



ReConnect Application Overview: Network Deep Dive



Rural Development

USDA RUS ReConnect Program



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General Field
Representative

Agenda

- Definitions
- Application Interdependencies
- Network Design
- Buildout Timeline and Milestones
- Capital Investment Workbook
- Capital Investment Schedule
- Network Documents
- Wrap-Up
- ReConnect Resources
- Q&A

Definitions



Key Definitions

- **Proposed Funded Service Area (PFSA):** means the area (whether all or part of an existing or new service area) where the applicant is requesting funds to provide broadband service
- **Non-Funded Service Area (NFSA):** means any area in which the applicant offers broadband service or intends to offer broadband service during the forecast period but is not a part of its proposed funded service area
- **Capital Investment Workbook (CIW):** the portion of a ReConnect application where the applicant provides all of the cost information for the project
- **Capital Investment Schedule (CIS):** the portion of a ReConnect application where the applicant apportions all project costs and requested funding over the buildout period

Application Interdependencies

Network Deep Dive



Interdependencies – Across Application

Project Tab (Informs Network Tab)

- Technology Type (Wireline vs Wireless)
- Capital Investments outside of application (NFSA)

BUILDOUT TIMELINE & MILESTONES
CAPITAL INVESTMENT WORKBOOK



Service Area(s) Tab (Informs Network Tab)

- PFSA(s) & NFSA(s)

CAPITAL INVESTMENT WORKBOOK



Financials Tab (Pulls from Network Tab)

PRO-FORMA
ECONOMIC LIFE CALCULATION



Interdependencies – Financial

- Financial Tab relies on data from:
 - Network: CIW Summary
 - Network: Annual Capital Investment Page
- Composite Economic Life (CEL) generated in the Financial Tab relies on Network Tab data
 - CEL helps determine service obligation and loan repayment periods
- Descriptions and costs in the Network section must inform the financial statements' pro-forma out-years

PLAN ACCORDINGLY

Network Design

Network Deep Dive



Network Design – Technology Description

- Describe the proposed technology used to deliver broadband service which demonstrates that all premises in the PFSA can be offered 100/100 broadband service simultaneously
 - Required narrative
- Thorough discussion of the chosen technology(ies), why chosen
 - Detailed and complete so RUS understands how the network investments will provide the required buildout network capacity
 - Satellite and mobile/cellular network components are not eligible expenses
 - If the network is based on a cellular network, RUS doesn't consider it Fixed Wireless
- Include standards-based information concerning the proposed technology
 - References detailing the technology (Standards bodies, White papers, Internet sites)
 - If the technology isn't typically found in existing deployments, provide several references explaining the technology
 - Consider including relevant diagrams, licenses (fixed wireless), agreements, preliminary studies that support your claim

Network Design – Proposed Network Description

- Thorough description of proposed network
- Include the primary elements of the network layers (for example, Access, Distribution, and Core)
- Considerations concerning how the proposed network will support the proposed network requirements, for example
 - Speeds
 - Coverages
 - Subscriber counts
 - Services
 - Premises
- Description of the interconnection with the existing network (if any) and any other significant connections such as ISPs
- Discuss your use of outside contractors and vendors to implement or manage the project
- Other relevant information supporting Technical Feasibility and Build-out requirements

Network Design – Proposed Technology Description

Overview and Discussion of technology type being deployed

Must be consistent throughout application

Gives reviewers understanding how proposal will meet requirements

- Technical Feasibility
- Build-out speed/Access to all Premises

Will be supported by Network Descriptions and Diagrams

Don't minimize technology discussion. If an application cannot be determined to be Technically Feasible, application may be rejected.

Be descriptive and precise making sure information stays consistent

Network Design – Proposed Network Diagram

- Comprehensive diagram showing proposed traffic, Network Operation Centers, physical locations for major network components and all aspects of network
 - You won't be able to submit the application without uploading this diagram
 - High level, block diagrams are not sufficient. Be specific and detailed
- Fully show interconnections (type, distance, capacity, location)
- Show network electronics locations and typical distance to customer
 - Ok to provide maximums or minimums or ranges for distances
- Ensure the design architecture is consistent with proposed network description and CIW
 - Aspects of the Network portion of the application should harmonize and support each other
- Common Facilities (existing, proposed, capacity, location, type, etc.)

Network Design – Existing Network Description

- Optional field but if you have an existing network and fail to describe it, the technical review of your application will be adversely affected
- Detailed description of applicant's existing network (narrative)
 - Same level of detail as the proposed network description (covered next)
- Include the primary elements of the network layers (Access, Distribution, and Core)
- Indicate how existing network will be leveraged to support the proposed network
- Include existing load information
- Interconnection(s) with the proposed network, as well as any other significant connections such as Internet Service Providers (ISPs).

Network Design – Existing Network Description – Tips

- Thoroughly discuss the interconnection between the existing and proposed networks
- Fully demonstrate how the existing network would allow you to meet the buildout requirements for the proposed network:
 - Access to 100/100 service simultaneously to all premises in the PFSA
- If the existing network is under construction, explain how and when it will be ready to connect proposed network
- Fixed Wireless proposed projects: If planning to use existing network access points to deploy service to PFSA(s)
 - Put lease and land documents in the agreement section
 - Upload licenses if claiming the use of licensed spectrum
 - Provide extensive detail about the key, existing network access points and type of current equipment

Technical Feasibility (7 CFR 1740.61(c))

- MAJOR evaluation criterion
- RUS determines technical feasibility by evaluating the network design and other relevant information in the application
- If your network design, technology type and cost information don't support each other, and support your financials, your application may be rejected



Network Design (7 CFR 1740.64) (cont.)

- Network Diagram identifying cable routes, wireless access points, other equipment
- Buildout Timeline and Milestones
- CIS
- Professional Engineer Certification
- List of all required licenses and regulatory approvals needed for the proposed project
- How much the applicant will rely on contractors or vendors to deploy the network facilities
- Buy American requirements apply



Network Tab – Overview

Network Tab has six (6) sections to complete

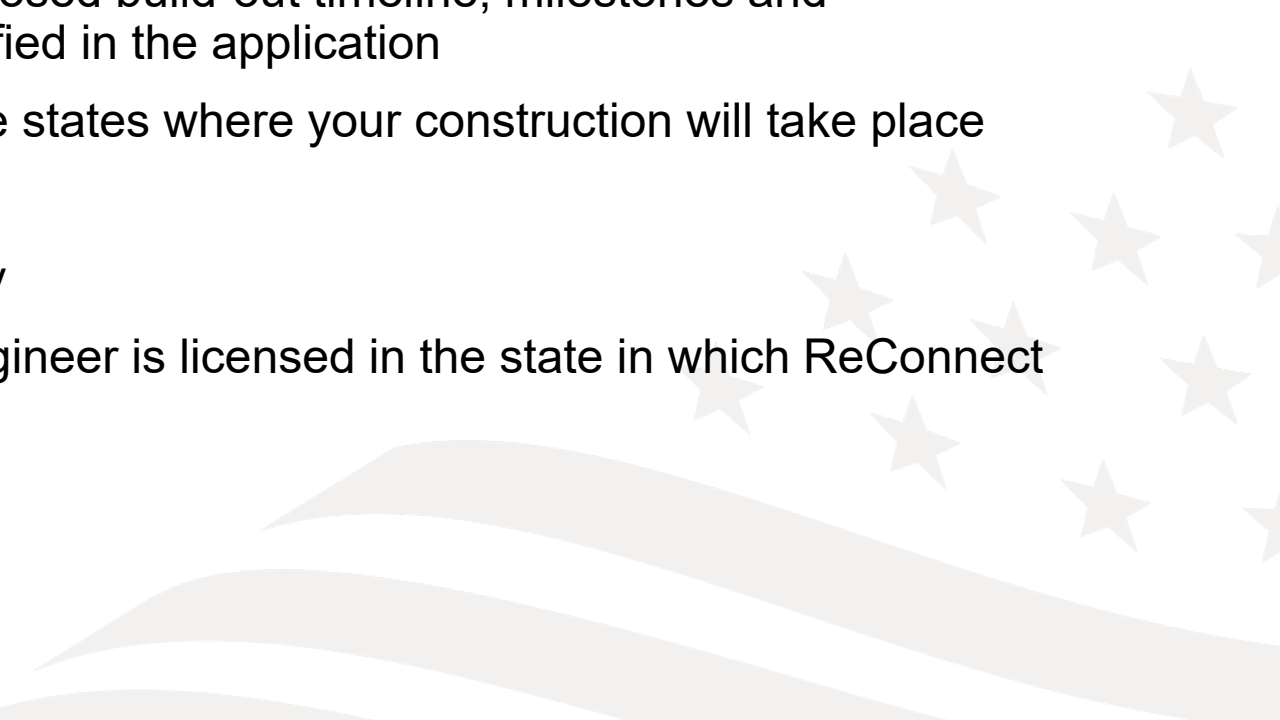
- Network Design
- Build-out Timeline and Milestones
- Capital Investment Workbook
- Capital Investment Schedule
- Capital Contributions
- Network Documents



Other Considerations (FOA) – Buildout Speed

- Build a network capable of providing 100/100 simultaneous service available to all premises in each PFSA
 - Just one of several project eligibility criteria
- Note: Area eligibility relies on access to high-speed internet by households, project eligibility relies on the buildout speed provided to premises (houses, farms, businesses, etc.)

Network Design – Professional Engineer Certification

- Use the sample on the ReConnect website under forms and resources
 - What your PE certifies:
 - The proposed network will be designed and constructed to deliver 100/100 broadband services to all the premises in the proposed funded service area
 - As designed, the network can meet the proposed build-out timeline, milestones and construction schedule within the costs specified in the application
 - The engineer must be LICENSED in one of the states where your construction will take place
 - Not a vendor-certified technician
 - Must be qualified to review network technology
 - Applicant may use in-house engineer if the engineer is licensed in the state in which ReConnect project construction will take place
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Buildout Timeline and Milestones

Network Deep Dive



Buildout Timeline and Milestones – Timeline

- The Technology Type you select on **Project Information** determines the timeframe of milestones:
 - Quarterly
 - Fixed Wireless
 - Combination of value types
 - Annual
 - Fiber-to-the-Premises
 - Hybrid-Fiber Coax
 - Other (Specify)
- Buildout Milestone: concise description of activity/progress achieved



Buildout Timeline and Milestones – Timeline (cont.)

- Project buildout must be completed within five years from the date funds are made available
- Bridge Year plus years one through five of buildout period
 - Bridge Year is the year before construction starts
 - Different from the CIS which requires values for only the construction years
- If your CIS shows \$1 million of incurred cost in year 1, the Timeline must show work in year 1
- Every milestone is required
 - If your construction is complete before the end of Year 5, provide something in the remaining milestones even if it's "loan repayment starts" or "regular maintenance" or "continue to add subscribers"

Buildout Timeline and Milestones – Support for Reasonableness

- Support For Reasonableness/Data Points: required justification for the reasonableness of the milestone
- Reasonableness: refers to satisfying interdependencies that support build-out timeframe (e.g., planned construction method, workforce size, premises passed, contracting or applicant workforce, logical task sequence, etc.)
 - Expected capabilities and limitations of technology and equipment, network element distances, type of backhaul, coverages and coverage topography, construction and deployment expectations and issues, projected costs and timelines, and teams
- **Tip:** Consider assumptions regarding personnel, contractors, licensing, and permitting timelines within a project lifecycle approach which includes four phases (Planning, Design, Deployment, and Operations)
- Remember: Ensure your cost, subscriber and financial projections support your milestones and vice versa.

Capital Investment Workbook (CIW)

Network Deep Dive



Capital Investment Workbook (CIW) – Overview

- Establishes the budget for the proposed project covered by the application.
- Four (4) Sections per Proposed Funded Service Area (PFSA)
- Four (4) Sections for Non-Funded Service Area (NFSA) – IF REQUIRED
- Area CIW Inputs
 - Service Area Costs
 - Common Network Facilities (If Required)
 - Other Costs (If Required)
 - Summary

Build-out Timeline and Milestones	Competit Offerings
Capital Investment Workbook	
Capital Investment Schedule	
Network	

- PROPOSED FUNDED SER...
- CIW - Service Area Costs - ...
- CIW - Common Network Fa...
- CIW - Other Costs - PFSA
- CIW - Summary - PFSA

CIW – Service Area Costs – Budget Consideration

Include Asset Cost within appropriate category

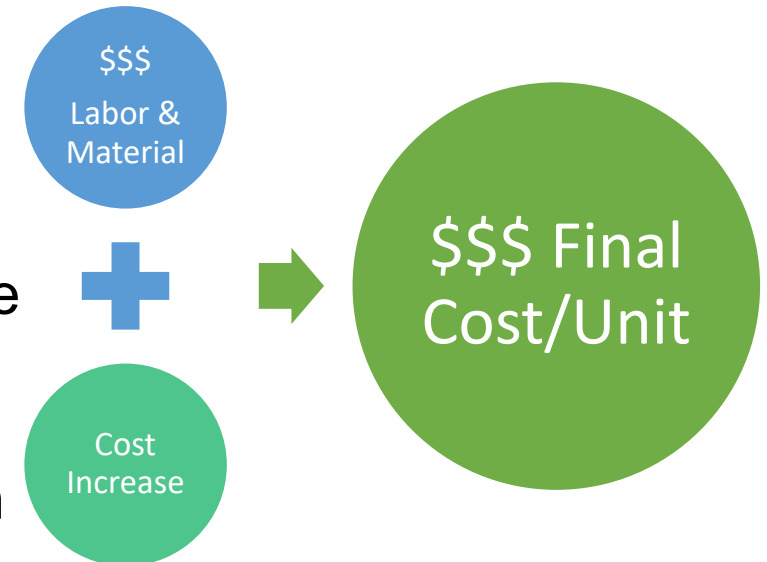
Asset Cost should include: Labor Cost of Installation + Material

Build-in Contingencies within Asset Cost – Don't create separate line item

Plan project accordingly. If applicant proposes a larger project than RUS funding requiring "Other Funds", these funds become a requirement of the project and legal agreement.

Allow Time – Asset Costs are input individually for each identified PFSA & NFSA.

Project Build-out = 5 years



CIW – Service Area Costs – General Comments

- These line items drive the Composite Economic Life (CEL) calculation in the Financials
- Provide concise, thorough descriptions of assets so that reviewers understand the assets
 - At minimum you must identify Aerial and Buried assets
 - Provide additional application uploads to support costs, if necessary
- Consider establishing separate costs for conduit and poles because of longer depreciation (increasing CEL)
- Each asset category has an “other/explain” option for uncategorized items



CIW – Service Area Costs – General Comments (cont.)

- In each service area, you'll input the item name, description, quantity and unit cost for every asset
 - Each PFSA
 - Each NFSA
- If you have the same 8 or 9 items for each PFSA, you'll enter those same items in every PFSA
- If you have 15 PFSA's, you'll enter comprehensive cost information for each one
- The same level of effort is required for NFSA



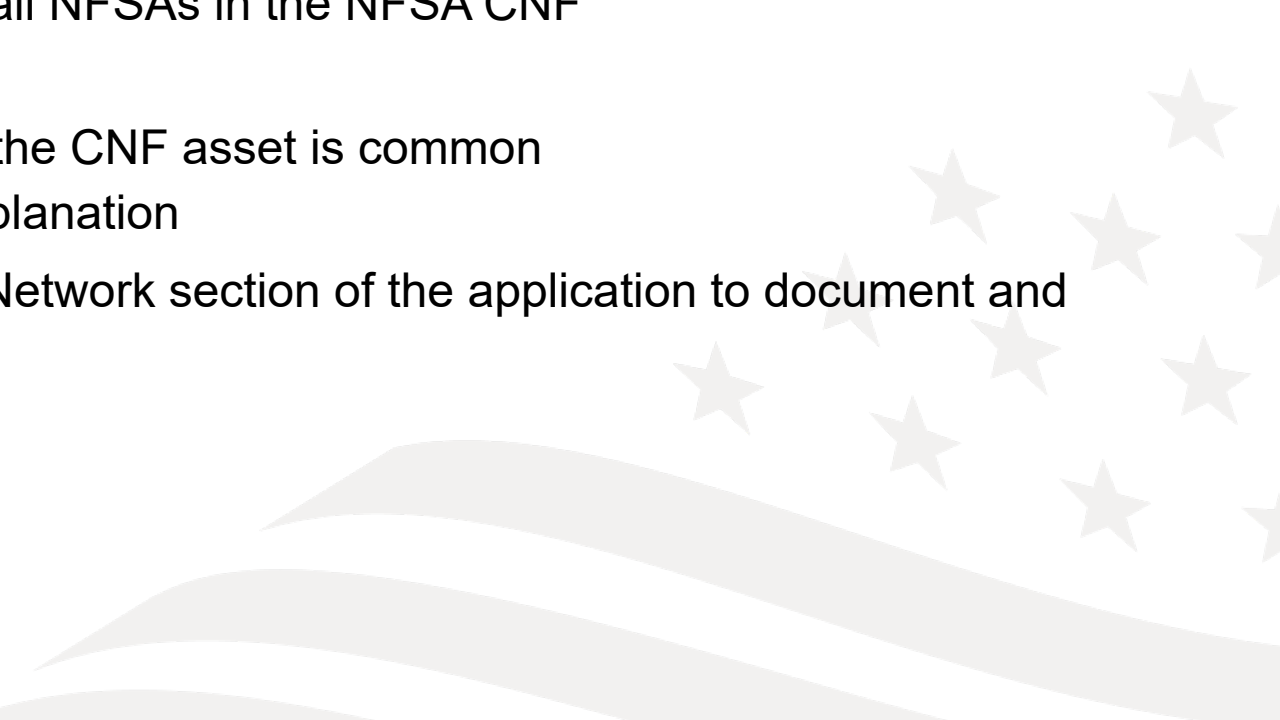
CIW – Service Area Costs – Asset Categories

- Use the correct asset category; CIW establishes post-loan budget categories
 - Use category that best describes an item's function and how it's procured
 - Ex: pre-fab building equipped with racking components and required power equipment
 - include all purchase, labor, install costs under Buildings
 - Put the racking components and power equipment under Network & Access
- Engineering costs
 - Record as Professional Services under the Other Costs section
 - Do not include engineering within the Asset Categories
- Tower costs:
 - Structure install/ upgrade purchase and installation costs: Tower asset category
 - Equipment for tower: Network & Access
- May provide information about assets at a high level rather than breaking assets down by specifics

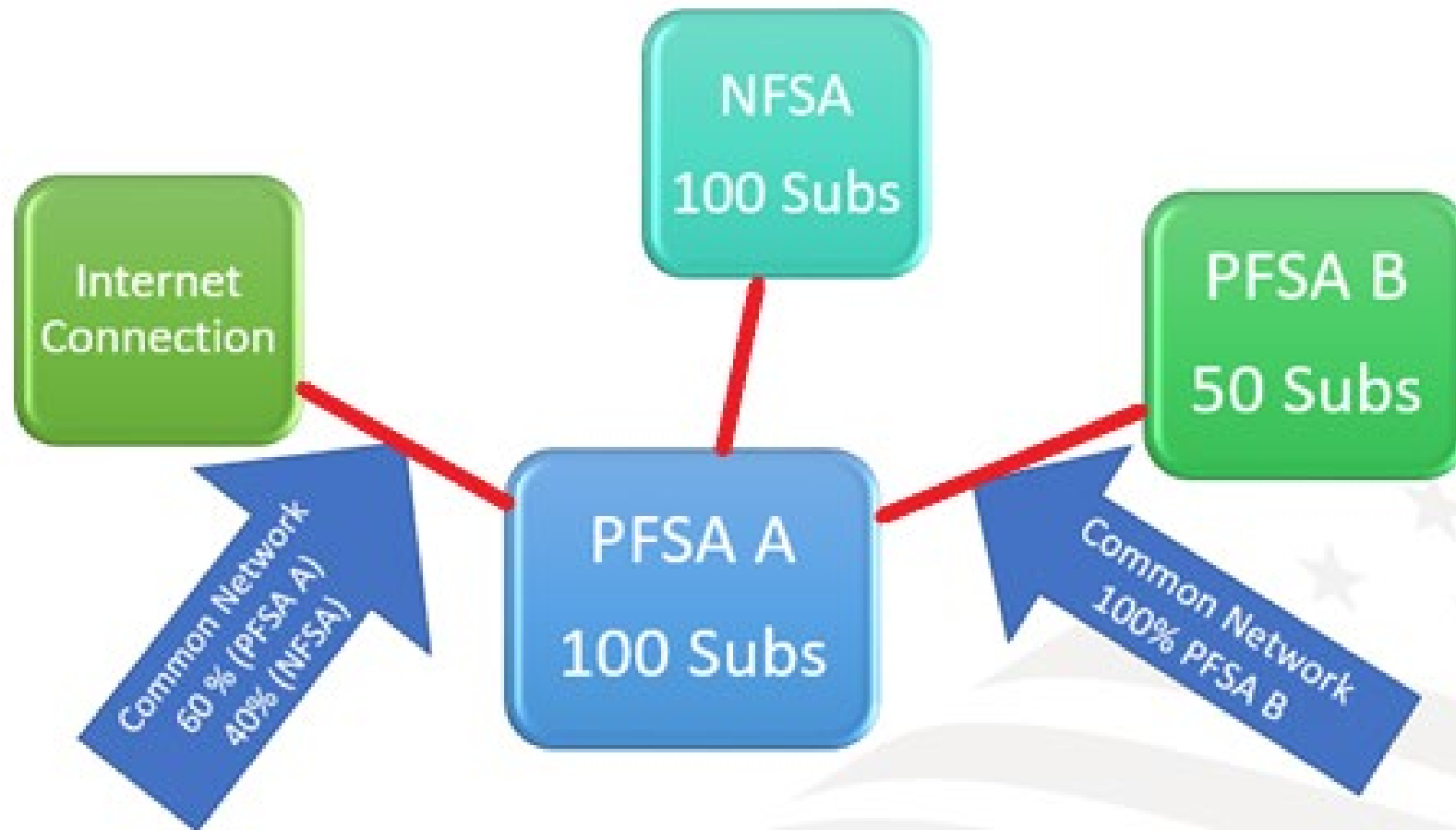
CIW – Service Area Costs – Asset Categories

ASSET CATEGORY	SPECIFIC ASSET TYPE		
Network & Access Equipment	<ul style="list-style-type: none"> Switching Equipment Routing Equipment Transport Equipment 	<ul style="list-style-type: none"> Access Equipment (including ONTs) Video Equipment Power Equipment 	<ul style="list-style-type: none"> Satellite Equipment Other (specify)
Outside Plant	<ul style="list-style-type: none"> Copper Cable – Aerial Copper Cable – Buried Copper Cable – Underground Coaxial Cable – Aerial Coaxial Cable – Buried Coaxial Cable – Underground 	<ul style="list-style-type: none"> Fiber Cable – Aerial Fiber Cable – Buried Fiber Cable – Underground Fiber – Submarine Cable Conduit Systems Ducts (Vacant) 	<ul style="list-style-type: none"> Drops Cabinets or 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 	<ul style="list-style-type: none"> Lattice Towers Monopole/Self-Supporting Tower 	<ul style="list-style-type: none"> Wood Poles Other (specify)
Customer Premises Equipment	<ul style="list-style-type: none"> Video Set Top Boxes Modems and Routers 	<ul style="list-style-type: none"> Inside Wiring Multi-Terminal Adapter (VoIP) 	<ul style="list-style-type: none"> Smart Meters Other (specify)
Non-Depreciable Assets	<ul style="list-style-type: none"> Land Right-of-way Procurement 	<ul style="list-style-type: none"> Pole Attachment Other (specify) 	

CIW – Common Network Facilities (CNF) Costs – General Comments

- Just like a Service Area cost, enter the item name, description, quantity and unit cost
 - Provide sufficient description to show the percentage of the prorated cost and to identify it
 - Prorate costs between total PFSAs and total NFSAs as appropriate
 - Enter the portion of CNF cost allocable to any/all PFSAs in the PFSA CNF
 - Enter the portion CNF cost allocable to any/all NFSAs in the NFSAs CNF
 - Method of proration
 - Number of subscribers in PFSAs served by the CNF asset is common
 - Use a defensible method and provide an explanation
 - Remember, you can attach documents to the Network section of the application to document and justify any of your assumptions and methods
- 

CIW – Common Network Facilities (CNF)



CIW – Other Costs – General Comments

- Just like a Service Area cost, enter the item name, description, quantity and unit cost
 - Provide sufficient description to show the percentage of the prorated cost and to identify it
- Prorate costs between total PFSAs and total NFSAs as appropriate
 - Enter the portion of CNF cost allocable to any/all PFSAs in the PFSA CNF
 - Enter the portion CNF cost allocable to any/all NFSAs in the NFSA CNF
- Method of proration
 - Number of subscribers in PFSAs served by the CNF asset is common
 - Use a defensible method and provide an explanation
- Remember, you can attach documents to the Network section of the application to document and justify any of your assumptions and methods

CIW – Other Costs – Asset Categories

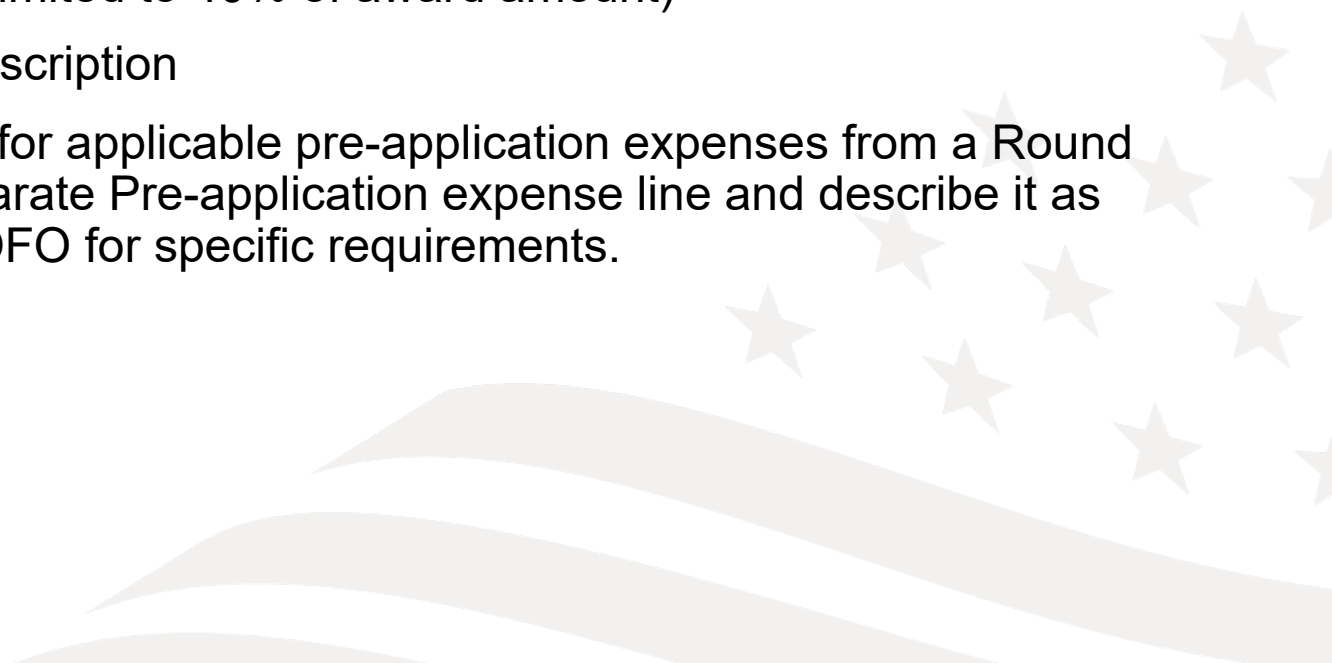
Asset Category	Specific Asset Type	
Support Assets	<ul style="list-style-type: none">• Construction Vehicles• Construction Equipment• Special Purpose Vehicles• Office Equipment• Office Furniture	<ul style="list-style-type: none">• Billing System• Test Equipment• Portable Generators• Tools• Other (specify)
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 – Other Costs – Support Assets

- NO OPERATING COSTS
- If the cost isn't primarily allocable to the ReConnect project, it's not eligible
 - Ex.: Existing billing system that will incorporate new services and customers due to the ReConnect project is NOT eligible
- Support Assets are only eligible if asset will be required for the installation or operating need of the network



CIW – Other Costs – Other Expenditures

- Pre-application expenses (may not exceed 5% of federal award)
 - List pre-application environmental reviews or costs on a separate line and note as Environmental
 - Environmental pre-application costs are limited to 3% of the federal award, and are part of the overall 5% allowance
 - Acquisition (100% Loan applications ONLY limited to 40% of award amount)
 - Other (specify) – provide a clear succinct description
 - **NOTE** – ReConnect Round 5 NOFO allows for applicable pre-application expenses from a Round 4 application. Applicant should create a separate Pre-application expense line and describe it as applicable Round 4 Pre-application. See NOFO for specific requirements.
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CIW – Other Costs – Professional Services

- Professional Services costs associated with the project assets and construction will be under this Cost Category
- Professional Services are inclusive of all PFSA(s) and all Asset Costs. Do not input Professional Services costs under the Service Area Asset cost.
- Following Professional Services are common:
 - Engineering Costs
 - Environmental Services (Archaeological Monitoring)
 - In-House Engineering (“Other” with description of In-House Engineering)
- Reminder, post award environmental services for monitoring costs are limited up to 3% of award amount.

CIW – Summary

- Captures all of project costs grouped by asset category (PFSA's and NFSAs)
- Required: PFSA Funding Information section
 - Enter loan request, grant request or both, according to the funding type selected when you created the application
 - If requesting a 50/50 loan-grant combination, you may enter a cash substitution amount for all or part of the loan request here as well
 - The system calculates the match (if required) and any other costs that you'll have to cover outside of an award
 - System will validate the math on pre-application expenses, acquisition costs, etc.
- **NOTE:** application must show how you will cover all project costs: loan request, grant request, other funds for any additional project costs. Provide documentation of sources of funds for any required match and any other costs

Capital Investment Schedule (CIS)

Network Deep Dive



Capital Investment Schedule (CIS)

- Complete the entire CIW before starting the CIS. It uses data from the CIW
- Schedule will be completed for each type of area (PFSA/NFSA)
- If NFSA was not identified within prior application sections, it will not be available.
- Professional Services is allocated within each Asset Category with a distribution check within Professional Services asset type.
- Should harmonize with the buildout timeline
 - If you propose a milestone for tower construction in year 2 in the Buildout Timeline, the CIS should reflect those costs in year 2 as well
- Should be reflected in the pro forma financials
 - Ex.: Increases in inventory costs for your equipment or supplies costs reflected in the correct year of the pro forma financial statements to correspond to the CIS

Capital Contribution Schedule (CCS)

Network Deep Dive



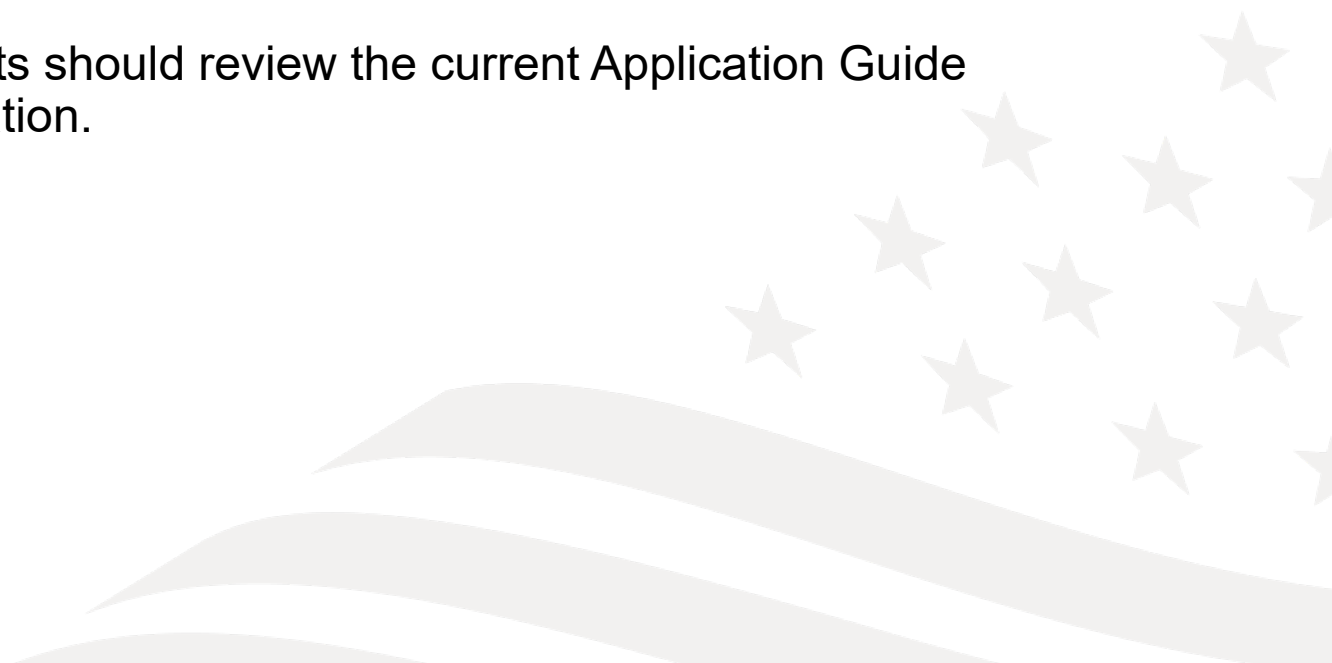
Capital Contribution Schedule (CCS)

- If the Funding Information table on the CIW Summary (PFSA) page contains matching funds, other funds, or a cash substitution amount, you will reflect the sources of those funds here and supply supporting documentation for the sources of your funds.
- If your application's funding information table doesn't contain matching funds, other funds, or cash substitution amount, Capital Contributions will not be active, and you can move on to the next portion of the application.

Network Documents



Network Documents - General

- Documents uploaded under Network Design will show here
 - Applicants should use this section for upload of any supporting documentation related to the Build-out Timeline & Milestones, Capital Investment Workbook, Capital Investment Schedule and Capital Contribution sections.
 - All documents uploaded here can be reviewed and modified. These documents will also be seen within the Documents Tab of the application.
 - File size limitations may apply, and applicants should review the current Application Guide (System User Manual) for additional information.
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ReConnect Resources



Available Resources for Application Help

- **Technical Assistance**
 - Register for upcoming workshops/webinars <https://www.usda.gov/reconnect/events>
 - Subscribe to receive updates about upcoming events on the ReConnect website
- **Resources**
 - ReConnect website <https://www.usda.gov/reconnect>
 - NOFO: <https://www.govinfo.gov/content/pkg/FR-2024-02-21/pdf/2024-03484.pdf>
 - **NOFO Extension Notice:**
<https://www.govinfo.gov/content/pkg/FR-2024-02-26/pdf/2024-03844.pdf>
 - Regulation: <https://www.govinfo.gov/content/pkg/FR-2021-02-26/pdf/2021-03443.pdf>
 - Updated Program Application Guide: [ReConnect Round 5 Program Guide \(usda.gov\)](#)
 - Application Intake System User Manual: [Rural E-Connectivity \(ReConnect\) Program \(usda.gov\)](#)
 - Updated Frequently Asked Questions: [ReConnect Program: Frequently Asked Questions \(usda.gov\)](#)
- **Contact Us**
 - When working **inside** the application, use the “Contact Us” button on your screen. **Outside** of the application system, use <https://www.usda.gov/reconnect/contact-us>
 - Contact your General Field Representative (GFR): <https://www.rd.usda.gov/contact-us/telecom-gfr/all>

Wrap-Up

Network Deep Dive







Rural Development

U.S. DEPARTMENT OF AGRICULTURE