



Network Overview

USDA RUS ReConnect Program

Agenda

- Key Components of the Network Section within the ReConnect Application
- Network Overview Introduction
- Key Changes from FY19 Funding Opportunity Announcement (FOA)
- FOA 2 Requirements for Network
- Grant and Loan Products
- Proposed Funded Service Area (PFSA) and Non-Funded Service Area (NFSA)
- Post Award Requirements
- Designing your Network
- Network Design
- Network Diagram
- Build-out Timeline with Milestones
- Capital Investment Workbook (CIW) and Capital Investment Schedule (CIS)

ReConnect Program Network Overview



Network Overview Introduction

Applicants will need to submit the following:

- Network Design
- Network Diagram
- Build-out Timeline and Milestones
- Capital Investment Workbook (CIW) and Capital Investment Schedule (CIS)



Network Overview Introduction (Cont.)

- **A few things to keep in mind:**

- The ReConnect program is technology neutral
- Only technically feasible projects will be eligible for award
- The proposed solution must meet the minimum construction requirements of 25/3 Mbps to all premises
- USDA will evaluate technical feasibility on by reviewing the FOA requirements

FOA Changes from FY19 Funding Opportunity Announcement (FOA)

1. For a 100% grant application, the PFSA must demonstrate that 90% of the households do not have sufficient access to broadband defined at 10 Mbps downstream and 1 Mbps upstream, instead of 100% of households.
2. Like round one, applicants must submit a network design, diagram, and build-out timeline certified by a professional engineer who is certified in at least one of the states where project construction is taking place. Unlike last year, this is now a requirement for eligibility explicitly stated in the FOA.
3. Newly added prohibition on funding requests for areas previously funded under the ReConnect Program.

FOA 2 Requirements for Network

- Network design certified by a professional engineer (PE). Must be developed to the level of maturity so that a cost estimate can also be developed.
- Network diagram certified by a PE.
- Project costs and a build-out timeline, certified by a PE. The referenced PE must be certified in at least one of the states where there is project construction.
- The PE certification must state that the proposed network can deliver broadband service at the required level of service to all premises in the proposed funded service area.



FOA 2 Requirements for Network (cont.)

Applicants must complete an executive summary that includes:

- Detailed description of existing operations
- Discussion about key management
- Description of the company's workforce
- Description of interaction between any parent, subsidiary, or affiliate operation
- Detailed description of the proposed project
- Detailed description of proposed technology that will be used to deliver the broadband services
- Detailed description of the applicant's existing network
- Detailed description of the applicant's proposed network



LOAN



COMBO



GRANT

Buildout Speed

25/3 Mbps minimum

25/3 Mbps minimum,
incentive for higher speeds

25/3 Mbps minimum,
incentive for higher speeds

Terms

Max award: \$50 million
2% Interest Rate

Max award: \$50 million
50/50 Loan/Grant
UST Rate

Max award: \$25 million
25% match

Application Review

Open (non-competitive)

Competitive Scoring

Competitive Scoring

Round 2 Federal Funds

\$200 million

\$100 million grant +
\$100 million loan

\$200 million

Key Network Considerations – Service Area

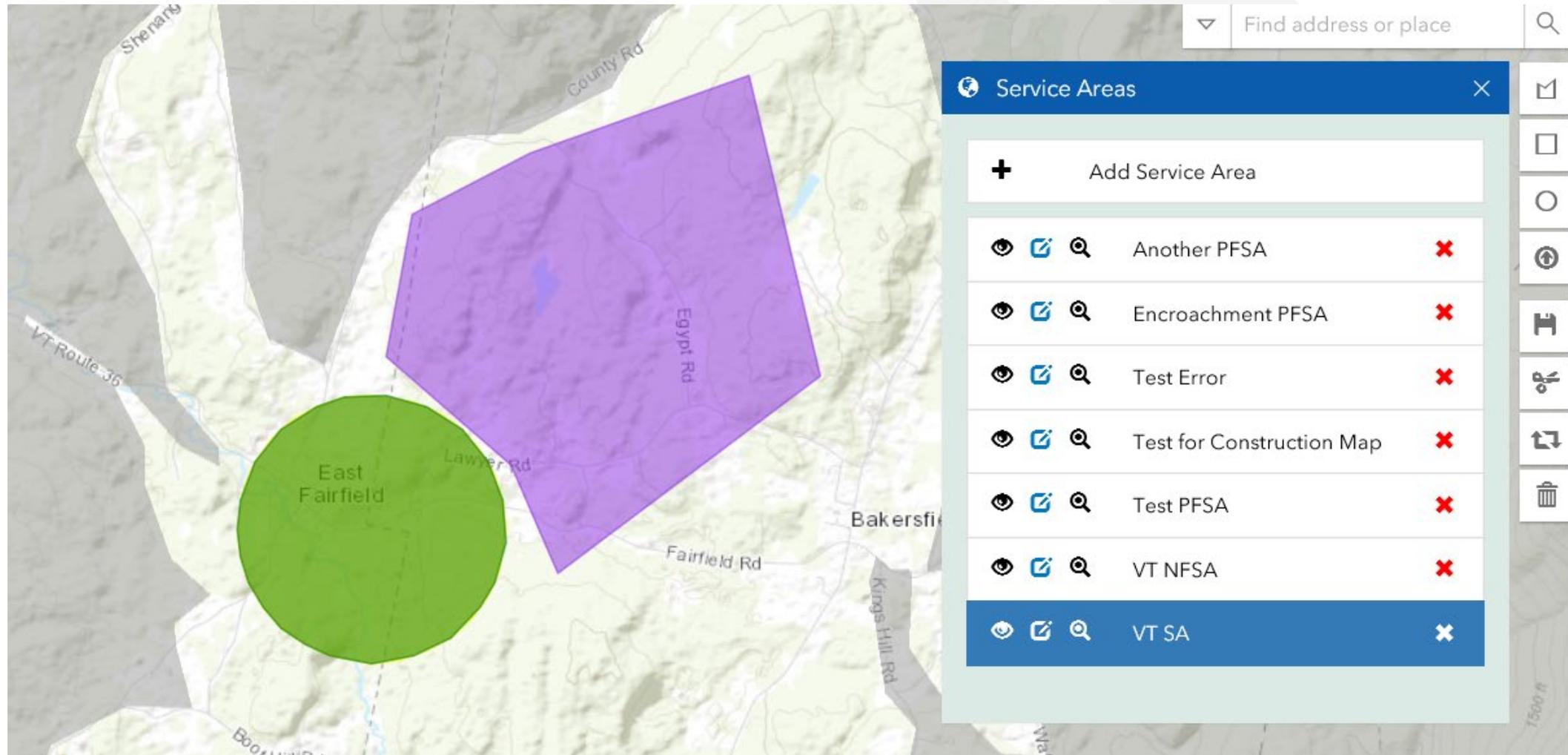
Proposed Funded Service Area (PFSA)

- Per the FOA, a PFSA is defined as the area where the applicant is requesting funds to provide broadband service.
- *Considerations:*
 - Multiple service areas will be treated as separate stand-alone service areas for the purpose of determining how much of the proposed funded service area does not have sufficient access to broadband.
 - Each service area must meet the minimum requirements for the appropriate funding category to be an eligible area.

Non-Funded Service Area (NFSA)

- Per the FOA, NFSA is defined as any area in which the applicant offers service or intends to offer service during the forecast period but is not a part of its PFSA.

Key Network Considerations – PFSA and NFSA



Post Award Requirements

Pursuant to the FY2020 FOA, applicants are required to adopt and adhere to the following post award requirements and guidelines:

- Awardees are required to submit annually updated service maps through the RUS mapping tool showing the areas where construction has been completed and premises are receiving service until the entire PFSA can receive the broadband service.
- At the end of the project, awardees must submit a service area map indicating that all construction has been completed as proposed in the application.

Post Award Requirements (Cont.)

- Submit semi-annual reports for three (3) years after the completion of construction on the following information:
 - Number and location of residences and businesses that will receive service at or greater than the requirement for the appropriate funding category
 - Types of facilities constructed and installed
 - Speed of the data services being delivered
 - Average price of the data services being delivered in each proposed service area
 - Broadband adoption rate for each proposed service territory

Designing your Network



Network Design Introduction

Applicants must provide a network design that is technically feasible per the requirements of the FOA. The network design must:

- Present the way that an entity plans to build their proposed network to meet the ReConnect program requirements
- Be developed to a level of maturity in which a cost estimate can be performed
- Be certified by a professional engineer currently certified in at least one of the states where the project construction is taking place

Network Design Introduction (Continued)

Network Design

DESCRIPTION OF PROPOSED TECHNOLOGY THAT WILL BE USED TO DELIVER THE BROADBAND SERVICES: *

DETAILED DESCRIPTION OF THE APPLICANT'S EXISTING NETWORK:

DETAILED DESCRIPTION OF THE APPLICANT'S PROPOSED NETWORK: *

Network Design – Proposed Technology

Description of proposed technology that will be used to deliver the broadband services:

Include in your description appropriate standards-based information concerning the proposed technology.

Types of technology:

- Fiber to the Premises (FTTP)
- Hybrid Fiber Coax
- Fixed Wireless (FW) – licensed
- Fixed Wireless (FW) – unlicensed
- Other

Network Design – Existing Network

Detailed description of the applicant's existing network:

Applicants should list important considerations concerning how the existing network will be leveraged to support the proposed network requirements. The detailed description should include the following:

- Primary elements of the network layers (e.g. Access, Distribution, and Core) and how each layer is fed and how it feeds into the next layer
- Important considerations concerning how the existing network will be leveraged to support the proposed network requirements (e.g. speeds, coverages, subscriber counts, services, premises, etc.)
- Interconnection with the proposed network, as well as any other significant connections such as Internet Service Providers (ISPs)

Network Design – Proposed Network

Detailed description of the applicant's proposed network:

For the proposed network design, applicants should include consider projected subscriber counts, installation, and deployment. The following should be included in the proposed network description:

- Network layers (e.g. Access, Distribution and Core) and how each layer is fed and how it feeds into the next layer
- How the proposed network will support the requirements (e.g. speeds, coverages, subscriber counts, services, premises, etc.)
- If applicable, include a description of the interconnection with the existing network and any other significant connections such as ISPs
- Location, construction, and deployment considerations, and details on important design redundancy
- Describe any specific design considerations significantly affecting costs and timelines

Network Layers

Access Network Layer	Distribution Network Layer	Core Network Layer	Existing Network Integration
<ul style="list-style-type: none">• Service Rings/Areas• Technology• Access Equipment• Licensing	<ul style="list-style-type: none">• Technology• Transport• Distribution Equipment• Licensing	<ul style="list-style-type: none">• Technology• Core Equipment Reqs• Facility Reqs• High Availability, Redundancy• Data Storage• Interconnect• Licensing	<ul style="list-style-type: none">• Type (Internal of Affiliate)• Shared Elements• Interoperability• Licensing

Network Document Uploads

UPLOAD EXISTING NETWORK DIAGRAM



UPLOAD PROPOSED NETWORK DIAGRAM



UPLOAD NETWORK DESIGN PE CERTIFICATION



Network Document Uploads – Existing Network Diagram

Upload existing network diagram:

- If applicants have an existing network, an Existing Network Diagram is required. This diagram should be prepared according to the guidance for the Proposed Network Diagram. Existing network utilization rates should be indicated.

Network Document Uploads – Proposed Network Diagram

Upload proposed network diagram. A comprehensive network diagram should:

- Show how the traffic flows through the network and include all physical locations where the major network elements are or will be located
- Display the route miles between each network element, the bandwidth capacity between the network elements, including fiber or pair counts, and the types of facilities (fiber, copper, microwave, etc.) that are used for connection between network elements
 - Include leased facilities and the providers from which the facilities are being leased, and connections to those facilities
- Provide information about basic equipment and the nodes of the proposed network design (e.g. routers, switches, ONTs, gateways, etc.)
- Indicate significant clusters of premises (schools, hospitals, office buildings, major farms, etc.)

Network Document Uploads – PE Certification

Upload network design PE Certification:

- The certification from the Professional Engineer (PE) must clearly state that the proposed network can deliver the broadband service to all premises in the PFSA at the proposed speeds. This document must also certify the proposed build-out timeline, milestones, construction schedule, and cost estimate.
 - A template for this certification can be found at: <https://www.usda.gov/reconnect/forms-and-resources>
- The professional engineer must be currently certified in at least one of the states where project construction is taking place.

Build-out Timeline and Milestones

A build-out timeline is considered a construction schedule for the project. Milestones represent points through the project lifecycle that identify key stages or development changes. The build-out of the project must be completed within five years from the **date funds are made available**.

- Applicants' build-out timeline and milestones must include the following:
 - Build-out milestones
 - Build-out support for reasonableness/data points for each build-out milestone
 - Supporting documentation

Build-out Timeline and Milestones (Cont.)

USDA will review an applicant's Build-out Timeline for feasibility and reasonableness given the technology and resources estimated:

- **Reasonableness** refers to satisfying interdependences which support the desired requirements (e.g. speeds, coverages, subscriber counts, services, premises, etc.) including basic reasonably expected capabilities and limitations based on considerations such as technology used, equipment, network element distances, type of backhaul, coverages and coverage topography, various construction and deployment expectations and issues, projected costs and timelines, and teams.
- Applicants should consider assumptions regarding personnel, licensing, and permitting timelines within a project lifecycle approach which includes four phases (Planning, Design, Deployment, and Operations).

Build-out Timeline and Milestones – Application Walk Through

The Build-out Timeline and Milestones page displays a table listing the timeframe of the project. The timeframe will be broken down quarterly or annually depending on the type of technology used in the project.

- Quarterly:
 - Fixed Wireless – Licensed,
 - Fixed Wireless – Unlicensed
 - Combination of value types
- Annual:
 - Fiber-to the-Premises,
 - Hybrid-Fiber-Coax
 - Other (Specify)

Build-out Timeline and Milestones

Complete the Build-out Timelines and Milestones

Timeframe:	Buildout Milestone:	Buildout Support For Re...
2019		▼
2020		▼
2021		▼
2022		▼
2023		▼
2024		▼

Cancel Save and Finish

Steps

- BUILD-OUT TIMELINE AND MILESTONES
- FINISH

Build-out Timeline and Milestones – Application Walk Through (Cont.)

- Add information to each year. If the technology type changes in Project Information, the Build-out Timeline and Milestones table is deleted.
- A pop-up window for the corresponding Timeframe appears. Enter the following information:
 - Build-out Milestone – list all relevant Build-out Milestone for the chosen timeframe
 - Build-out Support with reasonableness and data points



Timeframe:	Buildout Milestone:	Buildout Support For Reasonableness ...
2020		▼
2021		▼
2022		▼
2023		▼
2024		▼
2025		▼



TIMEFRAME:
2020

Buildout Milestone:

Buildout Support for Reasonableness / Data Points

Cancel Save

Capital Investment Workbook / Capital Investment Schedule



Capital Investment Workbook (CIW) Introduction

The Capital Investment Workbook (CIW) is a detailed list of **costs of the project**. This includes the costs, quantities, and descriptions of the equipment, materials, and facilities.

- CIW includes all costs and quantities within:
 - PFSAs
 - NFSAs (if applicable)
 - Unadvanced Prior Loan Funds (if applicable) – any funds from that a current RUS borrower intends to spend on this project.
- Types of costs include:
 - Service Area Costs
 - Common Network Costs
 - Other Costs



CIW – Service Area Costs

Service Area Costs – account for all physical project assets required to deliver broadband to the service area and their costs

- For each asset, applicants select the asset category and the specific asset type
- Applicants will provide a description, the quantity to be used, the unit of measurement, and the cost per unit
- Cost totals will be automatically calculated and populated

CIW – Table of Asset Categories for Service Area and Common Network Facilities Costs

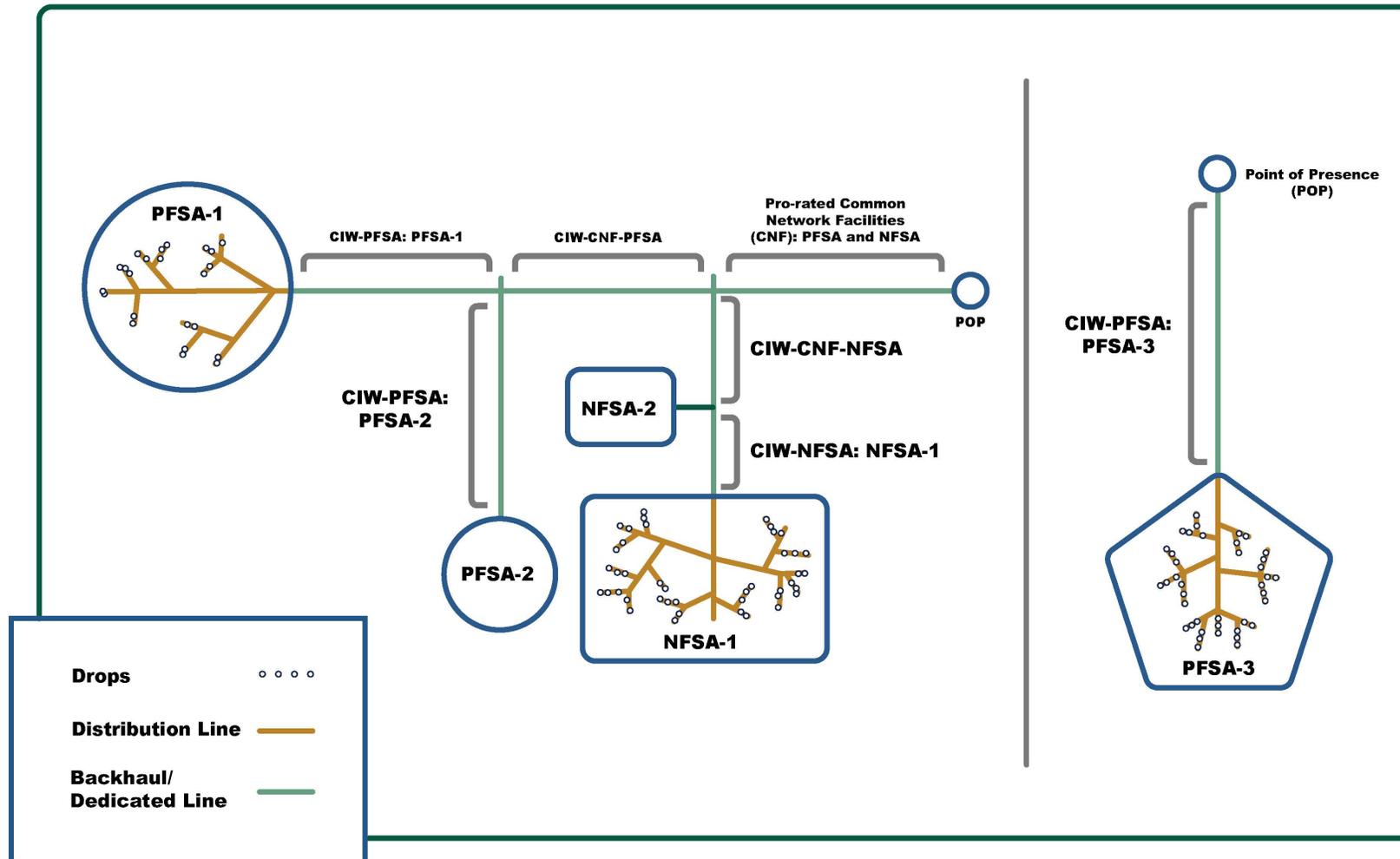
Asset Category	Specific Asset Type	
Network & Access Equipment	<ul style="list-style-type: none"> • Switching Equipment • Routing Equipment • Transport Equipment • Access Equipment (including ONTs) 	<ul style="list-style-type: none"> • Video Equipment • Power Equipment • Satellite Equipment • Other (specify)
Outside Plant	<ul style="list-style-type: none"> • Copper Cable – Aerial, Buried, and Underground • Coaxial Cable – Aerial, Buried, Underground • Fiber Cable – Aerial, Buried Underground • Fiber – Submarine Cable • Conduit Systems 	<ul style="list-style-type: none"> • Ducts (Vacant) • Drops • Cabinets/Underground Vaults • Poles • Make-ready • Other (specify)
Buildings	<ul style="list-style-type: none"> • New Construction • Pre-Fab Huts 	<ul style="list-style-type: none"> • Improvements • Other (specify)
Towers	<ul style="list-style-type: none"> • Improvements • Guyed Towers • Lattice Towers 	<ul style="list-style-type: none"> • Monopole/Self-Supporting Tower • Wood Poles • Others (specify)
Customer Premises Equipment	<ul style="list-style-type: none"> • Video Set Top Boxes • Modems and Routers • Inside Wiring 	<ul style="list-style-type: none"> • Multi-Terminal Adapter (VoIP) • Smart Meters • Other (specify)
Non-Depreciable Assets	<ul style="list-style-type: none"> • Land • Right-of-way Procurement 	<ul style="list-style-type: none"> • Others (specify)

CIW –Common Network Facilities Costs

Common Network Facilities Costs – a list of all physical project assets that will be used in the construction of **common** network facilities

- Common Network Facilities Costs are shared between two or more service areas
- Common Network Facilities Costs must be completed for PFSA and NFSAs
- For Common Network Facilities Costs, applicants should only include the portion of the costs allocable to the service area
 - E.g. If 50% of a common network facility is allocable to the PFSA, 50% of the cost should be included in the PFSA CIW – Common Network Facility, and 50% of the cost should be included in the NFSAs CIW – Common Network Facility.

CIW Diagram



CIW – Other Costs

Other Costs – includes all other costs not previously identified required to construct the necessary facilities to deliver broadband service to the service area.

- Provide a description, the quantity to be used, the unit of measurement, and the cost per unit.
- Cost totals will be automatically calculated and populated.

CIW – Other Costs – Examples

Asset Category	Specific Asset Type	
Support Assets	<ul style="list-style-type: none">• Construction Vehicles• Construction Equipment• Special Purpose Vehicles• Office Equipment• Office Furniture	<ul style="list-style-type: none">• Billing System• Test Equipment• Portable Generators• Tools• Other (Specify)
Other Expenditures	<ul style="list-style-type: none">• Pre-application Expenses• Acquisition• Other (specify)	
Professional Services	<ul style="list-style-type: none">• Engineering Services• Architectural Services• Environmental Services	<ul style="list-style-type: none">• Project Management Services• Other (specify the type of service)

CIW – Summary

The CIW Summary

- This displays the Project Cost information which was entered within the other CIW pages
- The PFSA CIW Summary page performs additional validations to ensure that pre-application expenses are limited to 5% of the requested award amount, and that not more than 40% of the loan amount are allocated to acquisition costs

Capital Investment Schedule (CIS)

Capital Investment Schedule (PFSA)

Save Refresh

			Bridge Year	Forecast Years							
<input type="checkbox"/>	Project Asset Category	Project Asset Type	CIW Summary Amounts	2020	2021	2022	2023	2024	2025	Total	Amounts Fully Distributed?
Project Asset Category: Outside Plant											
<input type="checkbox"/>	Outside Plant	Copper Cable - Aerial	22,500		1,800	1,800	0	0	0	3,600.00	No
<input type="checkbox"/>	Outside Plant	Professional Services	0		0	0	0	0	0	0.00	
Project Asset Category: Buildings											
<input type="checkbox"/>	Buildings	Pre-Fab Huts	3,500		0	0	0	0	0	0.00	No
<input type="checkbox"/>	Buildings	Professional Services	0		0	0	0	0	0	0.00	

Available Resources for Application Help

- **Technical Assistance**

- Workshops
- Webinars
- Subscribe to receive updates about upcoming events on the ReConnect website

- **Resources**

- ReConnect website <https://reconnect.usda.gov>
- Fact Sheets & FAQs

- **Help Desk**

- **Rural Development eConnectivity Toolkit**

- Rural Prosperity Taskforce
- Launched February 6, 2019
- <https://usda.gov/broadband>





Rural Development

U.S. DEPARTMENT OF AGRICULTURE