EVERSOURCE

Operations Project Authorization Form

Approved on July 6, 2022 EPAC

Link to Meeting Minutes

Project Title: [redacted] **Transformer Replacement**	**Project Number: CS00602**
Date Prepared: 06/24/2022	**Company: Eversource CT**
Organization: Asset Management	**Class(es) of Plant: D SS**
Project Initiator: [redacted]	**Project Category: Stations - Transformers**
Managing Organization: Transmission / Major Projects	**Schedule ID#: CS00602**
Project Manager: [redacted]	**Project Type: Specific**
Project Sponsor: [redacted]	**Capital Investment part of original Op Plan: Yes**
Estimated in service date: August 31, 2022	**Emergency Related Request? Yes**
Eng./Constr. Resources Budgeted? Yes	**Facility Type** (check all that apply): ☐ PTF ☐ non-PTF ☒ Distribution ☐ N/A (General Plant)
Total Capital Request: $4.495M	**Authorization Type: Full Funding**

[1] EXECUTIVE SUMMARY

This full funding request of $4.495M is to replace the [redacted] at [redacted] CT. [redacted] Extensive testing was completed on the failed transformer, and it was determined that it cannot be repaired. See background section below.

An existing spare transformer, T10160, has been located at the [redacted] and can be relocated to the [redacted] to be used as a replacement for the failed transformer. [redacted]

An emergent annual work order, 80242180, has been set up to begin the work under the funding project DSEQ22. The total prior charges to June 24, 2022 are $331K. The charges to this work order will be transferred to the CS00602 project work order when full funding is approved, and the work order assigned. IFC drawings have been issued. The preliminary

estimate, new foundation work and the connection of a mobile transformer has begun under the emergent work order. The costs for the replacement of the spare [redacted] transformer are included in the cost estimate. Work is underway to back fill the spare transformer at the [redacted]

This project is being fast-tracked by substation design and construction and has an estimated in service date, August 31, 2022.

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[2] PROJECT COSTS SUMMARY

Note: Dollar values are in thousands

Line item Category	Prior Authorized	Actuals to Date	2022 to Go	2023	2024	Total
1. ROW / Easements / Land Acquisition						
2. Environmental Approvals / Permits						
3. Outreach			$10			$10
4. Siting Approvals / Permits			$25			$25
5. Engineering / Design		$9	$65			$74
6. Materials (Eversource purchased)		$47	$1,560			$1,607
7. Construction (incl matl's by contractors)		$114	$613			$728
8. Testing / Commissioning		$42	$84			$126
9. Project Mgmt Team		$3	$35			$38
10. Removals			$54			$54
11. Other			$0			$0
12. Risks			$135			$135
SUBTOTAL DIRECTS W/ RISKS	**$**	**$215**	**$2,581**			**$2,796**
13. Indirects/Overhead	$	$115	$1,243			$1,359
14. AFUDC	$	$0	$24			$25
PROJECT TOTAL – BASELINE BUDGET	**$**	**$331**	**$3,849**			**$4,180**
15. Contingency	$		$340			$340
TOTAL CAPITAL REQUEST	**$**	**$331**	**$4,189**			**$4,520**
16. Reimbursables/Customer Contribution	$		($25)			($25)
PROJECT TOTAL (LESS REIMBURSABLES)	**$**	**$331**	**$4,164**			**$4,495**
O&M	$		**$0**			**$0**
TOTAL REQUEST	**$**	**$331**	**$4,164**			**$4,495**

Other costs, project risk items and their allocations:

Risk	Allocation
1. Potential UG Obstructions for new foundation and conduits.	$35K
2. Severe Weather, Delays	$60K
3. Design development not completed in time for civil construction.	$15K
4. Environmental soil contamination disposal may be required.	$25K
Total	**$135K**

Explain unique payment provisions, if applicable:

Reimbursables value of $25K has been included in the estimate for transformer scrap value.

Identify and detail any unique O&M impacts resulting from this project: N/A

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[3] TECHNICAL JUSTIFICATION

Project Need, Objective and Justification

Project Need

On on May 9, 2022 the [redacted]-1X transformer at [redacted] in [redacted], CT failed, [redacted]. The project need is to replace the failed transformer.

The project objective is to replace an existing failed transformer with an existing spare transformer to return the substation to the original configuration of the [redacted]. This would allow the substation to meet the customer's load requirements as soon as possible. To carry the electric load of the failed transformer, a mobile transformer will be used until the replacement transformer is placed in service.

Project Justification

The justification for this project is to return the substation to the original configuration to maintain the reliability and resiliency of the transmission system.

Project Scope

The scope of work required for the replacement of the failed transformer with an existing spare transformer from the [redacted] includes:

- Connection of the 66MX Mobile transformer to the [redacted] mobile connection point.
- Removal the tree canopy along [redacted] road and clear and grade an area for a temporary fence for the existing transformer removal. Install temporary fence in the right-of-way (ROW) for the existing transformer removal.
- Removal of the failed [redacted] transformer and the existing transformer foundation.
- Soil testing has been performed under the existing foundation to analyze contaminated soil content. New soil will potentially be needed to refill based on determination from the Environmental group.
- Construction of a new foundation to facilitate the weight and larger size the relocated existing spare [redacted] transformer.
- Transport the existing spare transformer from the [redacted] to the [redacted] and place it on the 1X foundation.
- Assemble, test, and energize the relocated transformer.
- Perform sound study to confirm sound is as per manufacturer's test reports. The manufacturer's test reports indicate values for the failed Westinghouse transformer is 67 dBA and the relocated spare ABB transformer is 55 dBA.
- Removal of the 66MX mobile transformer installed at the station to support station load as backup. Existing cables will be pulled back and then pulled to the plug and play interconnection box.

A constructability review was performed on 6/02/2022 (see Attachment C).

Substation Equipment

Station	Device Position / Nomenclature	Device Removals *include manufacturer*	Device Additions *include manufacturer*
[redacted]	[redacted]	[redacted]	[redacted]

See Attachment D for the nomenclature diagram.

Background

[redacted] The cost of the internal inspection was not justified and would not be performed.

[redacted]

[4] ALTERNATIVES CONSIDERED

[redacted]. A walkdown with Station Operations, Substation Engineering, P&C Engineering, Civil Engineering, and Siting, and Environmental was held May 24, 2022. A constructability walkdown with Station Operations, Substation Construction and Project Management was held June 02, 2022. The preferred alternative has been chosen and is currently being implemented under an emergent annual work order, 80242180. Alternatives considered are provided below.

Alternative 1 - Replace the 21P-1X with an existing spare (Preferred)

The preferred solution is the [redacted]

Cost Estimate – $4.056M – Planning Grade -25% / +25%. See Attachment A.

Advantages – Provides the substation with one relatively new transformer with a 16MVA increase in transformer load capability. Replacement of the 21P-1X can be completed before winter 2022. This alternative satisfies the project need to replace the failed transformer.

Disadvantages – None.

Alternative 2 - Replace the [redacted] with a New Transformer

The second alternative is the replacement of the existing [redacted] transformer with a new Eversource standard transformer. [redacted]. This alternative is similar to the preferred alternative, but a new transformer would be purchased.

Cost Estimate – $4.6M ($4.1M + $0.5M added indirects). Estimate not provided.

Advantages – [redacted] This alternative satisfies the project need to replace the failed transformer.

Disadvantages – Requires the purchase of a new transformer increasing the time to return the substation to the original configuration. This could delay the in service date by a year or more.

Alternative 3 – Connect a mobile transformer only.

This alternative to connect a mobile transformer and not replace the failed would [redacted]

[redacted]. This is not the preferred alternative and has not been estimated.

Cost Estimate – $1.1M Based on previous jobs. Estimate not provided.

Advantages – Can be implemented immediately.

Disadvantages – This alternative [redacted] and does not satisfy the project need to replace the failed transformer. [redacted]

Alternative 4 – Do nothing.

This alternative [redacted] and does not satisfy the project need to replace the failed transformer.

[5] PROJECT SCHEDULE

Milestone	Scheduled Completion Date
IFR Approval (Emergent DSEQ22 WO 80242180)	May 11, 2022
Preliminary Constructability Walkdown	June 2, 2022
Final (100%) Design Completion	June 20, 2022
EPAC Full Funding Approval Mtg	July 6, 2022
Siting Approval (N/R, exempt mod)	N/R
Start of Construction	July 1, 2022
Project In-Service Date (ISD)	August 31, 2022

[6] REGULATORY APPROVALS

Road permits will be required for transformer transport.

An exempt modification is currently being sent to the siting council and a notice of the exempt modification filing has been provided to the Mayor of the City of [redacted]. It includes the following:

[redacted]

As shown in the table below, the new transformer will be approximately the same height as the failed transformer but will be longer and wider than the failed transformer:

Dimensions (Approx. Feet)	Existing Transformer	Replacement Transformer
[redacted]		

The proposed modifications would not have a substantial adverse environmental effect or cause a significant adverse change or alteration in the physical or environmental characteristics because:

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

- Eversource's review of the Connecticut Department of Energy and Environmental Protection's Natural Diversity Data Base maps identified no state-listed endangered, threatened, or special concern species in the vicinity of the Substation.
- The work would result in short-term noises contribution from the typical of construction activities and the mobile transformer but would not result in any significant long-term changes to the noise environment because the noise from the new permanent transformer will be comparable to the noise that was generated by the failed transformer.
- A combination of topography and screening vegetation will continue to provide screening and a noise buffer between the Substation and residences located along [redacted] north, east, and south of the Substation.
- Electric and magnetic field levels would not be altered by the transformer replacement.
- The failed transformer will be temporarily stored on Eversource property adjacent to the Substation until arrangements can be made to appropriately recycle, reuse, or scrap the equipment.

[7] Risk and Risk Mitigation Plans

Contingency:

Contingency of $340K has been included for this project for unanticipated unknowns.

Risk Mitigation:

Risk Event	Risk Mitigation
1. Potential UG Obstructions for new foundation and conduits.	Will require review during construction if obstructions observed by civil contractor. Risk allocation is included in the estimate.
2. Severe Weather, Delays	Review scheduling and forecasts and may require extended labor and overtime. Risk allocation is included in the estimate.
3. Design development not completed in time for civil construction.	Engage internal and vendor resources to modify design to meet schedules. Risk allocation is included in the estimate.
4. Environmental soil contamination disposal may be required.	Provide disposal services as required. May require removal of contaminated soil and provide new soil as replacement. Risk allocation is included in the estimate.

[8] REFERENCES

References
1.
2.
3.
4.
5.

[9] ATTACHMENTS (One-Line Diagrams, Images, etc.)

Attachment	Included in Submittal?
A. Cost Estimate	YES
B. P6 Schedule	YES
C. Constructability Review	YES
D. System and Station One-Lines	YES

Project Checklist - Transmission & Substation Capital Project			
Project Name: [redacted] **Transformer Replacement**		**Project Number: CS00602**	
Facility Type: ☐BPS ☐BES ☐PTF ☐PTF non-regional ☐non-PTF ☐CIP ☒Distribution ☐General Plant			
PLANNING			
Is a NX-9 required?	Yes		
Is an ISO-NE PAC presentation required?	No		
ISO-NE Presentation Date (if completed):	N/A		
Cost in ISO-NE Presentation ($M) (if completed):	N/A		
Is a PPA required?	Yes		
ISO-NE Approval Date (if completed):	N/A		
Is a TCA Application Required?	No		
TCA Submittal Date (if submitted):	N/A		
Cost in TCA Submittal ($M) (if submitted):	N/A		
Enter ISO-NE RSP / Asset Condition ID, if assigned:	N/A		
PLANNING/PROTECTION & CONTROLS			
Are RAS/SPS/UVLs affected?	No		
OPERATIONS			
Outage Required?	☒ Primary Equipment (Power Transfer)	☐ Secondary Equipment (P&C only)	☐ Outage Not Required
Do SCLL Conditions Exist?	Yes		
Has an outage schedule been approved?	Yes		
Are Operations & Maintenance procedures/training required?	No		
STANDARDS			
Does the project include standard equipment and designs?	Yes		
SUBSTATION ENGINEERING			
Does this impact Revenue Metering	No		
Is preliminary short circuit/ breaker duty analysis required?	No		
Are there any changes to the baseline audible noise?	No		
Is there an impact to the existing ground grid?	No		
Is a Transient Over Voltage (TOV) analysis required?	No		

Project Checklist - Transmission & Substation Capital Project	
[redacted] Transformer Replacement	Project Number: CS00602
P&C ENGINEERING	
OP-22 - Are PMUs and DDR required?	No
If BPS, is an NPCC Directory #4 presentation required?	No
Are ISO-NE OP-24 Appendix B updates necessary?	No
TRANSMISSION LINE ENGINEERING	
Are there any changes that affect the baseline EMF?	No
Are there any changes that affect the baseline EMI?	No
SITING	
Is a Siting filing required? *(If yes, list in regulatory approvals section)*	No (Exempt Mod)
PERMITTING	
Is there any permitting required? *(If yes, list in regulatory approvals section)*	Yes
PROJECT SERVICES (OUTREACH) and ROW WORK COORDINATION	
What is the level of outreach expected?	Medium
Is any part of this project in an Environmental Justice Community?	No
Has ROW Coordination reviewed this project?	No
Is this project coordinating with other existing scheduled work?	No
INITIATOR	
Has a field constructability review been completed?	Yes
INVESTMENT RECOVERY	
Does the project require development of an Investment Recovery plan?	No
COST ESTIMATING	
What team/firm prepared the cost estimate?	Estimate was prepared by Eversource Engineering
Name of the person who prepared the estimate:	[redacted]
Was the estimate reviewed by Eversource Estimating?	Yes - Partial Review

ESTIMATE SUMMARY

Project Title:
Project Mgr/Lead: [redacted]
Project Number: CS00602
WO & Task #: 80242180
Estimate revision #: 00
Estimate Type - Station work

Estimate #: C-22-289
Date of Estimate 06/13/2022
Estimate done by [redacted]
In Service date (ISD) 05/31/2022

Template Revision # 01.70c1

Alt Estimate Summary for PP4 Calc (escalation separate)

Estimate #: C-22-289
Date of Estimate:06/13/2022

Project Number: CS00602
WO & Task #: 80242180

ESTIMATE SUMMARY

Estimate Type: Planning

WBS	Description	TOTAL	% of Directs	% of Total	Priors	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
1	ROW / Easements / Land purchases	$0	0.0%	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2	Environmental Approvals / Permits	$100	0.0%	0.0%	$100	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	Outreach	$9,500	0.3%	0.2%	$0	$9,500	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Siting Approvals / Permits	$24 900	0.9%	0.6%	$0	$24 900	$0	$0	$0	$0	$0	$0	$0	$0	$0
5	Engineering / Design	$73,700	2.6%	1.6%	$8,800	$64,900	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Materials (Eversource purchased)	$1,607,400	57 5%	35.6%	$47,400	$1,560,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Construction (incl matl's by contractors)	$727,700	26.0%	16.1%	$114,400	$613,300	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Testing / Commissioning	$126 300	4.5%	2.8%	$41 800	$84 500	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	PMT Project Mgmt Team	$37,700	1.3%	0.8%	$2,600	$35,100	$0	$0	$0	$0	$0	$0	$0	$0	$0
10	Removals	$54,000	1.9%	1.2%	$0	$54,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Other	$0	0.0%	0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
12	Risks	$135,000	4.8%	3.0%	$0	$135,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
125	0	$0		0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Project Directs Total w/Risks	**$2,796,300**	100 0%	61.9%	**$215,100**	**$2,581,200**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
13	Indirects/Overhead	$1.358.900		30.1%	$115.500	$1.243.400	$0	$0	$0	$0	$0	$0	$0	$0	$0
14	AFUDC	$24 700		0.5%	$400	$24 300	$0	$0	$0	$0	$0	$0	$0	$0	$0
125	0	$0		0.0%	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Project Total - Baseline Budget	**$4,179,900**		92.5%	**$331,000**	**$3,848,900**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
15	Contingency	$340,200		7.5%	$0	$340,200	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Project Total - Funding Approval Level	**$4,520,100**		100.0%	**$331,000**	**$4,189,100**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
16	Reimbursables/Customer Contribution	-$25,000			$0	-$25,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
--	-	$0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Project Total (less reimbursables)	**$4,495,100**			**$331,000**	**$4,164,100**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
	Cost per key qty (if appl)	4,495,100	$'s / EA 36/48/60 MVA 110kV-14.4kV or 110kV-23kV Delta-Wye												
	Amount of Escalation included above	$0			$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
6	Total materials - Eversource	$1 607 400			$47 400	$1 560 000	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total materials - Contractor	$88,361			-$39	$88,400	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total materials	$1,695.761			$47.361	$1.648.400	$0	$0	$0	$0	$0	$0	$0	$0	$0

NOTE: Risk / Contingency is 11.7% of Project Total Costs (incl escal/indirects/AFUDC but excl reimb.)

Estimate Range

-25%	25%
$3,371,000	**$5,619,000**

	TOTAL w/ escal broken out
ROW / Easements / Land purchas	$ -
Environmental Approvals / Permi	$ 100
Outreach	$ 9,500
Siting Approvals / Permits	$ 24 900
Engineering / Design	$ 73,700
Materials (Eversource purchased	$ 1,695,723
Construction (incl matl's by cont	$ 639,177
Testing / Commissioning	$ 126 300
PMT Project Mgmt Team	$ 37,700
Removals	$ 54,000
Other	$ -
Risks	$ 135,000
	$2,796,100
Indirects/Overhead	$ 1.358.900
AFUDC	$ 24 700
	$ -
	$4,179,700
	$ -
Contingency	$ 340,200
	$4,519,900
	$ -
	$ -
	$4,519,900
	$ -
Escal total	**$4,519,900**
Check total	$24,800

COMMENTS

Project Scope:
Key qty's and UOM (tie to inputs on est sheets) 1 EA 36/48/60 MVA 110kV-14.4kV or 110kV-23kV Delta-Wye

[redacted]

Assumptions/Clarifications:
Indirect rates based on: 11 - CT Station work

Work will be preformed by Eversource Engineering and Electrical construction, Civil construction will be out source.
Oil containment to be added after install of transformer.
Allowed $25K for reimburbusibles (copper recovery).

RISKS

Potential UG Obstructions	$ 35,000
Severe Weather Delays OT	$ 60,000
Design development	$ 15,000
Soil Contamination	$ 25,000
0	
0	
0	

		Prior		2022		2023		2024		2025		2026		2027		2028		2029		2030		2031		TOTAL	
		Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS	Mhrs	DOLLARS
CSTXX-CONSTRUCTION	R																								
Electrical Construction	LT	0	$0		$33,448	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$33,448
General Construction	LT	0	$114,392		$104,280		$0		$0		$0		$0		$0		$0		$0		$0		$0		$218,672
SCADA / Automation	LT	0	$0		$4,200		$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$4,200
Telecom - Field	LT	0	$0		$1,976		$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$1,976
Construction Reps (Interns)	LT	0	$0		$12,800		$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$12,800
Support Switch/Tag	LT	0			$6,650		$0		$0	0	$0	0	$0	0	$0		$0		$0		$0		$0		$6,650
Other (specify)	LT	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0		$0		$0		$0	0	$0
Other (specify)	LT	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0		$0		$0		$0	0	$0
Other (specify)	LT	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0		$0		$0		$0	0	$0
LT Total		0	$114,392		$163,354	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$277,746
Employee Expenses	AE	0	$0		$8,188		$0		$0		$0		$0		$0		$0		$0		$0		$0		$8,188
Construction Purchased Material	AM	0	$0		$4,910		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$4,910
Outside Construction Vendor	AO	0	$0		$383,309	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$383,309
Sales tax on Constr. Vendor		0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
Vehicles (now in Indirects section)	AV	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
Inspection services (Outside Vendor)	AQ	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Construction Insp (Outside vendor)	AQ	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Rents and Leases	BR	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
CSTXX Subtotal		0	$114,392		$529,741		$0		$0		$0		$0		$0		$0		$0		$0		$0		$644,133
Escalation		0	$0																					0	$0
		0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
CSTXX Total		0	$114,392		$529,741	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$644,133
ENRXX-TG ENGINEERING/DESIGN																									
Project Services/Drafting	LT	0			$8,712	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$8,712
T- Line Engineering/Design	LT	0			$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
D- Street Engineering/Design	LT	0			$3,872	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$3,872
Civil Engineering/Design	LT	0			$1,936	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$1,936
Substation (T) Engineering/Design	LT	0	$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Substation (D) Engineering/Design	LT	0	$8,703		$16,800	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$25,503
Protection & Controls Engineering	LT	0	$3,071		$23,814	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$26,885
Survey Engineering	LT	0	$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
SCADA / Automation Engineering	LT	0	$0		$4,448	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$4,448
Telecom Engineering	LT	0	$0		$2,224	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$2,224
Other - specify	LT	0	$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Other - specify	LT	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
LT Total		0	$8,774		$61,806	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$70,580
Employee Expenses	AE	0	$0		$3,090		$0		$0		$0		$0		$0		$0		$0		$0		$0		$3,090
Contractor Engineering - T-Lines	AQ	0	$0	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
Contractor Engineering - D-Street	AQ	0	$0	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
Contractor Engineering - T -Station	AQ	0	$0	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
Contractor Engineering - D-Station	AQ	0	$0	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
Contractor Engineering - PSC	AQ	0	$0	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
Contractor Engineering - Survey	AQ	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Contractor Engineering - SCADA / Automation	AQ	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Contractor Engineering - Telecom	AQ	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Contractor Engineering - Specify	AQ			0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Contractor Engineering - Specify	AQ	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Contractor Engineering - Specify	AQ	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Vehicles (now in Indirects section)	AV	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
ENRXX Subtotal		0	$8,774		$64,896		$0		$0		$0		$0		$0		$0		$0		$0		$0		$73,670
Escalation		0	$0																					0	$0
	0%	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
ENRXX Total		0	$8,774		$64,896	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$73,670
LNDXX-TG LAND																									
Real Estate	LT	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Employee Expenses	AE	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
Purchase Land	AM	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
Vehicles (now in Indirects section)	AV	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
Fees and Payments	BF	0	$0																					0	$0
LNDXX Subtotal		0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
Escalation		0	$0																					0	$0
	0%	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
LNDXX Total		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
MATXX-TG MATERIAL																									
Eversource	AM	0	$47,381		$1,493,373		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$1,540,754
Outside Services	AM	0			$88,423		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$88,423
	AM	0	$0																					0	$0
Freight	0%	0	$0																					0	$0
Sales Tax Eversource/outside services	5.9%	0	$0		$61,700		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$61,700
Other	0%	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
MATXX Subtotal		0	$47,381		$1,643,496		$0		$0		$0		$0		$0		$0		$0		$0		$0		$1,690,877
Escalation		0	$0																					0	$0
	0%	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
MATXX Total		0	$47,381		$1,643,496		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$1,690,877
PSMXX-PROJECT MANAGER & SUPPORT																									
Project Management (PM)	LT	0	$2,820		$26,208	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$29,028
Project Planning/Cost (IP)	LT	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Contracts/Purchasing (CIP)	LT	0			$2,144		$0		$0		$0		$0		$0		$0		$0		$0		$0		$2,144
System Planning	LT	0			$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
Environmental	LT	0	$108	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$108
SCS - Traditional	LT	0	$0		$3,803	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$3,803
Legal	LT	0			$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
Estimating	LT	0			$1,184		$0		$0		$0		$0		$0		$0		$0		$0		$0		$1,184
Sitng - Exempt Modification	LT	0			$1,200		$0		$0		$0		$0		$0		$0		$0		$0		$0		$1,200
Asset Management	LT	0			$2,398		$0		$0		$0		$0		$0		$0		$0		$0		$0		$2,398
Other - Traffic Control for Tx Transport	LT	0			$1,385		$0		$0		$0		$0		$0		$0		$0		$0		$0		$1,385
Other -	LT				$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
Other -	LT	0			$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
Other -	LT	0			$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
LT Total		0	$2,728		$36,190	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$40,918
Employee Expenses	AE	0	$0		$1,812	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$1,812
Project Support Vendor - PM	AQ	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Project Support Vendor - IP	AQ	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Project Support Vendor - CIP	AQ	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Project Support Vendor - System Planning	AQ	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Project Support Vendor - Environmental	AQ	0.0%		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Project Support Vendor - SCS - Traditional	AQ	0.0%		0	$5,700	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$5,700
Project Support Vendor - Legal	AQ	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Project Support Vendor - Estimating	AQ	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Project Support Vendor - Sitng - Exempt Modification	AQ	0.0%		0	$23,700	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$23,700
Project Support Vendor - Asset Management	AQ	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Project Support Vendor - Other	AQ	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Project Support Vendor - Other	AQ	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Project Support Vendor - Other	AQ	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Project Support Vendor - Other	AQ	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Vehicles (now in Indirects section)	AV	0.0%		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Property or CMSP tax large proj. allowance	BR	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Builder All risk insurance excluding deductables(if project is over $50m)	BR			0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Fees and Payments - Environmental	BF	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Fees and Payments - Sitng	BF	0	$0		$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
Fees and Payments - Other	BF	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$0
PSMXX Subtotal			$2,728		$66,502		$0		$0		$0		$0		$0		$0		$0		$0		$0		$72,228
Escalation		0	$0																					0	$0
	0%	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
PSMXX Total		0	$2,728		$66,502	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$72,228
RSMXX-TG REMOVAL																									
Engineering/Design	LT	0	$0		$26,886		$0		$0		$0		$0		$0		$0		$0		$0		$0		$26,886
Internal Construction	LT	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
LT Total		0	$0		$26,886		$0		$0		$0		$0		$0		$0		$0		$0		$0		$26,886
Employee Expenses	AE	0	$0		$4,003		$0		$0		$0		$0		$0		$0		$0		$0		$0		$4,003
Outside Services	AO	0.0%	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
Contractor Labor	AQ	0.0%	$0		$23,340	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$23,340
Vehicles (now in Indirects section)	AV	0.0%	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
Rents and Leases	BR	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
RSMXX Subtotal		0	$0		$54,231		$0		$0		$0		$0		$0		$0		$0		$0		$0		$54,231
Escalation		0	$0																					0	$0
	0%	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
RSMXX Total		0	$0		$54,231	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$54,231
TSTXX-TG TEST																									
Test / Field Engr. Labor (In House)	LT	0	$27,673		$51,200	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$78,873
Lead Coordinator Engr. (LCE) (Internal)	LT	0	$13,937		$15,600	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$29,537
Employee Expense	AE	0	$0		$7,680		$0		$0		$0		$0		$0		$0		$0		$0		$0		$11,881
Test / Field Engr. Labor (contractor)	AQ	0		0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Lead Coordinator Engr. (LCE) (contractor)	AQ	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Vehicles (now in Indirects section)	AV	0.0%	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
TSTXX Subtotal		0	$41,610		$84,480		$0		$0		$0		$0		$0		$0		$0		$0		$0		$130,471
Escalation		0	$0																					0	$0
	0%	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
TSTXX Total		0	$41,610		$84,480	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$130,471
SUBTOTAL PROJECT DIRECT COST		-	$218,865		$2,448,148	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$2,666,366
																								0	$0
Risk																									
Risk					$135,000		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$135,000
				0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$0
				0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -	0	$0
Risk Total			$0		$135,000		$0		$0		$0		$0		$0		$0		$0		$0		$0		$135,000
TOTAL PROJECT DIRECT COST (w risk)		-	$218,865		$2,581,148	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0		$2,800,366
INDIRECTS																									
Non-Productive Time Allocation (ZNP)	17.0%	0	$28,857		$60,360		$0		$0		$0		$0		$0		$0		$0		$0		$0		$89,250
Payroll Benefits Allocation (ZPB) Incl NPT	44.0%	0	$13,784		$137,370		$0		$0		$0		$0		$0		$0		$0		$0		$0		$148,154
Gen SVC CO Overhead (ZGS) Incl NPT	80.0%	0	$8,007		$90,594		$0		$0		$0		$0		$0		$0		$0		$0		$0		$102,600
S&S Allocations (ZSS,ZSE, ZSH)	50.0%	0	$39,579		$633,110		$0		$0		$0		$0		$0		$0		$0		$0		$0		$672,688
AS&E Allocations (ZAS)	1.3%	0	$1,494		$40,907		$0		$0		$0		$0		$0		$0		$0		$0		$0		$42,401
Stores Expense Allocation (ZST)	8.0%	0	$2,279		$119,470		$0		$0		$0		$0		$0		$0		$0		$0		$0		$121,749
Lobby Stock	0.0%	0	$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0
MDEC (ZME)	6.0%	0	$4,647		$153,876		$0		$0		$0		$0		$0		$0		$0		$0		$0		$158,523
Vehicles (ZVE)	28.0%	0	$25,939		$102,715		$0		$0		$0		$0		$0		$0		$0		$0		$0		$128,654
	0.0%	0	$0	0.00%	$0	0.00%	$0	0.00%	$0	0.00%	$0	0.00%	$0	0.00%	$0	0.00%	$0	0.00%	$0	0.00%	$0	0.00%	$0		$0
Indirects Subtotal			$115,483		$1,243,409		$0		$0		$0		$0		$0		$0		$0		$0		$0		$1,358,892
TOTAL PROJECT COST - Direct & Indirect (excl APUDC)			$334,347		$3,824,556		$0		$0		$0		$0		$0		$0		$0		$0		$0		$4,159,258
APUDC																									
																									$0
APUDC (ZIA)			$437	6.50%	$24,302	6.50%	$0	6.50%	$0	6.50%	$0	6.50%	$0	6.50%	$0	6.50%	$0	6.50%	$0	6.50%	$0	6.50%	$0		$24,739
In Service Dollars				$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		0	$0
Cumulative ISB				-		-		-		-		-		-		-		-		-		-		0	$0
																								0	$0
APUDC Subtotal			$437		$24,302		$0		$0		$0		$0		$0		$0		$0		$0		$0		$24,739
TOTAL PROJECT COST - Baseline Budget			$334,994		$3,848,857		$0		$0		$0		$0		$0		$0		$0		$0		$0		$4,184,022
Contingency		-																							$0
Contingency		-	$0		$340,159		$0		$0		$0		$0		$0		$0		$0		$0		$0		$340,159
Other		-	$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$0
																									$0
Contingency SubTotal			$0		$340,159		$0		$0		$0		$0		$0		$0		$0		$0		$0		$340,159
TOTAL PROJECT COST - Approved Funding			$334,994		$4,188,548		$0		$0		$0		$0		$0		$0		$0		$0		$0		$4,524,211
Reimbursables / Customer Contribution																									$0
Reimbursables / Customer Contribution (enter as negative)			$ -		$ (25,000)		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		-$25,000
	0.0%		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0		$0	0	$0
TOTAL PROJECT COST			$334,994		$4,184,548		$0		$0		$0		$0		$0		$0		$0		$0		$0		$4,499,211

Activity ID	Activity Name	Start	Finish	DEPT - DEPARTMENT	Resources
[redacted]	Transformer Replacement (CS00602)	22-Jun-21 08 AM A	14-Mar-23 04 PM		
	INITIALIZATION AND SCOPE DEVELOPEMENT	24-May-22 12 AM A	22-Jul-22 04 PM		
START	SCHEDULE START MILESTONE	24-May-22 12 AM A		PM	
	Initial Funding	24-May-22 12 AM A	31-May-22 04 PM A		
PI1200	N/R Project Initiator Develop Intitial Funding Request	24-May-22 08 AM A	24-May-22 04 PM A	AM.ENG	[redacted]
PI1300	N/R Initial Funding Request Approved @ EPAC	24-May-22 08 AM A	24-May-22 04 PM A		Eversource Project Appı
PI1000	N/R Submit Initial Funding Request		24-May-22 04 PM A		
PI1600	N/R Assign Cost Analyst	24-May-22 12 AM A	24-May-22 04 PM A	PM	[redacted]
PI1610	N/R Initial Funding PowerPlan Approval Create WO#	24-May-22 12 AM A	24-May-22 04 PM A		Eversource Project Appı
PI1400	Assign Project Manager Request Resources for Project Team	31-May-22 12 AM A	31-May-22 04 PM A	PM	[redacted]
PI1500	Assign Scheduler	31-May-22 12 AM A	31-May-22 04 PM A	PM	[redacted]
	SDC Approval	24-May-22 12 AM A	24-May-22 04 PM A		
SSF1000	N/R Develop Soultions Selection Form (SSF)	24-May-22 12 AM A	24-May-22 12 AM A	PM	[redacted]
SDC1000	N/R (per SA 2/19/21)Solution Design Committee (SDC) Approval	24-May-22 12 AM A	24-May-22 12 AM A		Solution Design Comm
CE1710	N/R Conduct Conceptual Constructability Walk Down	24-May-22 12 AM A	24-May-22 12 AM A	PM	[redacted]
CE1600	N/R Conduct Project Team Kickoff Meeting Verify SDC Need	24-May-22 12 AM A	24-May-22 12 AM A	PM	
CE1720	N/R Conduct Conceptual Constructability Walk Down "Second walk out"	24-May-22 12 AM A	24-May-22 12 AM A	PM	
CGE1000	N/R Develop Conceptual Grade Estimate (-25%+50%)	24-May-22 08 AM A	24-May-22 04 PM A	AM.ENG	
	Project Initiation	24-May-22 12 AM A	22-Jul-22 04 PM		
	N/R EPAC Partial Funding	24-May-22 12 AM A	24-May-22 04 PM A		
PE1720	Engineering Scope Document Complete		24-May-22 12 AM A	ST.SS.ELEC	
PF1000	N/R EPAC Partial Funding Approval		24-May-22 04 PM A		
ATCGE1	N/R Develop At Least Conceptual Grade Estimate (-25%+50% Partial Funding)	24-May-22 08 AM A	24-May-22 04 PM A	ST.SS.ELEC	[redacted]
PE1600	N/R Review Preliminary Siting & Permitting (If Required)	24-May-22 08 AM A	24-May-22 04 PM A	ST.SS.ELEC	
PE1700	N/R Conduct Preliminary Constructability Walk Down	24-May-22 08 AM A	24-May-22 04 PM A	PM	Project Manager Gener
PAFP10(	N/R Submit Partial Funding PAF for Internal Review	24-May-22 08 AM A	24-May-22 04 PM A	AM.ENG	[redacted]
PAFP11(	N/R Incorporate Internal Review Comments & Submit Partial Funding PAF to EPAC for Rev	24-May-22 08 AM A	24-May-22 04 PM A	AM.ENG	
PAFP12(	N/R EPAC Partial Funding Meeting		24-May-22 04 PM A		
PF1010	N/R Partial Funding PowerPlan Approval	24-May-22 08 AM A	24-May-22 04 PM A		
PAFP12	N/R Incorporate EPAC Partial Funding PAF Review Comments	24-May-22 08 AM A	24-May-22 04 PM A	AM.ENG	Tony Vandenberg-V
ATCGE1	N/R BQA Reviews Conceptual Grade Estimate (-25%+50% Partial Funding)	24-May-22 08 AM A	24-May-22 04 PM A	BQA.EST	Ghari A. Bassaragh
PE1710	Create Engineering Scope Document	24-May-22 08 AM A	24-May-22 04 PM A	ST.SS.ELEC	Gerard J. Burke
	EPAC Full Funding	24-May-22 08 AM A	22-Jul-22 04 PM		
DE1800	Review Detail Siting & Permitting (If Required)	24-May-22 08 AM A	24-May-22 04 PM A	ST.SS.ELEC	Gerard J. Burke
DE1900	Conduct Prelim Constructability Walk Down	02-Jun-22 12 AM A	02-Jun-22 12 AM A	PM	Martin D. Malin, Lance
DE1600	Create Planning Grade Estimate (+/-25% Full Funding)	13-Jun-22 12 AM A	15-Jun-22 04 PM A	ST.SS.ELEC	Gerard J. Burke
DE1700	N/R Conduct Initial Risk Management & SCLL Review (Project Initiator & PM)	13-Jun-22 12 AM A	20-Jun-22 04 PM A	PM	John Womack, Lance E
DE2000	Project Constructability Review Complete	13-Jun-22 12 AM A	20-Jun-22 04 PM A	PROJ	Sean Archer, Tony Vand
DE2010	Review Planning Grade Estimate (+/-25% Full Funding)	20-Jun-22 08 AM A	22-Jun-22 04 PM A	BQA.EST	Ghari A. Bassaragh
PAFF20(	Submit Full Funding PAF for Internal Review	24-Jun-22 08 AM A	28-Jun-22 02 PM	AM.ENG	Tony Vandenberg-V
PAFF21(	Incorporate Internal Review Comments & Submit Full Funding PAF to EPAC for Review	28-Jun-22 02 PM	28-Jun-22 04 PM	AM.ENG	Tony Vandenberg-V
PAFF211	FF PAF Present at EPAC	06-Jul-22 08 AM*	06-Jul-22 08 AM		
PAFF22(	Incorporate EPAC Full Funding PAF Review Comments	06-Jul-22 08 AM	08-Jul-22 04 PM	AM.ENG	Tony Vandenberg-V
FF1000	EPAC Full Funding Approval	11-Jul-22 08 AM	15-Jul-22 04 PM		Eversource Project Appı
FF1010	Full Funding PowerPlan Approval	18-Jul-22 08 AM	22-Jul-22 04 PM		Eversource Project Appı
	T-Minus Milestones	24-May-22 12 AM A	01-Jul-22 08 AM		
	Civil T-Minus Milestones	24-May-22 08 AM A	01-Jul-22 08 AM		

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Activity ID	Activity Name	Start	Finish	DEPT - DEPARTMENT	Resources
BT0801	ALL PERMITS RECEIVED		24-May-22 08 AM A	PM	
AT0401	N/R - ALL CIVIL MATERIAL RECEIVED, STAGED, INVENTORIED, REVIEWED		24-May-22 08 AM A	CONS	
AT1801	N/R T-04 ALL FIRM TOA APPLICATIONS DUE TO LCC (for DISTRIBUTION Transformer 1		24-May-22 08 AM A	CONS	
AT0805C	Civil IFC - Civil (BG) w/BOM		03-Jun-22 08 AM A	ST.SS.CIVL	
AT1811	70% Civil Design / Engineering Completed		10-Jun-22 04 PM A	PROJ	
AT0203	CAN COMPLETE Civil(CONSTRUCTION AUTHORIZATION NOTICE)		30-Jun-22 04 PM	PM	
AT00	T-00 START OF CIVIL CONSTRUCTION	01-Jul-22 08 AM		CONS	
Electrical T-Milestones 1X XFMR Pad		24-May-22 04 PM A	01-Jul-22 08 AM		
BT1801	N/R T-04 ALL FIRM TOAAPPLICATIONS DUE TO LCC (for DISTRIBUTION Transformer		24-May-22 04 PM A	CONS	
BT3001	Eng. Project Scoping Document Issued (Scope Lockdown)		02-Jun-22 04 PM A		
BT1811	70% Detail Design/Engineering Completed		10-Jun-22 04 PM A		
CT0805I	Elect IFC - Electrical (AG) w/Final BOM for the First Transformer		24-Jun-22 04 PM A	ST.SS.ELEC	
BT00	T-00 START OF CONSTRUCTION - 1X XFMR Pad	01-Jul-22 08 AM*		CONS	
P&C T-Minus Milestones		24-May-22 12 AM A	22-Jun-22 04 PM A		
ET1202	N/R P/C Description / Draft OI Issued To LCC		24-May-22 12 AM A	ST.P&C.P&C	
ET1201	SCADA Date (Tab) Sheets/Signal List Sent to LCC		24-May-22 12 AM A	ST.P&C.P&C	
ET00	T-00 START OF CONSTRUCTION - WO#80242180	25-May-22 08 AM A		CONS	
ET0805P	P&C IFC - P&C w/BOM		22-Jun-22 04 PM A		
ENVIRONMENTAL APPROVALS AND PERMITS		24-May-22 08 AM A	24-May-22 04 PM A		
PREPARE COMPLIANCE MATRICES - REGULATORY & COMMITMENTS		24-May-22 08 AM A	24-May-22 04 PM A		
A1230	N/R - Prepared Compliance Matrices - Regulatory	24-May-22 08 AM A	24-May-22 04 PM A	PM	Siting Manager, [redacted]
A1220	N/R - Prepared Compliance Matrices - Non-Reggulatory (Commitments)	24-May-22 08 AM A	24-May-22 04 PM A	PM	[redacted]
SITING APPROVALS AND PERMITS		24-May-22 12 AM A	24-May-22 04 PM A		
A3560	N/R - Permitting - PM Send Scope to Siting Team	24-May-22 12 AM A	24-May-22 12 AM A	PM	[redacted]
A3570	N/R - Permitting - Siting Team Review Scope to Determine Siting Requirements (e.g. zoning	24-May-22 12 AM A	24-May-22 04 PM A	PM	
A3590	N/R - Permitting - If transformer changes substation footprint, conduct zoning review	24-May-22 12 AM A	24-May-22 04 PM A	PM	
A3600	N/R - Permitting - Meet with Building Inspector	24-May-22 12 AM A	24-May-22 04 PM A	PM	
A3610	N/R - Permitting - Obtain Special Use Permit	24-May-22 12 AM A	24-May-22 04 PM A	PM	
ENGINEERING & DESIGN		01-May-22 08 AM A	29-Aug-22 04 PM		
Civil Engineering		01-Jun-22 08 AM A	10-Jun-22 04 PM A		
DSSE-120	Civil Package IFC Engineer & Internal Review	06-Jun-22 12 AM A	06-Jun-22 12 AM A	ST.SS.CIVL	AI Engineers, [redacted]
DSSE-100	Design Package to Civil	06-Jun-22 08 AM A	06-Jun-22 04 PM A	ST.SS.ELEC	[redacted]
DSSE-110	Civil Package to Design Engineer and Internal Review	01-Jun-22 08 AM A	10-Jun-22 04 PM A	ST.SS.CIVL	AI Engineers, [redacted]
Electrical Engineering Transformer 1X		24-May-22 08 AM A	18-Jul-22 04 PM		
DSSE-200	Detail Electrical Design Package Design to Drafting	24-May-22 08 AM A	24-May-22 04 PM A	ST.SS.ELEC	[redacted]
DSSE-205	Detail Electrical Design Package Drafting	01-Jun-22 08 AM A	13-Jun-22 04 PM A	ST.SS.ELEC	
DSSE-210	Final (100%) Electrical Design Package IFR	13-Jun-22 08 AM A	20-Jun-22 04 PM A	ST.SS.ELEC	
DSSE-260	Submit Electrical Design to Siting & Permitting for Filing w/Regulator Authority	24-Jun-22 08 AM A	24-Jun-22 04 PM A	ST.SS.ELEC	
DSSE-230	Electrical Engineering - BOM Complete	20-Jun-22 08 AM A	24-Jun-22 04 PM A	ST.SS.ELEC	
DSSE-240	Electrical Engineering - Electrical Package IFC (Physical & Electrical)	24-Jun-22 08 AM A	24-Jun-22 04 PM A	ST.SS.ELEC	
DSSE-920	Operating Instructions - SSED Review Draft Convex OI	24-Jun-22 08 AM A	15-Jul-22 04 PM	ST.P&C.P&C	
DSSE-460	Operating Instructions - SSED Review Draft Distribution OI	24-Jun-22 08 AM A	18-Jul-22 04 PM	ST.SS.ELEC	
Transformer- Vendor Drawings with Schematics		24-May-22 08 AM A	24-May-22 04 PM A		
DSSE-11	N/R Vendor Submits Firm Transformer Drawings & Schematics	24-May-22 12 PM A	24-May-22 12 PM A	ST.SS.ELEC	Hyosung Corporation, (
DSSE-11	N/R Vendor Submits Transformer Drawings & Schematics	24-May-22 08 AM A	24-May-22 04 PM A	ST.SS.ELEC	Hyosung Corporation, (
DSSE-11	N/R ES Reviews & Comments Transformer Drawings & Schematics	24-May-22 08 AM A	24-May-22 04 PM A	ST.SS.ELEC	[redacted]
P&C Engineering		01-May-22 08 AM A	29-Aug-22 04 PM		

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Activity ID	Activity Name	Start	Finish	DEPT - DEPARTMENT	Resources
DSSE-220	N/R - SDS Complete (~= P&C IFC)	06-Jun-22 12 AM A	06-Jun-22 12 AM A	ST.P&C.P&C	[redacted]
DSSE-400	Prepare & Issue P&C Design Package to Drafting	01-May-22 08 AM A	13-Jun-22 12 AM A	ST.P&C.P&C	
DSSE-410	Drafting Prepare & Issue Back to P&C	14-Jun-22 12 AM A	20-Jun-22 04 PM A	ST.SS.ELEC	
A3380	Issue P&C Package Design w/BOM	20-Jun-22 08 AM A	24-Jun-22 04 PM A	ST.P&C.P&C	
DSSE-990	P&C INITIATE SCADA Data Sheets	24-Jun-22 08 AM A	24-Jun-22 04 PM A	ST.P&C.P&C	
DSSE-450	Operating Instructions - Prepare and Issue Draft Distribution OI to Engineering	09-Aug-22 08 AM	22-Aug-22 04 PM		
DSSE-470	Operating Instructions - P&C Review Draft Distribution OI	23-Aug-22 08 AM	29-Aug-22 04 PM	ST.P&C.P&C	
DSSE-930	Operating Instructions - P&C Review Draft Convex OI	23-Aug-22 08 AM	29-Aug-22 04 PM	ST.P&C.P&C	
Relay Settings		24-May-22 12 AM A	08-Aug-22 04 PM		
A7560	P&C Completes Line Constants	24-May-22 12 AM A	20-Jun-22 04 PM A	ST.P&C.P&C	[redacted]
A7440	P&C Prepare and Issue Relay Settings to Field (Prior to Line going into Service)	06-Jul-22 08 AM	08-Aug-22 04 PM	ST.P&C.P&C	
MATERIAL PROCUREMENT		01-Jun-22 08 AM A	22-Jun-22 04 PM A		
MATERIAL FOR CIVIL		01-Jun-22 08 AM A	22-Jun-22 04 PM A		
DSSE-500	MATERIAL - CIVIL - Prepare & Issue DR	01-Jun-22 08 AM A	06-Jun-22 04 PM A	ST.SS.CIVL	[redacted]
DSSE-600	Civil (BG) Material Ordered		06-Jun-22 04 PM A	ST.SS.CIVL	
DSSE-1040	MATERIAL - CIVIL - Procurement Issue PO	07-Jun-22 08 AM A	08-Jun-22 04 PM A	PURC	
DSSE-560	MATERIAL - CIVIL - Material Coordinator Confirm Material Delivery to Site	22-Jun-22 08 AM A	22-Jun-22 08 AM A	PURC	
DSSE-1050	MATERIAL - CIVIL - Material Vendor Delivery Leadtime	22-Jun-22 08 AM A	22-Jun-22 04 PM A	PURC	
MATERIAL FOR ELECTRICAL		13-Jun-22 08 AM A	22-Jun-22 04 PM A		
Material - Electrical 1X		13-Jun-22 08 AM A	22-Jun-22 04 PM A		
DSSE-5[illegible]	MATERIAL - Electrical - Prepare & Issue DR	13-Jun-22 08 AM A	14-Jun-22 12 AM A	ST.SS.ELEC	[redacted]
DSSE-5[illegible]	Electrical (AG) Material Ordered		14-Jun-22 12 AM A	ST.SS.ELEC	
DSSE-1[illegible]	MATERIAL - Electrical - Procurement Issue PO	20-Jun-22 08 AM A	20-Jun-22 04 PM A	PURC	Purchasing Department
DSSE-1[illegible]	MATERIAL - Electrical - Material Vendor Delivery Leadtime	20-Jun-22 08 AM A	20-Jun-22 04 PM A	PURC	Purchasing Department
DSSE-5[illegible]	MATERIAL - Electrical - Material Coordinator Material Delivery to Site	20-Jun-22 08 AM A	22-Jun-22 04 PM A	PURC	
MATERIAL FOR P&C		20-Jun-22 08 AM A	22-Jun-22 04 PM A		
DSSE-510	MATERIAL - P&C - Prepare & Issue DR	20-Jun-22 08 AM A	20-Jun-22 04 PM A	ST.P&C.P&C	[redacted]
DSSE-980	MATERIAL - P&C - Procurement Issue PO	20-Jun-22 08 AM A	20-Jun-22 04 PM A	PURC	Purchasing Department
DSSE-1010	MATERIAL - P&C - Material Coordinator Confirm Material Delivery to Site		22-Jun-22 04 PM A	PURC	
DSSE-1000	MATERIAL - P&C - Material Vendor Delivery Leadtime	20-Jun-22 08 AM A	22-Jun-22 04 PM A	PURC	
CONSTRUCTION		22-Jun-21 08 AM A	28-Oct-22 04 PM		
DSSE-480	PE INITIATES CASCADE FORMS (Apendix A) for Construction	29-Jul-22 08 AM*	18-Aug-22 04 PM	ST.SS.ELEC	[redacted]
A20240	ISD		31-Aug-22 04 PM		
CONSTRUCTION - CIVIL		22-Jun-21 08 AM A	21-Jul-22 04 PM		
TOA-Const	Civil Construction Start Milestone	01-Jul-22 08 AM		CONS	
1050	Civil Construction - General Contruction work	01-Jul-22 08 AM	21-Jul-22 04 PM	CONS	
CFM20	Civil Construction Finish Milestone		21-Jul-22 04 PM	CONS	
Civil Construction Service / Contracts		22-Jun-21 08 AM A	30-Jun-22 04 PM		
A3550	STAFFING DECISION -CONSTRUCTION: EVERSOURCE OR OUTSOURCE BID/COC	01-Jun-22 08 AM A	01-Jun-22 04 PM A	PM	[redacted]
CONSTRUCTION SERVICES - BID PROCESS		10-Jun-22 08 AM A	30-Jun-22 04 PM		
A3430	CONST.SERVICES - BID - Eversource provide Spec / RFP	10-Jun-22 08 AM A	10-Jun-22 04 PM A	PURC	Purchasing Department
A3440	CONST.SERVICES - BID - Contractors Evaluate RFP and Provide Proposal	10-Jun-22 08 AM A	16-Jun-22 04 PM A		CT/WMA.Construction (
A3450	CONST.SERVICES - BID - Eversource reviews contractor proposals	16-Jun-22 08 AM A	16-Jun-22 04 PM A		[redacted] Purchasin
A3460	CONST.SERVICES - BID - Contract is Awarded - PO Issued	10-Jun-22 08 AM A	30-Jun-22 04 PM	PURC	Purchasing Department
CONSTRUCTION SERVICES - Civil Construction		22-Jun-21 08 AM A	30-Jun-22 04 PM		
A3470	COC Submittal and Approval	20-Jun-22 08 AM A	24-Jun-22 04 PM A		
A3420	CONST.SERVICES - Eversource Awards Contract - PO Issued	22-Jun-21 08 AM A	30-Jun-22 04 PM	PURC	Purchasing Department

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Activity ID	Activity Name	Start	Finish	DEPT - DEPARTMENT	Resources
CONSTRUCTION - ELECTRICAL		01-Jul-22 08 AM	28-Oct-22 04 PM		
First Transformer Installation - 17R-1X XFMR		01-Jul-22 08 AM	28-Oct-22 04 PM		
CSM	Electrical Construction Start Milestone	01-Jul-22 08 AM		CONS	
1040	Transport spare transformer from [redacted]	12-Jul-22 08 AM*	12-Jul-22 04 PM	CONS	Construction Resources
1090	Spot Spare ABB XMFR on pad at East Meriden 21P	13-Jul-22 08 AM	13-Jul-22 04 PM	CONS	
1100	Spare Transformer On pad		13-Jul-22 04 PM		
1110	Dress Out New XMFR and install HVoltage Bushings	14-Jul-22 08 AM	29-Jul-22 04 PM		
1120	Stub up Control Conduits to XMFR and pull Control Cabling	14-Jul-22 08 AM	29-Jul-22 04 PM		
1130	Install Relays, Wiring and Terminate Control Cables at XMFR	14-Jul-22 08 AM	29-Jul-22 04 PM		
1140	Vacudyne new ABB XMFR	01-Aug-22 08 AM	02-Aug-22 04 PM		
1150	Phase New 21P-1X and Pickup Load	30-Aug-22 08 AM	30-Aug-22 04 PM		
CFM	Electrical Construction Finish Milestone		31-Aug-22 04 PM	CONS	
ISD01	EQUIPMENT IN SERVICE DATE - 21P-1X XFMR		31-Aug-22 04 PM	CONS	
1160	Energize New ABB 21P-1X	31-Aug-22 08 AM	31-Aug-22 04 PM		
A3640	Field Prepares & Submit Electrical Field Mark Ups	24-Oct-22 08 AM*	28-Oct-22 04 PM	ENGR.FIELD	[redacted]
A3650	Field Prepares & Submit P&C Field Mark Ups	24-Oct-22 08 AM*	28-Oct-22 04 PM	ENGR.FIELD	
CONSTRUCTION - P&C		27-Jun-22 08 AM	19-Aug-22 04 PM		
A1140	Construction - P&C Implement & Document Relay Settings	27-Jun-22 08 AM	19-Aug-22 04 PM	CONS	Construction Rep Gene
CONSTRUCTION - CONST.REP TASKS		24-May-22 08 AM A	12-Sep-22 04 PM		
A1280	N/R Construction Rep SUBMIT OUTAGE REQUESTS for TRANSFORMER INSTALLATIOI	24-May-22 08 AM A	24-May-22 04 PM A	CONS	Construction Rep Gene
A1290	N/R Construction Rep SUBMIT OUTAGE REQUESTS for TRANSFORMER TEST ENERG	24-May-22 08 AM A	24-May-22 04 PM A	CONS	Construction Rep Gene
A1250	N/R Construction Rep SUBMIT OUTAGE REQUESTS for NON-transformer equipment (4 w	24-May-22 08 AM A	24-May-22 04 PM A	CONS	Construction Rep Gene
A1260	Construction Rep Finalize CASCADE Forms (within 14 days folloiwng ISD)	29-Aug-22 08 AM*	12-Sep-22 04 PM	CONS	Construction Rep Gene
CONSTRUCTION RESOURCE TRACKING		01-Jul-22 08 AM	21-Jul-22 04 PM		
CONSTelec	RESOURCE ONLY ACTIVITY - CONSTRUCTION - ELECTRICIAN	01-Jul-22 08 AM	01-Jul-22 08 AM	CONS	Distribution - S/S Electri
A1070	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH OUT	01-Jul-22 08 AM	01-Jul-22 04 PM	CONS	Distribution Switching C
A1080	RESOURCE ONLY ACTIVITY - CONSTRUCTION - SWITCH IN	05-Jul-22 08 AM	05-Jul-22 04 PM	CONS	Distribution Switching C
ConRep-S	RESOURCE ONLY ACTIVITY - CONSTRUCTION - CONSTRUCTION REP	01-Jul-22 08 AM	21-Jul-22 04 PM	CONS	Construction Rep Gene
TEST AND COMMISSION		24-May-22 08 AM A	29-Aug-22 04 PM		
LCE Test and Commission Ph1		24-May-22 08 AM A	29-Aug-22 04 PM		
Planning		24-May-22 08 AM A	24-May-22 04 PM A		
A20190	PM Requests Lead Commissioning Engineer Makes Go/No-Go Decision	24-May-22 08 AM A	24-May-22 04 PM A	PM	[redacted]
A20200	Develop Test and Commissioning Plan	24-May-22 08 AM A	24-May-22 04 PM A	TEST	CT/WMA Test Contract
A20220	LCE Review and Approve Test and Commissioning Plan	24-May-22 08 AM A	24-May-22 04 PM A	ST.SUBTECH.LCE	[redacted]
A20230	Assign Lead Commissioning Engineer	24-May-22 08 AM A	24-May-22 04 PM A	ST.SUBTECH.LCE	
Testing		27-Jun-22 08 AM A	29-Aug-22 04 PM		
LCE1050	Mobilize LCE Prior to Construction	27-Jun-22 08 AM A	30-Jun-22 04 PM	ST.SUBTECH.LCE	CT/WMA Test Contract
LCE1080	Mobilize Testing Vendor Prior to Construction	27-Jun-22 08 AM A	30-Jun-22 04 PM	TEST	CT/WMA Test Contract
LCE1070	Execute Test and Commissioning Plan	01-Jul-22 08 AM	15-Jul-22 04 PM	TEST	CT/WMA Test Contract
LCE1060	LCE Oversee Execution of Test and Commissioning Plan	18-Jul-22 08 AM	25-Jul-22 04 PM	ST.SUBTECH.LCE	LEAD COMMISSIONIN
LCE1090	Testing of New 21P-1X Wiring and Relays	03-Aug-22 08 AM	24-Aug-22 04 PM		
LCE1100	Switch Out [redacted] 1975 Line and Terminals	25-Aug-22 08 AM	25-Aug-22 08 AM		
LCE1110	Cut in wiring and functional testing for new 21P-1X	25-Aug-22 08 AM	26-Aug-22 04 PM		
LCE1120	Switch In [redacted] 1975 Line and Terminals to Energize and Soak new 21P-1X	29-Aug-22 08 AM	29-Aug-22 04 PM		
LCE Test and Commission Ph2		24-May-22 08 AM A	24-May-22 04 PM A		
Planning		24-May-22 08 AM A	24-May-22 04 PM A		
A9230	N/R 6-18-2021 per DL Develop Test and Commissioning Plan	24-May-22 08 AM A	24-May-22 08 AM A	TEST	CT/WMA Test Contract

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Activity ID	Activity Name	Start	Finish	DEPT - DEPARTMENT	Resources
A9240	N/R 6-18-2021 per DL Evaluate Drawings and Plan for Construction Outages	24-May-22 08 AM A	24-May-22 08 AM A	TEST	CT/WMA.Construction
A9250	N/R 6-18-2021 per DL LCE Review and Approve Test and Commissioning Plan	24-May-22 08 AM A	24-May-22 08 AM A	ST.SUBTECH.LCE	[redacted]
A9220	PM Requests Lead Commissioning Engineer Makes Go/No-Go Decision	24-May-22 08 AM A	24-May-22 04 PM A	PM	[redacted]
A9410	N/R 6-18-2021 per DL Assign Lead Commissioning Engineer	24-May-22 08 AM A	24-May-22 04 PM A	ST.SUBTECH.LCE	[redacted]
Testing		24-May-22 08 AM A	24-May-22 04 PM A		
LCE1000	N/R 6-18-2021 per DL Mobilize LCE Prior to Construction	24-May-22 08 AM A	24-May-22 08 AM A	ST.SUBTECH.LCE	CT/WMA Test Contract
LCE1020	N/R 6-18-2021 per DL Execute Test and Commissioning Plan	24-May-22 08 AM A	24-May-22 08 AM A	TEST	CT/WMA Test Contract
LCE1030	N/R 6-18-2021 per DL Mobilize Testing Vendor Prior to Construction	24-May-22 08 AM A	24-May-22 08 AM A	TEST	CT/WMA Test Contract
LCE1040	N/R 6-18-2021 per DL LCE Ensure Test Group Prepare Electrical Field Mark Ups	24-May-22 08 AM A	24-May-22 08 AM A	ST.SUBTECH.LCE	LEAD COMMISSIONIN
LCE1010	N/R 6-18-2021 per DL LCE Oversee Execution of Test and Commissioning Plan	24-May-22 08 AM A	24-May-22 04 PM A	ST.SUBTECH.LCE	LEAD COMMISSIONIN
PROJECT CLOSE OUT		24-May-22 08 AM A	14-Mar-23 04 PM		
A3620	Prepare & Submit Civil Field Mark Ups (Tie after Last Civil Construction Activity)	01-Sep-22 08 AM	15-Sep-22 04 PM	ENGR.FIELD	[redacted]
DSSE-1100	Complete TD-707 Turnover Document / Forward to SOC & Mailing List	17-Oct-22 08 AM	21-Oct-22 04 PM	CONS	Construction Rep Gene
A3660	PM to Document Civil As-Built Drawings Complete	14-Dec-22 08 AM	14-Dec-22 04 PM	PM	[redacted]
A3680	PM to Document Electrical As-Built Drawings Complete (Electrical, P&C)	30-Jan-23 08 AM	30-Jan-23 04 PM	PM	[redacted]
A3670	FE Files Civil Design Drawings at Station	15-Dec-22 08 AM	30-Jan-23 04 PM	ENGR.FIELD	[redacted]
A3690	FE Files Substation Design Drawings at Station	31-Jan-23 08 AM	14-Mar-23 04 PM	ENGR.FIELD	[redacted]
A3710	FE Files P&C Design Drawings at Station	31-Jan-23 08 AM	14-Mar-23 04 PM	ENGR.FIELD	[redacted]
Civil As-Builts		16-Sep-22 08 AM	13-Dec-22 04 PM		
A3730	Eversource Engineering Verifies Civil Mark Ups and Updates As-Built Drawing Package	16-Sep-22 08 AM	06-Dec-22 04 PM	ST.SS.CIVL	[redacted]
A3740	ES Create Civil Transmittal, Approve Final As-Built Package, and EDC Files and Issue Draw	07-Dec-22 08 AM	13-Dec-22 04 PM	ST.SS.CIVL	[redacted]
Electrical As-Builts		31-Oct-22 08 AM	27-Jan-23 04 PM		
A3750	Eversource Engineering Verifies Electrical Mark Ups and Updates As-Built Drawing Package	31-Oct-22 08 AM*	20-Jan-23 04 PM	ST.SS.ELEC	[redacted]
A3760	Electrical Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to	23-Jan-23 08 AM	27-Jan-23 04 PM	ST.SS.ELEC	[redacted]
P&C As-Builts		31-Oct-22 08 AM	27-Jan-23 04 PM		
A3770	Eversource Engineering Verifies P&C Mark Ups and Updates As-Built Drawing Package	31-Oct-22 08 AM*	20-Jan-23 04 PM	ST.P&C.P&C	[redacted]
A3780	P&C Transmittal, Approve Final As-Built Package, and EDC Files and Issue Drawings to Fiel	23-Jan-23 08 AM	27-Jan-23 04 PM	ST.P&C.P&C	[redacted]
Test Closout		24-May-22 08 AM A	24-May-22 08 AM A		
LCE900	N/R LCE Review Test Data and Issue Commissioning Report	24-May-22 08 AM A	24-May-22 08 AM A	ST.SUBTECH.LCE	LEAD COMMISSIONIN
LCE800	N/R LCE Ensures Marked up Prints Ready for Pick-up	24-May-22 08 AM A	24-May-22 08 AM A	ST.SUBTECH.LCE	LEAD COMMISSIONIN
SITE RESTORATION CLOSEOUT		01-Sep-22 08 AM	26-Sep-22 04 PM		
A1110	Restore / Remediate Site	01-Sep-22 08 AM	26-Sep-22 04 PM	CONS	CT/WMA.Construction
MATERIAL, EQUIPMENT, COST, AND ASSET MANAGEMENT CLOSEOUT		01-Sep-22 08 AM	25-Oct-22 04 PM		
A1020	Cost Analyst Prepares FINAL Units of Property	01-Sep-22 08 AM	14-Oct-22 04 PM	COST	[redacted]
A1030	Asset Management Complete Asset Update(s) in CASCADE	13-Sep-22 08 AM	25-Oct-22 04 PM	AM.COMP	[redacted]
PROJECT MANAGEMENT CLOSEOUT		01-Sep-22 08 AM	14-Mar-23 04 PM		
A1040	PM Prepares Closeout Documentation, Lessons Learned Meeting, etc.	01-Sep-22 08 AM	14-Oct-22 04 PM	PM	[redacted]
A1270	Prepare TD-707 Document	01-Sep-22 08 AM	14-Oct-22 04 PM	PM	[redacted]
FINISH	Project / Work Order Complete (FINAL SCHEDULE TASK/MILESTONE)		14-Mar-23 04 PM	PM	
OVERHEAD / INDIRECTS		17-Jun-22 08 AM A	30-Jun-22 04 PM		
PROJECT MANAGEMENT		17-Jun-22 08 AM A	30-Jun-22 04 PM		
A7600	N/R Prepare CAN (Construction Authorization Notice) for electrical - 1XFMR Position	17-Jun-22 08 AM A	17-Jun-22 04 PM A	PM	
A1170	Prepare CAN (Construction Authorization Notice) for civil	17-Jun-22 08 AM A	30-Jun-22 04 PM	PM	[redacted]

TASK filter: All Activities

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Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

Project Title: [redacted] 1X Transformer Replacement	☐	Prior Constructability Review Performed?
	☐	Program Related Site Specific Review?
Project Numbers(s): CS00602	**Project Constructability Phase:**	
Date(s) of Constructability Review: 06/02/2020	☐ Conceptual Engineering Design	
Click to enter a date	☒ Preliminary Engineering Design	
	☐ Detailed Engineering Design	

Project Scope Statement: This is an Emergent Project for the removal of the failed 21P-1X transformer, removal of the existing foundation, installation of new foundation and installation of the new transformer.

Department Review/Walkdown Attendees*:

Required [X]	Attended [X]	Department	Name	Required [X]	Attended [X]	Department	Name
☐	☒	Project Management	[redacted]	☐	☐	S/S Engineering	
☐	☐	Asset Management		☐	☐	P&C Engineering	
☐	☒	Constr. Management	[redacted]	☐	☐	Civil Engineering	
☐	☐	S/S Technical / LCE		☐	☐	Telecom	
☐	☒	S/S Operations**	[redacted]	☐	☐	Environmental	
☐	☐	Field Engineering		☐	☐	Real Estate	
☐	☐	Line Engineering		☐	☐	ROW T&D Rights & Survey	
☐	☐	Vegetation Management		☐	☐	Survey Engineering	
☐	☐	Siting		☐	☐	Cost Estimating	
☐	☐	Safety		☐	☐	Project Services (Outreach)	
☐	☐	SCADA		☐	☐	Material Procurement	

*** Sign-off in the table above for the Detailed Engineering Design Constructability Review indicates that all Action Items/Concerns from prior Constructability Reviews have been mitigated/resolved as documented in this form. Not every department is required to attend walkdowns for every project but should be consulted for project impact considerations**

** Internal Eversource Substation Operations must be included in the review even if external construction resources are planned

[Project Manager] certifies that this review was performed to completeness, that all applicable departments were informed of the project and have had opportunity to provide input to this review:

[redacted] [redacted] *6/16/2022*

Name / Signature *Date*

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Substation Constructability Review

Documents available for use prior to Constructability Review					
[X]	Document	[X]	Document	[X]	Document
☒	Initial Scope -Birdseye site plan -General Arrangement	☐	Preliminary Drawings -Civil Site Drawing -Electrical Drawing -Section Drawings	☐	Prints in hand for marking up -Panel Front/Read View -Control Enclosure Layout -Floor / Wall Plans
☐	Detailed Scope Document	☐	Proposed Schedule	☐	Construction Sequence/Timeline
☐	Previous Notes / Comments / Observations	☐	Major Material / Equipment List	☐	Replace / Reuse of equipment

Action Items and Resolutions:

Item No.	Const. Review Action Item/Concern	Design Resolution/Mitigation:
1	Soil and concrete sampling need to be complete	Soil and concrete sampling completed on 6/10/22
2		
3		
4		
5		

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
A	**Engineering & Asset Management**		
1	**Scope of Work** - Is scope adequately developed and sufficiently detailed for intended deliverable? - Any complimentary projects or other adjacent obsolete equipment for inclusion? - Any overlapping projects that could impact work/outages? - Consider Physical Installation, P&C Scope, Civil Scope, Engineering studies, Design standard adherence - Any remote station impacts? - Engineering Estimates for Design and Technical Support? (EE and EOC) Total Project	☐	No concerns

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Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
2	**Materials Identified/Ordered** -Any concerns with BOM/Major Materials? Review BOM lead times and project need dates -Specialty Major Materials: Identify Specialty Equipment & Materials potentials - temporary/replacement - long lead items? -Any Materials needed to facilitate construction access?	☐	Spare transformer from [redacted] will be used as the replacement transformer. No delivery impacts on schedule.
3	**Control House** - Review Unmapped equipment interferences, Control/Battery Enclosure Layout, HVAC System (if equipment added), space for new or modified equipment, AC / DC station breaker availability and service loading, Panel Space, Expansion, one-line and/or riser type panelboard drawings, other..	☐	No Concerns
4	**Ratings & Dimensions** for Major Equipment. Any concerns upon field review? Equipment Rating One Line (and/or equipment thermal ratings tables) - Review for any errors in field	☐	No Concerns
5	**Wall, Fence, Gate, and Foundation Considerations** -Any permanent / temporary alterations or relocations required? -Pre-Project Sound Measurements Needed? Sound Walls? -Take measurements for Foundation quantities, dimensions and concrete volumes -CIP Review/Ballistic needs. Any Physical Security Requirement Consideration? -Assess condition of existing yard equipment foundations and viability for reuse (if proposed) -Review station expansion areas (if needed) for structures, old foundations, etc. -Any Steel Structural Plan Considerations? -Any impacts to construction plan?	☐	Temporary fence installed along ROW. Grading also will be completed before existing XFMR is to be removed. Will be complete by 6/17.
6	**Below Grade / Enclosure Raceway** - If possible, evaluate existing raceway and review spacing requirements. Review for any subsurface investigation needs or potential below grade obstructions. GPR/test pits needed? Geotechnical Investigation - is soil boring or resistivity investigation needed?	☐	Soil sampling is required, was completed on 6/10/22. Exploratory digging was also completed on 6/10/22.

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Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
7	**Underground Obstructions** -Drawing review concerns? -Is preconstruction or test excavation needed? -Is reuse of underground control cables / Conduits /replace Non-Shielded Cable feasible (if applicable) -Are spare conduits available? Are they useable? -Review if any areas will need to be plated for increased load bearing for equipment access (i.e., large Xfmr, etc.)	☐	Road plating will be necessary while moving XFMR in some uneven areas.
8	**Grounding Plan (Ground Grid)** - Will footprint impact layout or other equipment? Identify locations to improve grounding. Impacts to foundations and ground grid plans. Observations on wetlands or ability to perform tests	☐	No concerns
9	Nomenclature / Switching One-Line Diagram -Any obvious deviations from diagrams provided?	☐	No concerns
10	BPS Separation Requirements - Is this BPS Substation? Y/N (part of PAF) - Changes to pre-existing BPS standards?	☐	No concerns
11	IEC 61850 Substation Automation and Communication Requirements - Any Impacts/Retrofit needed?	☐	No concerns
12	Any Upgrades to ES Standards - Is retrofit needed to bring up to ES standards? Can that be done?	☐	No concerns
B	**Construction**		
1	**Any safety hazards specific to the facility? i.e., Low Bus, Deterioration, etc.**	☐	No concerns
2	**Prior known Site Specific Conditions** -Common or Obvious station Issues -Missing scope items that could impact costs?	☐	Bus and switch support locations encroach on new transformer MADs. Old structure and foundations will require deconstruction and replacement
3	**Identify/Consider Required Depts for Construction?** -Who is constructor: Internal vs External Resources -S/S Ops, GO, Test, Field Engineering, etc. -Specialty Contractors Required?	☐	Station construction, Charter Oak, Barnhart. CR for civil work.

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Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
	-Required Oversite Needed - Estimated level of CR and LCE support needed		
4	**Site Plan, Access, and Temporary Construction Facilities:** -Confirm maintenance access for proposed new or replaced equipment -Verify clear footprint for yard equipment / Property Plan -General access to site, can areas outside substation be utilized? -Substation Entry Plan (driveway and drive path modifications) - Identification of Unique Requirements, i.e. (access bridges, station service, etc.) -Site Development Plan (grading and drainage) with Cut/Fill -Existing Rock Conditions? Potential Impacts (rock quantity)? -Any police details needed for deliveries, restricted hours, and/or need for extended hour approvals -Any Sanitary Civil Requirements? (Septic tanks, etc.) -Review turning radius for delivery trucks (if critical) -Any Substation Access and site/yard access Limitations? -Office Trailer Needs: Facilities, Utilities, Restroom, Container, Dumpster Space -Weather impacts to Site (Snow Placement) -Identify Material Laydown and Security -Where will new vs removed equipment go? -Construction permit for trailers outside substation fence?	☐	Site is very congested with little storage space. Driveway will have to be cleared for existing/new XFMR to be brought in. Tree Canopy along [redacted] will have to be cleared. Unloading of moving equipment from Barnhart will have to be done on [redacted] due to lack of space. Area will be cleared for storage of exiting transformer and materials needed for new transformer outside of fence on property. Temporary road closure possible while moving in heavy equipment.
5	Unique Equipment Considerations: Gas insulated substation, Gas insulated line, Gas insulated bus, Pass Breaker, Statcom, Sync Condenser		No concerns

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Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
6	**Outage & Energization Plan and Construction Sequence:** *Review electrical working clearances for equipment during construction, Detailed look at protection zone changes, Locked sequence or random outages, Outage durations minimized.* ***Considerations:*** -Approach Distances – Outage Requirements to maintain electrical clearances throughout proposed installation -Distribution Clearances -Clearance Holder Assignments -Drawings vs Field Conditions -Outage boundaries and interconnections -Phased approach needs for additional mobilizations -Verify outage sequence supports the planned construction sequence and timeline. (Lead Commissioning Engineer "LCE", Substation Operations, and Outage Planner input) -Any design alterations or considerations to Eliminate SCLL Conditions, Reduce Recall Time, Reduce Outage durations, Special Conditions -Additional outage requirements: Railroad Catenaries, Fiber outage, SCADA outage, Relay permissions -Seasonal or weather conditions impacts	☐	No concerns
7	**Equipment Testing & Acceptance** -Grounding plans / Resources? Will we need grounds hung? -Hi-pot testing and where will the equipment be set up?	☐	No concerns
8	Need for mobile generator and where connected (if needed)	☐	No concerns
9	Need for mobile battery and where connected (if needed)	☐	No concerns
10	OT work required or Notable Permit Conditions (special hours)?	☐	No concerns
11	Coordination of boundaries/seams (Identification of point of demarcation for connection to existing equipment and/or for coordination with other municipalities)	☐	No concerns
C	**Environmental**		

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Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
1	Soil Pre-Characterization or Grab Sampling Completed/Planned	☐	Soil pre-characterization samples were taken 6/10/22, waiting for results.
2	**Desktop investigation and EAD Review** -Required Permits -Stormwater Considerations -Dewatering requirements -Wetland and buffer review	☐	
3	Risk or presence of PCB's/Asbestos/Lead/SF6	☐	
4	Transformer Spill Containment Recommended?	☐	Secondary oil containment recommended. Will be installed after transformer installation
5	Expanding Footprint / New Buildings or future Expansion Plans? (Enviro Impact)	☐	No concerns
6	Environmental oversight considerations? (Inspection type/Interval)	☐	No concerns
7	Environmental mitigations - Any matting or seasonal needs? Review D&M Plan with CR.	☐	No concerns
D	**Siting, Project Services, and ROW T&D Rights & Survey**		
1	**Any regulatory concerns or approvals needed?** - Any concerns noted that could be mitigated by scope/design alterations? - Likely to require visual screening? What considerations (feasibility or location)? -Zoning Relief and Permits required?	☐	Exempt modification will be issued to CT Siting Council 6/17/22
2	Other siting considerations?	☐	
3	**Neighbor/Abutter impacts:** - Any noise, visual impacts, or sensitive abutters - Any changes to lighting or additional lighting needed?	☐	
4	Review for roadway, gate access, trailers, equip height, noise, weekend/night work, or any potential public disturbance related to work	☐	Possible road closure for spare transformer delivery, tree trimming on High Hill Rd to accommodate delivery of spare transformer.
5	Installation within Eversource Rights - Is Rights and Restrictions Review required?	☐	
6	Expanding Footprint / New Buildings / Fence line or future Expansion Plans?	☐	No concerns
7	Proposed Equipment on same property? - Any Encroachments	☐	No concerns

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Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
F	**Protection & Controls**		
1	Panel Graphic additions and/or Modifications	☐	No concerns
2	Space on existing panels for new equipment? (front & rear of panel fronts)	☐	No concerns
3	Panel fronts conform to drawings	☐	No concerns
4	Access to bring new panels into control enclosure	☐	No concerns
5	Nameplate list and location of nameplates	☐	No concerns
6	Verifies that relays and meters that will be an interconnected project work are as shown on the drawings.	☐	No concerns
7	Temporary protection, relays, control cable needed? How long will they be required?	☐	No concerns
8	Will relay setting changes be needed? Any additional outage requirements for changes?		No concerns
G	**Telecom Engineering**		
1	Review telecom equipment in existing control enclosure	☐	No concerns
2	Review path to get telecom circuits into the station and paths within the control house. Determine whether new underground duct or overhead tray work is needed.	☐	No concerns
3	Review current or proposed Telecom equipment power connections and validate with P&C any need for system 1 and system 2 separation.	☐	No concerns
4	Review current Telecom fiber diversity and validate with P&C any fiber diversity requirements.	☐	No concerns
5	Review and list any remote station impacts/updates	☐	No concerns
6	Confirm whether correct interface equipment is available (i.e.) for fiber termination or multiplexor termination	☐	No concerns
7	Confirm whether existing communications cabinets are enough to support additional telecommunications equipment installed	☐	No concerns
8	Review space for any required additional communications cabinets which may be required to support additional telecommunications equipment installed	☐	No concerns

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Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review

	Key Review Item Description	N/A or No Concern	Review Notes, Concerns, or Additional Info Needed
9	Review third party Telecommunications at substation and confirm whether additional capacity or Ground Potential Rise protection is required	☐	No concerns

Photos

(Ex. Equipment control cabinet, Breakers, MODs, CCVTs, PTs, Transformers)



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Constructability Review Form: **M6-PM-2012 - Eversource**

Substation Constructability Review





