4	0.0	100.7
Capitalized interest or AFUDC, if any	8.0	2.3	0.0	10.3
Subtotal	**86.3**	**24.7**	**0.0**	**111.0**
Total Capital Costs (Gross)	**439.1**	**125.5**	**0.0**	**564.6**
Less Total Customer Contribution	**0.0**	**0.0**	**0.0**	**0.0**
Project Costs (Net of Reimbursement)	**439.1**	**125.5**	**0.0**	**564.6**

3. Technical Justification

Background, Project Need/Justification, and Project Scope

1. Background

In the past 15 years, the normal tree trimming programs has proved inadequate and unable to sufficiently suppress the overwhelming tree conditions that exist in this remote area on River Rd., Middletown. There needs to be a more aggressive approach to gain control of the situation so that future tree trimming cycles can maintain adequate reliability. There have been twenty-nine tree related outages in fifteen years. There have been three customer complaints in this area, two from a residential customer, and the other from Eversource Transmission.

2. Project Need

The area along River Rd., Middletown has experienced 29 tree related outages, and is overwhelmed by woods and State Forest. Many of these trees are dead and diseased with a significant number beyond the normal tree trimming specifications by Eversource; therefore, the Eversource Tree Trimming Program will not address all the trees that pose an outage risk.

1. Removal of the dead and diseased trees with the potential to interrupt power customers

[redacted]

1. Project Scope

Preferred Proposal (Includes the following segments)

Total Cost $564.6K

This preferred option was selected because it provides the highest value to customers in terms of the cost per customer minutes and customer interruption saved.

Segment #1

Title: Middletown_River Rd_Tree Trimming_Complete
Description: Between Aircraft Rd. and Scoville Rock Substation on Freeman Rd., remove all dead and diseased trees with the potential to interrupt power at distances greater than 10 ft. off the road.

Distribution Project Cost: $112K
$/CMS: $32.97
$/CIS: $19,755.55
Outage Summary: (29) Tree, (1) Equipment, (3) Miscellaneous/Unknown
Impacted Customer: [redacted]
Impacted Critical Customer(s): [redacted]
Major Material: None

1. River Rd. – Freeman Rd., Middletown – Off Road Tree Removal (1.6 Miles)

Segment #3

Title: Middletown_River Rd_Reconductor
Description: From Pole 2673 to Pole 2691, River Rd., Middletown, reconductor 3-phase, bare, #4 copper wire with 1/0 tree wire, approximately 3,316 ft.

Distribution Project Cost: $509K
$/CMS: $187.16
$/CIS: $112,210.92
Outage Summary: (29) Tree, (1) Equipment, (3) Miscellaneous/Unknown
Impacted Customer: [redacted]
Impacted Critical Customer(s): [redacted]
Major Material: (3,316 ft.) 1/0 TW, (15) Telephone Poles, (2) OH Transformers

2. River Rd., Middletown, P. 2673 – P. 2693 – Reconductor 3, 316 ft. with 336 Spacer Cable
3. River Rd., Middletown, P. 2670 – Replace Red Badged Pole, Remove Rope Guy
4. Freeman Rd., Middletown, P. 5733 – Replace Red Badged Pole

Major Material:

 # Frontier poles installed: 15
Overhead conductor: 3,316 ft, 3-phase 1/0 TW

5. Alternatives Considered

Option #2 – 2nd Preference

Segment #1

Title: Middletown_River Rd_Tree Trimming_Complete

Description: Between Aircraft Rd. and Scoville Rock Substation on Freeman Rd., remove all dead and diseased trees with the potential to interrupt power at distances greater than 10 ft. off the road.

Distribution Project Cost: $112K

$/CMS: $32.97

$/CIS: $19,755.55

Outage Summary: (29) Tree, (1) Equipment, (3) Miscellaneous/Unknown

Impacted Customer: [redacted]

Impacted Critical Customer(s): [redacted]

Major Material: None

6. River Rd. – Freeman Rd., Middletown – Off Road Tree Removal (1.6 Miles)

Alternatives Considered with Cost Estimates (Cont'd)

Segment #4

Title: Middletown_River Rd_Tree Red Badge Pole Replacement

Description:

Distribution Project Cost: $45K

$/CMS: $13.33

$/CIS: $7,987.39

Outage Summary: (29) Tree, (1) Equipment, (3) Miscellaneous/Unknown

Impacted Customer: [redacted]

Impacted Critical Customer(s): [redacted]

Major Material: None

7. **P. 5733, Freeman Rd., Middletown – Replace Frontier Pole**
8. **P. 2691, River Rd., Middletown – Replace Frontier Pole**
9. **P. 2690, River Rd., Middletown - Replace Frontier Pole**
10. **P. 2689, River Rd., Middletown - Replace Frontier Pole**
11. **P. 2686, River Rd., Middletown - Replace Frontier Pole**
12. **P. 2684, River Rd., Middletown - Replace Frontier Pole**
13. **P. 2682, River Rd., Middletown - Replace Frontier Pole**
14. **P. 2678, River Rd., Middletown - Replace Frontier Pole**

15. P. 2670, River Rd., Middletown - Replace Frontier Pole

Option #3 – 3rd Alternative

Segment #2

Title: Middletown_River Rd_Tree Trimming_Minimum (partial)

Description: Between Aircraft Rd. and Scoville Rock Substation on Freeman Rd., remove all dead and diseased trees with the potential to interrupt power at distances up to 10 ft. off the road.

Distribution Project Cost: $40K

$/CMS: $11.84

$/CIS: $7,117.08

Outage Summary: (29) Tree, (1) Equipment, (3) Miscellaneous/Unknown

Impacted Customer: [redacted]

Impacted Critical Customer(s): [redacted]

Major Material: None

16. River Rd. – Freeman Rd., Middletown – Off Road Tree Removal (1.6 Miles)

Alternatives Considered with Cost Estimates (Cont'd)

Segment #4

Title: Middletown_River Rd_Tree Red Badge Pole Replacement

Description:

Distribution Project Cost: $45K

$/CMS: $13.33

$/CIS: $7,987.39

Outage Summary: (29) Tree, (1) Equipment, (3) Miscellaneous/Unknown

Impacted Customer: [redacted]

Impacted Critical Customer(s): [redacted]

Major Material: None

17. **P. 5733, Freeman Rd., Middletown – Replace Frontier Pole**
18. **P. 2691, River Rd., Middletown – Replace Frontier Pole**
19. **P. 2690, River Rd., Middletown - Replace Frontier Pole**
20. **P. 2689, River Rd., Middletown - Replace Frontier Pole**
21. **P. 2686, River Rd., Middletown - Replace Frontier Pole**
22. **P. 2684, River Rd., Middletown - Replace Frontier Pole**
23. **P. 2682, River Rd., Middletown - Replace Frontier Pole**
24. **P. 2678, River Rd., Middletown - Replace Frontier Pole**
25. **P. 2670, River Rd., Middletown - Replace Frontier Pole**

EVERSOURCE

Project Option Comparison

Project Option Comparison

Design Criteria	Option		
	1- Complete Tree Trim + Reconductor	2-Complete Tree Trim + Pole Replacement	3-Minimum Tree Removal + Pole Replacement
Normal loads < 80% of UG rating	N/A	N/A	N/A
Normal loads < 90% of OH rating	X	X	X
Contingent loads < 100% of rating	x	X	X
All zones < 500 customers	X	X	X
Additional ties created	0	0	0
Eliminates PILC	N/A	N/A	N/A
Reconfigure double circuit pole lines where both the normal and alternate supply the same group of customers	N/A	N/A	N/A
No automatic circuit ties with circuits emanating from the same bus	N/A	N/A	N/A
Eliminate triple circuit pole line	N/A	N/A	N/A
Cost	$637,054	$162,833	$88,433
Cost / MVA added	$146.65/MVA	$0/MVA	$0/MVA
Cost / CM Saved	$91.14	$47.84	$17.32
Cost / CI Saved	$54,644.20	$28,681.46	$14,018.96
Preferred option	X		

The preferred option was selected because it provides the highest value to customers in terms of the cost of customer minutes and customer interruption saved.

26. Project Schedule

Add any additional milestones that are pertinent to the project

Milestone/Phase Name	Estimated Date
Preliminary Approval	February 2022
100% Detailed Engineering Completion	March 2022
Fully Funded	April 2022
Construction Start	May 2022
In Service Date	October 2023

27. Regulatory Decisions

28. Codes and Standards

29. Risk and Contingencies

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2022-2023	Low	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.

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.	2022-2023	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Storm delays	2022-2023	Medium	If storm activity delays work, we may be forced to use external resources.
System abnormal configuration	2022-2023	Low	Schedule work to minimize system abnormal time. Most of this work will require system to be abnormal for any extended period of time.

30. References

References
1. DSEM 02.201 – Three-Phase Backbone Rehabilitation
2. Attach pictures of diseased trees and aging infrastructure

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

Attachment	Included in Submittal?
A. Cost Estimate	*YES*
C. Geographic Map	*YES*
D. Outage History	*YES*

A. Cost Estimate

Connecticut Light & Power
A Northeast Utilities Company

Specific Project Proposal - Project #: CD01907

MIddletown_Multiple Outages_River Rd

Work Classification

Category: Line
Type: REL1
Type Desc: RELIABILITY IMPROVE SPEC PROJ
Work Type:

Ownership / Management

AWC: East Hampton
Statewide: No
Owner: [redacted]
Manager:

Project Information

Status: Draft
SPS #:
AIS Score:
Associated Projects:
Assignment ID:
Patrol Find ID:

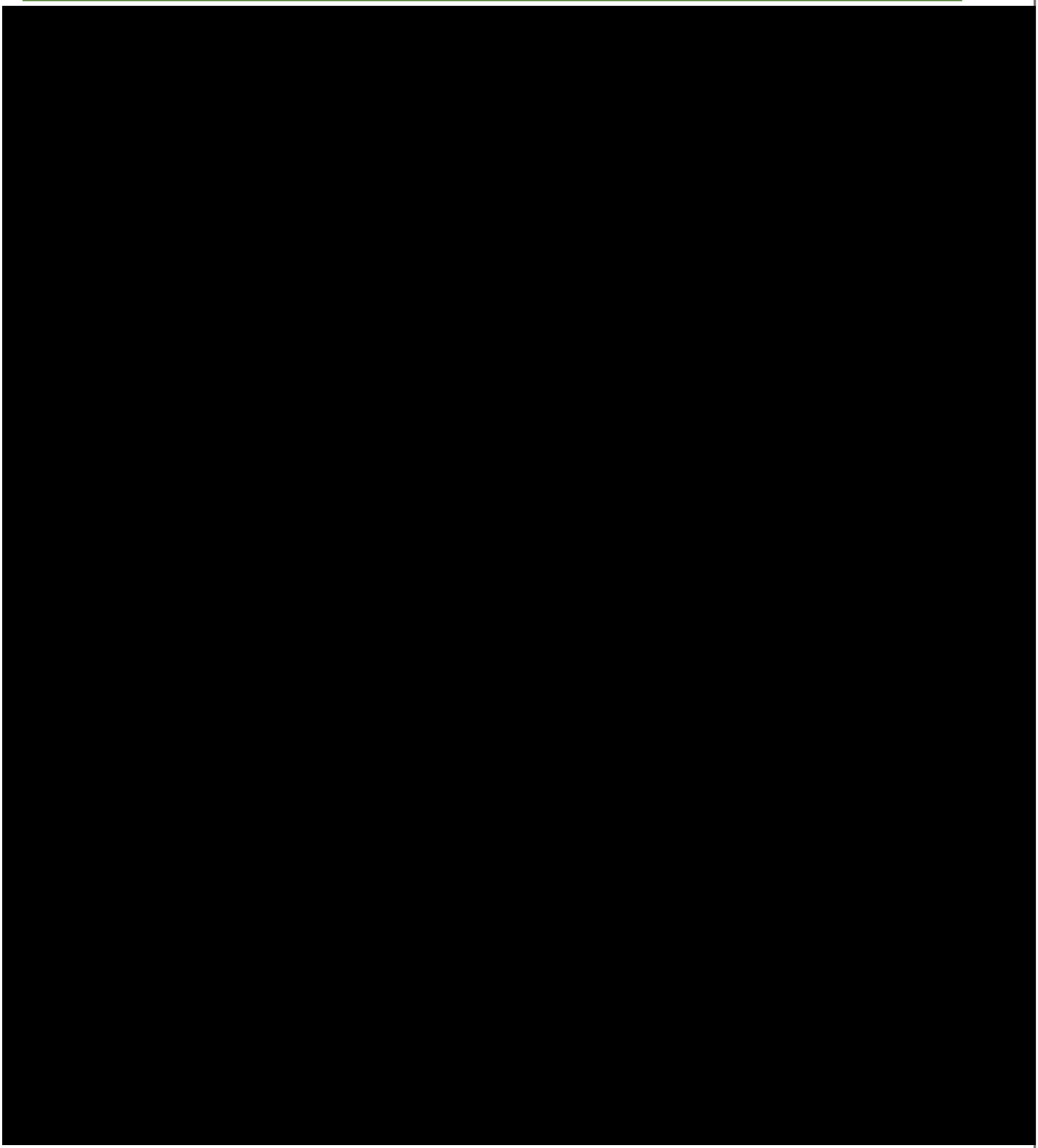
Budget Summary - Preferred Option

Middletown_Preferred_Best Tree Trim + Reconductor

2022

ID	Title	Status	Rev #	Contingency	Expenditure Amount	Net Estimate
1	Middletown_River Rd_Tree Trim_Complete	Draft	0	20%	$112,212	$112,212
3	Middletown_River Rd_Reconductor	Draft	0	20%	$524,842	$524,842
				2022 Total:	$637,054	$637,054
				Total Project:	$637,054	$637,054






CD01907_project_n
eeds_statement_rev(


[redacted]_Middletown
_ %20Rd_Total%


Geo
Map_rev0.1.pdf

Memo


FW Tree trimming
Freeman Road Midd

Pictures – Scoville Station


Scoville
Station_Freeman Rd


Scoville
Station_Freemn Rd_

Pictures – Freeman Rd


Freeman Rd_II.JPG


Freeman Rd_III.JPG

Pictures – River Rd


River Rd_IV.JPG


River Rd_IX.JPG

INITIAL FUNDING

Company/ies: Eversource CT	**Project ID Number:** CD01907
Organization: Distribution Electric	**Class(es) of Plant:** Distribution
Project Initiator: [redacted]	**Project Category:** Line
Project Manager: [redacted]	**Project Type:** Lateral – Rehab & Recon
Project Sponsor: [redacted]	**Project Purpose:** Reliability
Estimated in service date: December 2022	**If Transmission Project: PTF?** N/A
Eng. /Constr. Resources Budgeted? Yes	**Capital Investment Part of Original Operating Plan?** No
Authorization Type: Preliminary	**O&M Expenses Part of the Original Operating Plan?** No
Total Request: $637,054	

Financial Requirements:

Project Authorization

ERM: _____

FP&A: _____

Executive Summary

Over a 15-year history, this three-phase side tap with six (6) customers, one being an Eversource Transmission Switching Station, has experienced 34 outages. Of the 34 outages, only five (5) of the outages were not caused by trees or vines. Besides the reliability concern for the Eversource Transmission Switching station, we have received three customer complaints about the outages including at least one from our transmission's maintenance department. Over this period the protection scheme has been modified to minimize the number of customers affected by outages in this remote section of River Road in Middletown. Normal tree trimming practices and programs have proved to be insufficient in this area, its largely woods with most of the land owned by Eversource.

Due to the length of this radial tap, reconductoring or refeeding it would cost more than $1M. This project concentrates on removing dead and diseased trees beyond the normal tree trimming programs and remove trees greater than ten (10 ft.) feet off the road. A section of reconductoring is proposed for the area with the greatest reliability concern.

Project Costs Summary

Note: Dollar values are in thousands

	Prior Authorized	2022	20__	20__+	Totals
Capital Additions - Direct	$0	$363	$0	$0	$363
Removals net of Salvage ____%	$0	$34	$0	$0	$34
Total - Direct Spending	$0	$397	$0	$0	$397
Capital Additions - Indirect	$0	$216	$0	$0	$216
Subtotal Request	$0	$613	$0	$0	$613
AFUDC	$0	$5	$0	$0	$5
Total Capital Request	$0	$618	$0	$0	$618
O&M	$0	$19	$0	$0	$19
Total Request	$0	$637	$0	$0	$637

Financial Evaluation

Note: Dollar values are in thousands

Direct Capital Costs	2022	Year 2	Year 3+	Total
Straight Time Labor	$27	$0	$0	$27
Overtime Labor	$5	$0	$0	$5
Outside Services	$271	$0	$0	$271
Materials	$93	$0	$0	$93
Other, including contingency amounts (describe)	$1	$0	$0	$1
Total Direct Costs	**$397**	**$0**	**$0**	**$397**

Indirect Capital Costs	2022	Year 2	Year 3+	Total
Indirects/Overheads (including benefits)	$216	$0	$0	$216
Capitalized interest or AFUDC, if any	$5	$0	$0	$5
Total Indirect Costs	**$221**	**$0**	**$0**	**$221**
Total Capital Costs	**$617**	**$0**	**$0**	**$617**
Less Total Customer Contribution	**$0**	**$0**	**$0**	**$0**
Total Capital Project Costs	**$617**	**$0**	**$0**	**$617**
Total O&M Project Costs	**$20**	**$0**	**$0**	**$20**
Total Project Cost	**$637**	**$ -**	**$ -**	**$637**

Note: Explain unique payment provisions, if applicable

Technical Justification:

Project Need Statement

The area along River Rd., Middletown has experienced 29 tree related outages, and is overwhelmed by woods and State Forest. Many of these trees are dead and diseased with a significant number beyond the normal tree trimming specifications by Eversource; therefore, the Eversource Tree Trimming Program will not address all the trees that pose an outage risk.

Project Objectives

32. Removal of the dead and diseased trees with the potential to interrupt power [redacted]

Project Scope

Segment #1

Title: Middletown_River Rd_Tree Trimming_Complete

Description: Between Aircraft Rd. and Scoville Rock Substation on Freeman Rd., remove all dead and diseased trees with the potential to interrupt power at distances greater than 10 ft. off the road.

Distribution Project Cost: $112K
$/CMS: $32.97
$/CIS: $19,755.55
Outage Summary: (29) Tree, (1) Equipment, (3) Miscellaneous/Unknown
Impacted Customer: [redacted]
Impacted Critical Customer(s): [redacted]
Major Material: None

34. River Rd. – Freeman Rd., Middletown – Off Road Tree Removal (1.6 Miles)

Segment #3

Title: Middletown_River Rd_Reconductor

Description: From Pole 2673 to Pole 2691, River Rd., Middletown, reconductor 3-phase, bare, #4 copper wire with 1/0 tree wire, approximately 3,316 ft.

Distribution Project Cost: $525K
$/CMS: $187.16
$/CIS: $112,210.92
Outage Summary: (29) Tree, (1) Equipment, (3) Miscellaneous/Unknown
Impacted Customer: [redacted]
Impacted Critical Customer(s): [redacted]
Major Material: (3,316 ft.) 1/0 TW, (15) Telephone Poles, (2) OH Transformers

35. River Rd., Middletown, P. 2673 – P. 2693 – Reconductor 3, 316 ft. with 336 Spacer Cable
36. River Rd., Middletown, P. 2670 – Replace Red Badged Pole, Remove Rope Guy
37. Freeman Rd., Middletown, P. 5733 – Replace Red Badged Pole

Major Material:

 # Frontier poles installed: 15
Overhead conductor: 3,316 ft, 3-phase 1/0 TW

Background / Justification

In the past 15 years, the normal tree trimming programs has proved inadequate and unable to sufficiently suppress the overwhelming tree conditions that exist in this remote area on River Rd., Middletown. There needs to be a more aggressive approach to gain control of the situation so that future tree trimming cycles can maintain adequate reliability. There have been twenty-nine tree related outages in fifteen years. There have been three customer complaints in this area, two from a residential customer, and the other from Eversource Transmission.

Business Process and / or Technical Improvements:

Provide a reliable service to the seven customers residing off River Rd in Middletown.

Alternatives Considered with Cost Estimates

Option #2 – 2nd Preference

Segment #1

Title: Middletown_River Rd_Tree Trimming_Complete
Description: Between Aircraft Rd. and Scoville Rock Substation on Freeman Rd., remove all dead and diseased trees with the potential to interrupt power at distances greater than 10 ft. off the road.

Distribution Project Cost: $112K
$/CMS: $32.97
$/CIS: $19,755.55
Outage Summary: (29) Tree, (1) Equipment, (3) Miscellaneous/Unknown
Impacted Customer: [redacted]
Impacted Critical Customer(s): [redacted]
Major Material: None

38. River Rd. – Freeman Rd., Middletown – Off Road Tree Removal (1.6 Miles)

Alternatives Considered with Cost Estimates (Cont'd)

Segment #4

Title: Middletown_River Rd_Tree Red Badge Pole Replacement
Description:

Distribution Project Cost: $45K
$/CMS: $13.33
$/CIS: $7,987.39
Outage Summary: (29) Tree, (1) Equipment, (3) Miscellaneous/Unknown
Impacted Customer: [redacted]
Impacted Critical Customer(s): [redacted]
Major Material: None

39. P. 5733, Freeman Rd., Middletown – Replace Frontier Pole
40. P. 2691, River Rd., Middletown – Replace Frontier Pole
41. P. 2690, River Rd., Middletown - Replace Frontier Pole
42. P. 2689, River Rd., Middletown - Replace Frontier Pole
43. P. 2686, River Rd., Middletown - Replace Frontier Pole
44. P. 2684, River Rd., Middletown - Replace Frontier Pole
45. P. 2682, River Rd., Middletown - Replace Frontier Pole
46. P. 2678, River Rd., Middletown - Replace Frontier Pole
47. P. 2670, River Rd., Middletown - Replace Frontier Pole

Option #3 – 3rd Alternative

Segment #2

Title: Middletown_River Rd_Tree Trimming_Minimum (partial)
Description: Between Aircraft Rd. and Scoville Rock Substation on Freeman Rd., remove all dead and diseased trees with the potential to interrupt power at distances up to 10 ft. off the road.

Distribution Project Cost: $40K
$/CMS: $11.84
$/CIS: $7,117.08
Outage Summary: (29) Tree, (1) Equipment, (3) Miscellaneous/Unknown
Impacted Customer: [redacted]
Impacted Critical Customer(s): [redacted]
Major Material: None

48. River Rd. – Freeman Rd., Middletown – Off Road Tree Removal (1.6 Miles)

Alternatives Considered with Cost Estimates (Cont'd)

Segment #4

Title: Middletown_River Rd_Tree Red Badge Pole Replacement
Description:

Distribution Project Cost: $45K
$/CMS: $13.33
$/CIS: $7,987.39
Outage Summary: (29) Tree, (1) Equipment, (3) Miscellaneous/Unknown
Impacted Customer: [redacted]
Impacted Critical Customer(s): [redacted]
Major Material: None

49. P. 5733, Freeman Rd., Middletown – Replace Frontier Pole
50. P. 2691, River Rd., Middletown – Replace Frontier Pole
51. P. 2690, River Rd., Middletown - Replace Frontier Pole
52. P. 2689, River Rd., Middletown - Replace Frontier Pole
53. P. 2686, River Rd., Middletown - Replace Frontier Pole
54. P. 2684, River Rd., Middletown - Replace Frontier Pole
55. P. 2682, River Rd., Middletown - Replace Frontier Pole
56. P. 2678, River Rd., Middletown - Replace Frontier Pole
57. P. 2670, River Rd., Middletown - Replace Frontier Pole

Alternatives Considered with Cost Estimates (Cont'd)

Project Option Comparison

Design Criteria	Option		
	1- Complete Tree Trim + Reconductor	2-Complete Tree Trim + Pole Replacement	3-Minimum Tree Removal + Pole Replacement
Normal loads < 80% of UG rating	N/A	N/A	N/A
Normal loads < 90% of OH rating	X	X	X
Contingent loads < 100% of rating	x	X	X
All zones < 500 customers	X	X	X
Additional ties created	0	0	0
Eliminates PILC	N/A	N/A	N/A
Reconfigure double circuit pole lines where both the normal and alternate supply the same group of customers	N/A	N/A	N/A
No automatic circuit ties with circuits emanating from the same bus	N/A	N/A	N/A
Eliminate triple circuit pole line	N/A	N/A	N/A
Cost	$637,054	$162,833	$88,433
Cost / MVA added	$146.65/MVA	$0/MVA	$0/MVA
Cost / CM Saved	$91.14	$47.84	$17.32
Cost / CI Saved	$54,644.20	$28,681.46	$14,018.96
Preferred option	X		

Project Schedule

Milestone/Phase Name	Estimated Completion Date
Preliminary Approval	February 2022
Detail Design	March 2022
ACT Approval	April 2022
Construction Start Date	May 2022
Construction End Date	June 2023

Risks and Risk Mitigation Plans

Risk Event	Risk Horizon	Likelihood of Occurrence	Risk Mitigation
Actual cost higher than estimated due to scope changes.	2022	Low	Included contingency costs in the funding request. Perform detailed Field Analysis and walk down in project development to avoid potential issues.
Internal construction 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.
Internal engineering resources not available to perform the work.	2022	Low	Plan internal resources to perform the work. Use competitive bidding to ensure lowest outside labor cost.
Storm delays	2022	Medium	If storm activity delays work, we may be forced to use external resources.

System abnormal configuration	2022	Low	Schedule work to minimize system abnormal time. Most of this work will require system to be abnormal for any extended period of time.

References

DSEM 02.201 – Three-Phase Backbone Rehabilitation

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

Need Statement

CD01907_project_needs_statement_rev(

Outages

[redacted]_Middletown_%20Rd_Total%

Diagrams

Geo Map_rev0.1.pdf

Memo

FW Tree trimming Freeman Road Midd

Pictures – Scoville Station

Scoville Station_Freeman Rd

Scoville Station_Freemn Rd_

Pictures – Freeman Rd

Freeman Rd_II.JPG

Freeman Rd_III.JPG

Pictures – River Rd

River Rd_IV.JPG

River Rd_IX.JPG