# Operations Project Authorization Form

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|---|---|
| **Project Title: XTRAN Pilot Project CT** | **Project Number: XTRANCT01** |
| **Date Prepared:** 02/28/2024 | **Company:** Eversource CT |
| **Organization: Substation Technical Engineering** | **Class(es) of Plant:** Telecom |
| **Project Initiator:** [redacted] | **Project Category:** Stations - Telecommunications |
| **Project Manager:** [redacted] | **Project Type:** Specific |
| **Project Sponsor:** [redacted] | **Capital Investment part of original Operating Plan:** Yes |
| **Estimated in service date: 12/31/2024** | **Emergency Related Request?** No |
| **Eng./Constr. Resources Budgeted?** Yes | **Facility Type** (check all that apply)**:** ☐ PTF ☐ non-PTF ☐ Distribution ☒Telecom General Plant |
| **Total Gross Capital Request: $446K** | **Authorization Type:** Full Funding |

## Executive Summary

Frontier, Verizon and AT&T are major providers of leased telecommunication services for Eversource in CT. Some of the circuits/services Eversource is leasing depend upon old copper networks that these providers will retire, or have already retired. Keeping these networks will drastically increase the price to Eversource. In addition to the copper retirement, some technologies, such as [redacted]" used by Eversource in some locations, are no longer offered by Verizon in CT, thus there is a need to find alternatives to replace these technologies. (Eversource has already experienced a [redacted], driving the emergent need to replace this technology.) This project proposes the use of ethernet connections.

A new ethernet over fiber-based option is being offered by Frontier and Verizon. Using the XTRAN product, a new product available from Belden, Inc., Eversource is developing this new pilot project to test this new ethernet over fiber service. [redacted]

The initial funding request (IFR) of $67K was approved on 12/6/2023 to create the project, complete site visits, develop the engineering design for the pilot project locations and initiate contact with Frontier to discuss ordering of new circuits. To date, $454.60 has been spent on engineering design.

In EMA, Eversource has undertaken the initiative to migrate away from copper services provided by Verizon to either private infrastructure or an alternate Verizon fiber solution (Projects 18258 and 22349).

## Project Costs Summary

*Note: Dollar values are in thousands*

Appendix 2
Operations Project Authorization Form

| Line item Category | Prior Authorized | Actuals to Date | 2024 to Go | 2025 | 2026 | 2027 | 2028 | 2029 | Total |
|---|---|---|---|---|---|---|---|---|---|
| 1. ROW / Easements / Land purchases | | | | | | | | | |
| 2. Environmental Approvals / Permits | | | | | | | | | |
| 3. Outreach | | | | | | | | | |
| 4. Siting Approvals / Permits | | | | | | | | | |
| 5. Engineering / Design | | $0 | $10 | | | | | | $10 |
| 6. Materials ( Eversource purchased) | | | | | | | | | |
| 7. Construction ( incl matl's by contractors) | | | $310 | | | | | | $310 |
| 8. Testing / Commissioning | | | $25 | | | | | | $25 |
| 9. PMT Project Mgmt Team | | | $8 | | | | | | $8 |
| 10. Removals | | | | | | | | | |
| 11. Other | | | | | | | | | |
| 12. Risks | | | $18 | | | | | | $18 |
| **Project Directs Total w/Risks** | | **$0** | **$370** | | | | | | **$371** |
| 13. Indirects/Overhead | | | $58 | | | | | | $58 |
| 14. AFUDC | | | | | | | | | |
| **Project Total - Baseline Budget** | | **$0** | **$428** | | | | | | **$429** |
| 15. Contingency | | | $18 | | | | | | $18 |
| #N/A | | | | | | | | | |
| **Project Total - Funding Approval Level** | | **$0** | **$446** | | | | | | **$446** |
| 16. Reimbursables/Customer Contribution | | | | | | | | | |
| #N/A | | | | | | | | | |
| **Project Total (less reimbursables)** | | **$0** | **$446** | | | | | | **$446** |
| **Total O&M** | | | | | | | | | |
| **TOTAL REQUEST** | | **$0** | **$446** | | | | | | **$446** |

**Breakout costs incl above**

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ST Labor | | $0 | $35 | | | | | | $35 |
| OT Labor | | | | | | | | | |
| Outside services - Labor | | | $8 | | | | | | $8 |
| Materials ( All materials incl. outside service purchased which is shown in constr. above) | | | $310 | | | | | | $310 |
| Removals | | | | | | | | | |
| Other | | | $35 | | | | | | $35 |
| Indirects | | | $58 | | | | | | $58 |
| AFUDC | | | | | | | | | |
| **TOTAL CAPITAL REQUEST - with out Reimbursables** | | **$0** | **$446** | | | | | | **$446** |

## Technical Justification:

Project Need, Objective and Justification

Telecommunications in CT depends upon the Frontier/AT&T/Verizon copper networks. Copper is unreliable and these copper communication paths have revealed many concerns which resulted in circuit downtime and limited Eversource's ability when responding to outages. Frontier/AT&T/Verizon are struggling to maintain their copper network, resulting in raised prices for leased circuits. Providing fiber based T1s is difficult for these vendors as there is limited availability and this is old technology. All of these vendors are expected to retire their copper network soon and migrate their services to fiber optic circuits. Given that, the decision was made to undertake an initiative in CT and remove reliance and dependency on copper circuits. This can be accomplished by installing and using another alternative technology like ethernet over the 3rd party fiber network. The new solution has been tested in the Eversource lab and revealed to be an adequate solution for a pilot project to consolidate the testing success in the Lab and apply it to the operational network.

The objective of this project is to avoid loss of communication to any of the devices/services impacted by

copper circuits and to migrate to and test the fiber based ethernet solution.

Project Scope

The project scope entails the following:

- Selection of sites in CT ([redacted])
- Site visits
- Review of services provided on circuits to those nodes
- Engineering design using XTRAN technology (both equipment and communication method)
- Coordination with Frontier and Verizon on delivery and installation of new circuits
- Equipment procurement and installation (after full funding request is completed)
- Performance monitoring and solution testing and approval
- New solution installation to replace dependency on copper circuits (after full funding is completed)

Background

This project will connect the [redacted] listed above. Historically, these sites have used [redacted] over copper and T1 over fiber circuits provided by a third party carrier Eversource utilizes leased telecommunication services from various commercial carriers. These services are used for multiple purposes across the company. Frontier and Verizon are major providers of leased telecommunication services for Eversource and currently has a new fiber based ethernet option for communication circuits.

For [redacted]

## Alternatives Considered:

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

**Do Nothing** – This alternative puts a strain on our communication network and limits reliable communication. With the retirement of the copper networks, [redacted] if no other solution is implemented.
**Fiber based[redacted] circuits** – This is old technology and Verizon are retiring these circuits.

## Regulatory Approvals:

*Are Regulatory body approvals needed for the project?*
No

If yes, provide detailed regulatory approvals

## Project Schedule

| Milestone/Phase Name | Estimated Date |
|---|---|
| 100% Engineering Completion | March 2024 |
| Equipment purchase | March 2024 |
| Construction Start | July 2024 |
| Testing/Commissioning | December 2024 |
| In Service Date | December 2024 |
| | |
| | |

## Risks and Risk Mitigation Plans

*List top risks and mitigation plans associated with this project. Include any contingency related to each risk. (Permitting/siting; environmental; outage constraints; customer/community outreach; material delivery; constructability challenges; excavation; etc.)*

The risks to the project schedule involve the availability of Frontier to provide the communications circuits, and delays associated with this process. There is also a risk that Verizon will discontinue their T1 services; it is imperative that Eversource have a solution in place before that time.

Material delivery will also be shown as a risk, as supply chain issues continue to prevalent.

## References

None

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

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

*FFR Cost estimate XTRAN Pilot CT Project.xls*