

# Application to DHCD Submitted through CAMS

LENOWISCO Planning District Commission

VATI FY2022 LENOWISCO District-Wide Broadband Project

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**Application ID:** 86507302021112356  
**Application Status:** Pending  
**Program Name:** Virginia Telecommunications Initiative 2022  
**Organization Name:** LENOWISCO Planning District Commission  
**Organization Address:** 372 Technology Trail Lane  
Duffield, VA 24244  
**Profile Manager Name:** Duane Miller  
**Profile Manager Phone:** (276) 431-2206  
**Profile Manager Email:** dmiller@lenowisco.org

**Project Name:** VATI FY2022 LENOWISCO District-Wide Broadband Project  
**Project Contact Name:** Duane Miller  
**Project Contact Phone:** (276) 431-2206  
**Project Contact Email:** dmiller@lenowisco.org  
**Project Location:** 372 Technology Trail Lane  
Duffield, VA, VA 24244-5330  
**Project Service Area:** Lee County, Scott County, Wise County

**Total Requested Amount:** \$22,190,500.00

**Required Annual Audit Status:** Accepted

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## Budget Information:

Cost/Activity Category	DHCD Request	Other Funding	Total
Telecommunications	\$22,190,500.00	\$6,354,500.00	\$28,545,000.00
Construction	\$22,190,500.00	\$6,354,500.00	\$28,545,000.00
<b>Total:</b>	<b>\$22,190,500.00</b>	<b>\$6,354,500.00</b>	<b>\$28,545,000.00</b>

### Budget Narrative:

The request is as follows: VATI Request - \$22,190,500.00 (Pending) SCTC Match - \$2,854,500.00 (Cash on-hand) Wise County Match - \$1,800,000.00 (Secured Match) Lee County Match - \$1,400,000.00 (Funded Match) Scott County Match - \$300,000.00 (Secured Match) for a total project cost of: \$28,545,000.00 Project costs include outside plant, CPE, make-ready, engineering, OLT equipment, and railroad crossing costs. All cost estimates are based on SCTC's prior projects. All other costs are procured, with the only exception of electronics. SCTC uses Calix electronic equipment to keep its network operable with SCTC's existing network. See Attachment 9 - Funding Sources Table See Attachment 10 - Documentation of Match Funding (Letters of Commitment included) See Attachment 12 - Derivation of Costs

## Questions and Responses:

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## 1. Project Description and Need

Describe why and how the project area(s) was selected. Describe the proposed geographic area including specific boundaries of the project area (e.g. street names, local and regional boundaries, etc.). Attach a copy of the map of your project area(s). Label map: Attachment 1 – Project Area Map.

### Answer:

The project areas were chosen due to being a continuation of deploying reliable, high-speed broadband to rural distressed Lee County, Wise County & Scott County in Virginia. (LENOWISCO Planning District's footprint) This project is a continuation of the two previous 2020 & 2021 VATI grants. The project was selected due to areas being unserved and areas not having adequate reliable and affordable high-speed 25/3Mbps broadband services. All project areas are contiguous, so this project will be treated as one service area but will be discussed in this Project Description and Need Narrative on a county by county basis.

The Lee County area is a continuation of deploying reliable, high-speed broadband to rural distressed Lee County, VA which began with the 2020 and 2021 VATI projects. The Wise County areas were selected due to not having adequate or affordable broadband services to support 25/3Mbps. The Scott County area was selected due to not having adequate 25/3Mbps broadband service.

Lee County, VA - The geographic area is extremely rural, rugged and mountainous with rocky areas of steep ridges and narrow valleys. Scott County Telephone Cooperative (SCTC) has targeted 4,962 potential unserved/underserved consumer locations throughout Lee County. SCTC has identified the areas they feel are served, the VATI 1 and 2 projects, as well as the CAF II areas. All those areas have been left out of the proposed service area. SCTC is the RDOF winner in Lee County with 181 locations of the 381 awarded locations included in this project. SCTC proposes to serve 4,962 unserved/underserved locations with a reliable, robust, affordable, FTTP solution with the capabilities of delivering up to 10Gbps of service to each location. These consumers are shown on the attached Lee County Project Area Map.

Wise County, VA - The geographic area is two to three times more rugged and mountainous as in Lee County. SCTC has targeted 5,902 potential consumers who do not have adequate high-speed broadband to support 25/3Mbps. SCTC has identified the areas that are served, and the CAF II areas which have been left out of the project area. The RDOF areas, won by a satellite provider, is included in this grant application. SCTC proposes to serve 5,902 locations with a reliable, robust, affordable FTTP solution with the capabilities of delivering up to 10Gbps service to each location. These locations are shown on the attached Wise County Project Area Map.

Scott County, VA - The geographic area is rural and rugged as well. SCTC proposes to deliver a reliable, robust, affordable FTTP solution with capabilities of delivering up to 10Gbps of service to each location. There are 118 underserved locations in Scott County which are included in the proposed project. These locations are in Scott County on RT 23 between Duffield and the Lee County line at Jasper.

This application will deliver Broadband service to all of the LENOWISCO Planning District footprint except for a small high-cost area surrounding Pound, VA. LENOWISCO and SCTC will apply for some of the high-cost funds in the next round of applications for this area and any other areas that might have been missed.

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2. List existing providers in the proposed project area and the speeds offered. Please do not include satellite. Describe your outreach efforts to identify existing providers and how this information was compiled with source(s).

**Answer:**

The FCC Broadband Map was used to identify potential service providers. Xfinity and Point Broadband were identified as the primary providers in Lee and Wise Counties. SCTC provides service in Scott County with a small amount of overlap with Xfinity. Satellite providers were not included in this comparison.

Lee County is served by Xfinity down Rt 58 from the Wise County line to Jonesville, VA. Xfinity serves the towns of Pennington Gap, VA. and Jonesville, VA. These areas were left out of the proposed service area. So there is very little overlap in Lee County. The Keokee and St Charles area does have some overlap but Xfinity can not get 25/3Mbps in those areas. Point Broadband operates the old LENOWISCO Network in Lee County. SCTC purchased that network 9.75 years ago. Point had a 12 year lease, so it is under lease for another 2.25 more years. This leased network serves primarily the towns and a few rural areas so there is some overlap. Point Broadband has a capacity problem, which is currently at **full** capacity and they do not want to invest in additional capacity for electronics for a leased network with only having 2.5 years left on the lease. So, the unserved residences of Lee County, VA will remain unserved unless this project is completed. SCTC will light the old LENOWISCO network when the lease expires in 2.25 years to serve the towns, which are not part of this project, where that network is primarily concentrated today. The old LENOWISCO fiber will serve as additional capacity outside of the towns for future growth when the lease expires. This VATI grant project will stimulate economic development in this depressed rural area by attracting businesses which will create jobs, increase educational opportunities by supplying each household a reliable and affordable broadband connection for the schools and all consumers if it is needed again. This project will also increase employment opportunities for telecommuting or allow telecommuting if consumers are forced to shut down again due to the pandemic. It will increase telemedicine opportunities with a high-speed broadband connection and improve healthcare opportunities especially with this spike in the Covid-19 delta-variant when patients are not allowed to come in for a face-to-face meeting with their healthcare provider.

Wise County is served by Xfinity and Point Broadband as well. Xfinity has plant in the majority of Wise County. Their website says they can deliver 100 Mbps of service to all residential customers. Their outside plant seems adequate in the towns but not so adequate in the rural areas. They cannot provide the 25/3Mbps service 24/7. When the network is in full demand in the evenings, their service slips below the 25/3Mbps threshold. SCTC has left out the towns where Xfinity seem to have above 25/3Mbps of service. Their network design uses a shared platform where they flood the network with 100Mbps of Bandwidth for residential customers. This shared platform is greatly reduced at each location when all locations are using bandwidth at the same time. That is shown on our service area maps. Point Broadband uses the leased network from SCTC in Wise County as well. They have very few residential customers outside the towns as well as where that leased network is concentrated. The capacity of the network is used up in Wise as well just like Lee County, VA.

SCTC serves Scott County, VA. The broadband service is less than 10/1Mbps in the proposed project area.

SCTC has conducted meetings with the Lee County and Wise County Board of Supervisors. Lee County provided two Town Hall type meetings at Lee High and Thomas Walker High schools for citizens to attend who did not have service. SCTC surveyed those attendees and they provided documentation as to not having service. The Wise County Board of Supervisors hired Thomas Litton, an Engineering Firm in Wise County, VA to assess their Broadband needs in Wise County and their survey is included in this application. (See attachment 4 - Documentation Unserved Area VATI Criteria)

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3. Describe if any areas near the project have received funding from federal grant programs, including but not limited to Connect America Funds II (CAF II), ACAM, ReConnect, Community Connect, and Rural Digital Opportunity Funds (RDOF). If there have been federal funds awarded near the project area(s), provide a map showing these areas, verifying the proposed project area does not conflict with these areas. Do not include areas awarded to satellite broadband providers. Label Map: Attachment 2 – Documentation on Federal Funding Area.

**Answer:**

Wise County has a small amount of CAF II funded areas which has not been included in the project area. The RDOF areas of Wise County was awarded to a satellite provider and it is included in the proposed grant application's project area.

Lee County has some CAF II funding areas which have not been included in the project area. The RDOF areas of Lee County was awarded to SCTC and are included in the proposed grant application's project area. There are 181 RDOF Passings within the project area of the 381 SCTC was awarded.

Scott County does not have CAF II areas or RDOF areas in the proposed grant applicaiton's project area.

The CAF II areas and the RDOF areas will be shown on the attached map.

See Attachment 2 - Documentation of Federal Funding

4. Describe if any blocks awarded in Rural Digital Opportunity Fund (RDOF), excluding those awarded to satellite internet service providers, are included in the VATI application area. If RDOF areas awarded to terrestrial internet service providers are included in the VATI application, provide a map of these areas and include information on number of passings in RDOF awarded areas within the VATI application area, and Census Block Group ID number for each block group in the project area. Label Attachment: Attachment 3 – RDOF Awarded Areas Form in VATI Area

**Answer:**

SCTC was the awardee for RDOF in Lee County, VA. Attachment 3 depicts the 181 RDOF passings located in the proposed service area. There are a total of 381 RDOF passings awarded to SCTC in Lee County, VA but, only 181 is in the proposed service area.

A satellite provider was awarded the RDOF in Wise County, VA.

There are no RDOF areas in the proposed service area in Scott County, VA.

See Attachment 3 - RDOF Awarded Areas Form in VATI Area

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5. Overlap: To be eligible for VATI, applicants must demonstrate that the proposed project area(s) is unserved. An unserved area is defined as an area with speeds below 25/3 mbps and with less than 25% service overlap within the project area for wireless projects and 10% for wireline projects. Describe any anticipated service overlap with current providers within the project area. Provide a detailed explanation as to how you determined the percentage overlap. Label Attachment: Attachment 4 – Documentation Unserved Area VATI Criteria.

**Answer:**

Point Broadband has network in Lee and Wise Counties. They lease the network from SCTC with 2.25 years remaining on the lease. This network is at full capacity and can not accomodate additional customers or they lack electronics on their network to serve additional customers in most locations. SCTC does not feel it should be considered an overlap due to the fact that they cannot provide any more service than they have now and will not be operating this network in 2.25 years.

Xfinity has network in Lee county in the towns of Jonesville, Pennington Gap and along Rt 58 from the Wise County/Lee County line to Jonesville VA. SCTC did not include this in the proposed project area. Xfinity have network in St. Charles and Keokee. This is very isolated and cannot provide 25/3Mbps service 24/7 due to the age of the network and the design of a shared network. Xfinity has network in much of Wise County, however, the network design of a shared network prevents them from attaining 25/3Mbps 24/7 in the rural areas when everyone is on the network. This lack of capacity is further hindered by long loops and older plant in the rural areas of Wise County, VA.

SCTC has determined that with 10,982 passings in the total proposed service area, the only overlap would occur in Wise County. This would allow for a 1,098 customer overlap. SCTC feels once they have worked more in Wise County, they will gain a better feel for the available service there and may find additional underserved areas. Based on SCTC's current information, all of the LENOWISCO footprint will be served except a small area around Pound, VA which is located in a high-cost area due to exorbitant make-ready costs. LENOWISCO and SCTC would like to apply for that area in the next round of applications for high-cost areas. SLENOWISCO and SCTC did not apply for that area this time due to trying to keep the cost per passing more competitive.

Surveys were conducted in Lee and Wise Counties to determine if service was available based on VATI's Criteria. The surveys are attached in Attachment 4 and Attachment 20.

See Attachment 4 - Documentation Unserved Area VATI Criteria

See Attachment 20 - Additional Documentation Unserved Area VATI Criteria

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6. Total Passings: Provide the number of total serviceable units in the project area. Applicants are encouraged to prioritize areas lacking 10 Megabits per second download and 1 Megabits per second upload speeds, as they will receive priority in application scoring. For projects with more than one service area, each service area must have delineated passing information. Label Attachment: Attachment 5 – Passings Form.
- Of the total number of VATI passings, provide the number of residential, business, non-residential, and community anchors in the proposed project area. (Up to 10 points for businesses and community anchor institutions)
  - If applicable, of the total number of RDOF passings, provide the number of residential, business, non-residential, and community anchors in the proposed project area.
  - If applicable, provide the number of passings that will require special construction costs, defined as a one-time fee above normal service connection fees required to provide broadband access to a premise. Describe the methodology used for these projections.
  - If applicable, provide the number of passings included in the application that will receive broadband access because special construction costs have been budgeted in the VATI application. Describe the methodology used for determining which passings with special construction costs were budgeted in the application.
  - Provide the number of passings in the project area that have 10/1 mbps or less. Describe the methodology used for these projections. (up to 15 points)

**Answer:**

- Total VATI Passings: Residential 10,982, Business 0, Non-residential 0, Community Anchors 0.
- RDOF Passings: Residential 181, Business 0, Non-residential 0, Community Anchors 0.
- Special Construction passings: 0 SCTC previously had and utilized a policy to charge for service drops over 1200'. **In all grant funded subsidized builds, SCTC does not charge anything to the customer and SCTC builds to all consumers that request service.**
- Special Construction Cost passings: 0
- Number of 10/1Mbps or less passings: 5,375

The Methodology for Special Construction passings - At 6 customers or less per mile in rural southwest Virginia, all locations are most likely special construction ie: high costs. But, if the DHCD funds this VATI application, SCTC would build, as always, to everyone without a special construction cost for the drop or the installation. With SCTC's approach, there are no Special Construction Costs in this project.

There are a total of 4,962 pasings in Lee County. The majority of these passings are unserved. SCTC has compiled a list of 688 unserved residences who have signed up for service in anticipation of this project. SCTC also had an additional 87 unserved customers to request service at the town hall meetings conducted. The lists are included in Attachment 4 in this application. There is very little overlap in the proposed service area of Lee County. With that, SCTC considered all 4,962 as unserved or underserved. In Wise County, SCTC had 5% of the customers surveyed in which said they had 10/1 or less. So, %5 of 5,902 is 295. In Scott County, SCTC is the service area provider. SCTC has less than 10/1 for the 118 customers in Scott County. That is how SCTC determined its total of 5,375 with 10/1 or less.

See Attachment 5 - Passings Form

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7. **For wireless projects only:** Please explain the ownership of the proposed wireless infrastructure. Please describe if the private co-applicant will own or lease the radio mast, tower, or other vertical structure onto which the wireless infrastructure will be installed.

**Answer:**

N/A

8. **Speeds:** Describe the internet service offerings, including download and upload speeds, to be provided after completion of the proposed project. Detail whether that speed is based on dedicated or shared bandwidth, and detail the technology that will be used. This description can be illustrated by a map or schematic diagram, as appropriate. List the private co-applicant's tiered price structure for all speed offerings in the proposed project area, including the lowest tiered speed offering at or above 25/3 mbps. (up to 10 points)

**Answer:**

Internet service offerings for residential, non-discounted monthly broadband Internet:

25Mbps up and 12Mbps down @ \$59.95, 50Mbps up and 25Mbps down @ \$79.95, 100Mbps up and 50Mbps down @ \$89.95, 200Mbps up and 100Mbps down @ \$99.95, 500Mbps up and 200Mbps down @ \$109.95, 1000Mbps up and 500Mbps down (1 Gig) @ \$130.95. Higher bandwidth speeds from 1Gbps up to 10Gbps of dedicated bandwidth per location will be available if requested.

Once this project is complete and the Scott County FTTP is complete, SCTC will raise the Bandwidth for each plan. So, the 25/12Mbps will go to 100/100Mbps, the 50/25Mbps will go to 200/200Mbps, ect. all the way to a 1000Mbps/1000Mbps. Then SCTC will add 2Gig/2Gig and 10Gig/10Gig plans that are really affordable.

Residences with school-age students will be offered a discount of \$10.00/month.

Businesses, schools, libraries, and higher education are always given competitive and preferred rates to encourage economic development, job creation and educational opportunities for the youth in SCTC's current footprint.

Note - At the customer's request, additional bundled services will be available that would include telephone and security services.

In the proposed project, SCTC will be utilizing Calix's Passive Optical Network (PON) solution in preparation of 10Gbps becoming a standard service offering. PON technology allows the service provider to centralize access equipment and reduce turn-up time. With a PON solution, SCTC is able to offer higher service speeds while reducing the total number of network components needed, thus simplifying network design and lowering administrative overhead. SCTC will have the ability to offer up to 10Gbps of dedicated bandwidth per location. A description of the detailed technology to be used is included in Attachment 18.

Attachment 18 - Detailed Technology for the Project



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9. Network Design: Provide a description of the network system design used to deliver broadband service from the network's primary internet point(s) of presence to end users, including the network components that already exist and the ones that would be added by the proposed project. Provide a detailed explanation of how this information was determined with sources. Provide information on how capacity for scalability, or expansion, of how the network can adapt to future needs. If using a technology with shared bandwidth, describe how the equipment will handle capacity during peak intervals. For wireless projects, provide a propagation map for the proposed project area with a clearly defined legend for scale of map. Label Map: Attachment 6 – Propagation Map Wireless Project.

**Answer:**

Scott County Telephone Cooperative's (SCTC's) network is configured as an actively switched Ethernet network. Active Ethernet is a relatively simpler protocol that uses less complexity and signaling overhead that can provide higher transmission speeds and greater throughput capacities. It allows a greater direct control of actual packet routing and traffic management that provides more granularity for grooming data flow and for analysis/trouble-shooting when needed. The sultant customer and inter-carrier connections provide better interoperability and less signaling complexity. SCTC currently uses a combination of Ciena and Calix hardware to light their network. SCTC's current standard deployment gear can provide each end-user with up to 1Gbps of bandwidth. But, with alternate interface cards, speeds up to 10Gbps can be provided to the end-user without deploying special hardware.

In the proposed project, SCTC will be utilizing Calix's Passive Optical Network (PON) solution in preparation of 10Gbps becoming a standard service offering. PON technology allows the service provider to centralize access equipment and reduce turn-up time. With a PON solution, SCTC is able to offer higher service speeds while reducing the total number of network components needed, thus simplifying network design and lowering administrative overhead.

The SCTC regional network consists of redundantly ringed fiber pathways across the region, each with multiple fiber strands in each cable sheath. These individual strands are lit using Dense Wave Division Multiplexing (DWDM) technology that enables multiple transmission pathways within each fiber strand. Currently, SCTC only uses eight wavelengths to enable up to 80Gbps of throughput capacity strand, but is currently in the process of expanding this to forty wavelengths. With this expansion, SCTC will be capable of transporting up to forty 100Gpbs connections.

SCTC uses redundant Juniper routers in its core to process all internet traffic. The routers currently have four 10Gbps based connections to diverse Internet backbones and two 10gbs direct peering connections. The Internet backbone connections are contracted through GTT, Lumen, Hurricane Electric, and Windstream and terminate at diverse sites in our ringed network. Direct peering is established in Atlanta using Digital Realty and in Ashburn using Equinix. The routing of Internet destined traffic across these six pathways is managed dynamically using Border Gateway Routing Protocol (BGP).

See Attachment 18 - Detailed Technology of the Project.

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10. Explain how the proposed project achieves universal broadband coverage for the locality or fits into a larger plan to achieve universal broadband coverage for the locality. If applicable, explain the remaining areas of need in the locality and a brief description of the plan to achieve universal broadband coverage. (up to 50 points)

**Answer:**

This project fits into a larger project to achieve universal broadband coverage due to serving the remaining unserved areas as well as areas who do not have adequate 25/3Mbps broadband service in LENOWISCO's footprint.

Powell Valley Electric Cooperative (PVEC), SCTC's partner, has pledged to build fiber to every unserved location in their footprint and SCTC has agreed to light and manage it. Under the current contract, PVEC and SCTC will do a revenue sharing which pays back PVEC for any investment they make. Until that investment is paid back, PVEC is waiving all pole rental and make-ready charges. Upon repayment of their investment, PVEC will begin charging pole rental fees and the revenue share will discontinue. PVEC will continue to provide customer service and maintenance on their footprint.

The LENOWISCO PDC, SCTC and PVEC's goal is to provide broadband to every location in the LENOWISCO Planning District's footprint. The execution and current construction of the last two VATI grants have demonstrated it possible to accomplish this goal. Each entity is committed, so 10,964 unserved/underserved locations in areas of need will be completed with this project. Therefore, universal broadband coverage in LENOWISCO's footprint would be 95-97% achieved with this grant funding. The remaining 3-5% is located in high-cost areas which will be applied for in the next round of funding. Also, any areas that have possibly ben missed will be included also.

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## 11. Project Readiness

Describe the current state of project development, including but not limited to: planning, preliminary engineering, identifying easements/permits, status of MOU or MOA, and final design. Prepare a detailed project timeline or construction schedule, identifying specific tasks, staff, contractor(s) responsible, collection of data, etc., and estimated start and completion dates. Applicants must include Memorandums of Understanding (MOUs) or Memorandums of Agreement (MOAs) between applicants (drafts are allowable). Label Attachments: Attachment 7 – Timeline/Project Management Plan; Attachment 8 – MOU/MOA between Applicant/Co-Applicant; (up to 20 points)

### Answer:

Planning and preliminary engineering for this project is complete. SCTC has an existing partnership with PVEC to provide broadband services to all PVEC customers. This partnership will include no make-readies and no pole rental fees for this project when located in PVEC's footprint. A revenue share agreement is in place for SCTC to pay PVEC for their investment thru that revenue share. When PVEC is paid in full, SCTC will own the network. PVEC will start charging pole rental fees and make readies once SCTC pays off PVEC's investment. PVEC will build this project and purchase outside plant materials. SCTC will purchase materials to install the electronics in the network as well as at the customer premise and provide that installation. SCTC will obtain estimates from contractors and vendors to price check. Construction will primarily be areal and installed on pre-existing poles. Minimal to no ground disturbance is expected which significantly decreases potential environmental impacts. This applies to the Lee County portion of the project.

SCTC has completed planning and preliminary engineering for Wise County. SCTC has an existing pole attachment agreement with Old Dominion Power. Our relationship with Old Dominion allows us to Engineer and determine make-ready costs and use the portal on their system to enter this info and complete pole attachment permits. SCTC will bid the construction of this project and negotiate the best price with our existing electronics providers. SCTC will bid and purchase the materials with an emphasis on availability. SCTC's Engineers will inspect all construction and installations to ensure quality and accuracy. Minimal to no ground disturbance will occur which significantly decreases potential environmental impacts. This applies to the Wise and Scott County portions of this project.

LENOWISCO will administer the grant funds, assist in obtaining easements and permits from KU/ODP Kentucky Utilities/Old Dominion Power and American Electric Power (AEP), if needed. SCTC will manage the construction of the project. SCTC has existing relationships with the Power companies involved to attach to their poles. (Pole Attachment Agreements are included in Attachment 17 - Pole Attachment Agreements).

LENOWISCO has a revenue sharing agreement with SCTC. In 2012, SCTC purchased the LENOWISCO Network, LLC thru its subsidiary company, Appalachian Broadband, LLC. The funds from the revenue share are used as seed money to expand broadband service or any economic development projects in the LENOWISCO PDC Footprint.

Attachment 7-Timeline/Project Management Plan

Attachment 8-MOU/MOA between Applicant and Co-Applicant

12. Has the applicant or co-applicant received any VATI grants? If so, provide a list of these grants, with a detailed summary of the status of each.

### Answer:

Yes.

VATI FY2020LP-001 LENOWISCO Regional Broadband Expansion Phase 1 - Complete.

VATI #2021-001 LENOWISCO PDC US 58 Corridor Broadband Expansion Project - This grant is currently under Construction and will be completed by December 2022.

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13. Matching funds: Complete the funding sources table indicating the cash match and in-kind resources from the applicant, co-applicant, and any other partners investing in the proposed project (VATI funding cannot exceed 80 percent of total project cost). In-kind resources include, but are not limited to: grant management, acquisition of rights of way or easements, waiving permit fees, force account labor, etc. Please note that a minimum 20% match is required to be eligible for VATI, the private sector provider must provide 10% of the required match. If the private co-applicant cash match is below 10% of total project cost, applicants must provide financial details demonstrating appropriate private investment. Label Attachments: Attachment 9 - Funding Sources Table; Attachment 10 – Documentation of Match Funding

**Answer:**

Total Project will cost:	\$28,545,000
SCTC's Match:	\$ 2,854,500
Wise County Match:	\$ 1,800,000
Lee County Match:	\$ 1,400,000
Scott County Match:	\$ 300,000
VATI Grant:	\$22,190,500

Due to SCTC's partnership with PVEC, they have already constructed/built 147 miles of backbone in the proposed project area. That is a \$2.4 million investment at \$16,500/mile, which doesn't include normal make-ready expenses due to the make-readies being waived by PVEC along with engineering costs due to those being completed in-house. This backbone fiber is not lit, spliced or had distribution fiber built. However, this backbone construction significantly reduces the cost to provide service in the remaining proposed project area of Lee county.

See Attachment 9-Funding Sources Table

See Attachment 10-Documentation of Match Funding

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14. Leverage: Describe any leverage being provided by the applicant, co-applicant, and partner(s) in support of the proposed project. (up to 10 points)

**Answer:**

The LENOWISCO PDC has an existing revenue sharing agreement with Scott County Telephone Cooperative (SCTC). In 2012, SCTC purchased the LENOWISCO Network, LLC thru its subsidiary company, Appalachian Broadband, LLC. SCTC is currently doing a revenue share of 2% of the gross revenue from that network with LENOWISCO. The funds from that revenue share are used for "seed money" to expand broadband service or economic development projects in the LENOWISCO Planning District footprint. Some of that seed money was used to purchase wireless equipment for 17 WiFi hotspots through out the LENOWISCO footprint in 2019 to provide broadband for school age kids without service. SCTC provided the installation and the bandwidth.

Due to this grant being phased from the last two VATI LENOWISCO grants, SCTC was and will continue to be able to use some of the same cabinets to house some of the electronics and save a considerable amount of money. This project is contiguous to some of SCTC's existing network which allows SCTC to have redundancy in the network which improves service reliability that will be beneficial for all consumers.

Due to SCTC's partnership with PVEC, no make-ready or pole attachment fees will be charged, which is a huge savings. Additionally, since PVEC is constructing and attaching the project on their existing electrical pole lines, no right-of-way issues will arise since PVEC already has the right-of-way acquired. This partnership is allowing fiber deployment to be expedited faster and more efficiently. The Co-Applicant, SCTC has existing pole attachment agreements with the areas outside of PVEC's footprint. SCTC relationship with Old Dominion Power will also reduce costs and expedite this project. (See Attachment 17)

SCTC's partnership with PVEC has provided a great cost reduction for this project. This partnership has constructed 147 miles of fiber backbone through much of this proposed project area in Lee County which equates to about \$2.4 million. This construction of this backbone fiber will basically reduced this project cost by \$2.4 million. So, it has reduced the cost per sub substantially as well.

Attachment 17- Co-Applicant Agreement & Pole Attachment Agreements, includes a copy of SCTCs MOU and Agreement with PVEC

15. Marketing: Describe the broadband adoption plan.

a. Explain how you plan to promote customer take rate, including marketing activities, outreach plan, and other actions to reach the identified serviceable units within the project area. Provide the anticipated take rate and describe the basis for the estimate. (up to 10 points)

b. Describe any digital literacy efforts to ensure residents and businesses in the proposed project area sufficiently utilize broadband. Please list any partnering organizations for digital literacy, such as the local library or cooperative extension office.

**Answer:**

SCTC's Marketing Department will create flyers and mail letters announcing that service is available to all potential customers within the project areas. Door-to-Door sales, outbound calling, social media and website information will be provided as well. SCTC is predicting a 60% take-rate for broadband services within all areas of the proposed project. This estimate is based on historical data from 15 other broadband projects that SCTC has completed.

If the grant is awarded, Digital literacy training will be supplied at the time of installation.

16. Project Management: Identify key individuals who will be responsible for the management of the project and provide a brief description of their role and responsibilities for the project. Present this information in table format. Provide a brief description of the applicant and co applicant's history and experience with managing grants and constructing broadband communication facilities. Please attach any letters of support from stakeholders. If the applicant is not a locality(s) in which the project will occur, please provide a letter of support from that locality. Attachment 11 – Letters of Support.

**Answer:**

**NAME**

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<b>YEARS OF EXPERIENCE</b>	<b>TITLE</b>	<b>RESPONSIBILITIES</b>
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Duane A. Miller  
Executive Director  
(LENOWISCO PDC)

25

Co-oversight of all aspects of the project.

Rebecca Crockett  
Director of Project Dev. (LENOWISCO PDC)

14

Project Management/Grant Administration of Project

William J. Franklin  
C.E.O. (SCTC)

28

Oversight of all aspects of the project.

Roger Fraysier  
Director Of Operations and Finance (SCTC)

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21

Operational and Accounting functions of the project.

Matt Hill

C.O.O. (SCTC)

29

Engineering Management, Network Management & Design functions of the project.

Gwen Richardson

Project Manager/Office Manager/Exec. VP & Operations Manager-MountaiNet (SCTC)

35

Marketing, Data Management and customer support for the projects.

Melissa Jessee

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Exec. Administrative Manager/Grants Adm.

31

Reporting requirements for the project.

The LENOWISCO Planning District Commission and Scott County Telephone Cooperative (SCTC) have worked together for many years to better the communities, counties and region. LENOWISCO will provide assistance to Scott County Telephone Cooperative in obtaining permits, right-of-ways, easements or any other assistance needed for this project. LENOWISCO will over-see the management of the grant funds and document the monies to insure they are dispersed properly.

Scott County Telephone Cooperative's (SCTC's) management team has had many years of experience managing and constructing broadband facilities. SCTC has completed 15 Fiber-to-the-Premise projects totaling approximately \$44 million. SCTC will design, construct, manage and maintain this project. SCTC will be responsible for 10% of the match on this project and Wise County (\$1.8 million), Lee County, (\$1.4 million) and Scott County (\$300,000) will provide an additional 12% match.

Powell Valley Electric Cooperative (PVEC) has completed several Fiber-to-the Home projects for other providers totaling approximately \$30 million. The existing partnerships with LENOWISCO, SCTC & PVEC to extend Broadband to unserved areas in the region gain the efficiencies of scope and volume which allows all to combine resources to serve a much larger area. The partnerships are ideal for all constituents, whether it's a residential consumer or a business owner. It allows SCTC to offer more bandwidth at a lower price to improve the quality of life, to promote economic development, to improve education, and to improve health care thru tele-medicine in the region. That is, by example, the driving force behind Cooperatives.

SCTC has an agreement with PVEC that any projects done together, PVEC will construct the outside plant and SCTC will light it. PVEC will, in essence, provide the match for the outside plant construction, but when completed, this match will be repaid by SCTC through its current revenue sharing agreement that SCTC has with PVEC. When PVEC repaid from the revenue sharing agreement, SCTC will own the network. PVEC begins charging pole rental, customer service fees and maintenance fees. This partnership is a win/win for our communities, our region and our state.

Attachment 11 - Letters of Support (Stakeholders/Locality)



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## 17. Project Budget and Cost Appropriateness

Budget: Applicants must provide a detailed budget that outlines how the grant funds will be utilized, including an itemization of equipment, construction costs, and a justification of proposed expenses. If designating more than one service area in a single application, each service area must have delineated budget information. For wireless projects, please include delineated budget information by each tower. Expenses should be substantiated by clear cost estimates. Include copies of vendor quotes or documented cost estimates supporting the proposed budget. Label Attachments: Attachment 12 – Derivation of Costs; Attachment 13 - Documentation of Supporting Cost Estimates. (up to 10 points)

### Answer:

The proposed request of \$28,545,000.00 for Lee, Wise & Scott counties will build on the initial FY2020 and FY2021 VATI Projects to finish the LENOWISCO Planning District's footprint.

Project costs include outside plant, CPE, make-ready, engineering, OLT equipment, and railroad crossing costs. All cost estimates are based on SCTC's prior projects. All other costs are procured, with the only exception of electronics. SCTC uses Calix electronic equipment to keep its network operable with SCTC's existing network.

Attachment 12 – Derivation of Costs

Attachment 13 - Documentation of Supporting Cost Estimates

18. The cost benefit index is comprised of state cost per unit passed. Individual cost benefit scores are calculated and averaged together to create a point scale for a composite score. Provide the following:
- Total VATI funding request
  - Number of serviceable units  
(up to 125 points)

### Answer:

Total VATI Funding request - \$22,190,500.00

Number of Serviceable Units - 10,982

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## 19. Commonwealth Priorities (Up to 40 points)

Additional points will be awarded to proposed projects that reflect Commonwealth priorities. If applicable, describe the following:

- a. Businesses, community anchors, or other passings in the proposed project area that will have a significant impact on the locality or region because of access to broadband.
- b. Unique partnerships involved in the proposed project. Examples include electric utilities, universities, and federal/state agencies.
- c. Digital equity efforts to ensure low to moderate income households in the proposed project area will have affordable access to speeds at or above 25/3 mbps.

### Answer:

a. There are no businesses or community anchors located in the Lee County portion of the project. SCTC does provide broadband service to the Lee County School System. In the last year, SCTC built a broadband connection to about 600 unserved students in Lee County. The proposed project will provide service to the remaining unserved students in Lee county. This project will provide 4,962 residences in Lee County affordable, reliable and robust broadband service. Wise County will also not have many business customers but this project will serve about 25% of the school age kids in Wise County. SCTC hopes to accomplish in Wise County what SCTC has in Scott and soon to be Lee County, 100% broadband coverage for all school age children. This project will provide 5,902 residence of Wise County affordable, reliable and robust broadband service. There are no businesses or community anchors in the Scott County portion of the project. This project will provide 118 residence in Scott County affordable, reliable and robust broadband service. Even though this project does not serve business customers, SCTC has approximately 300-400 business locations served in Lee, Scott and Wise Counties. SCTC is already serving schools, medical facilities, and business throughout the region. SCTC has partnered with LENOWISCO, and the Virginia Coalfield Coalition to provide broadband service to over 70 cell sites in the region. SCTC manages and operates this network.

b. LENOWISCO and SCTC have a unique partnership and share a common interest to better their communities, counties and region. SCTC's partnership with PVEC is ideal for all constituents because they share the same goals of offering a service to everyone at an affordable price. All parties involved strive to improve the quality of life and promote economic development within their communities, counties and the entire region. We've seen first-hand the substantial impact that robust, reliable, and affordable high-speed internet can have on rural communities. The need for telecommuting and telemedicine increased significantly during the start of the pandemic, as well as the needs for students doing schoolwork at home were among the most dramatic. LENOWISCO and SCTC teamed up to provide 17 Wi-Fi hotspots for anyone to utilize through out the region. SCTC extended the school network in Scot County to the homes of 167 school-aged children who did not have service due to their economic conditions. This allowed those students free access to the schools network. For the homes of all school age children and teachers in Scott County all accounts were upgraded to the next level of bandwidth at no charge. In Lee County SCTC built network to over 600 locations without broadband service. Then gave a \$10 discount to all locations which had school age children. There were still many more unserved rural areas that did not have the reliable broadband access.

c. Digital Equality efforts will be adopted to ensure low to moderate income households in the project areas will have affordable access to speeds above the 25/3Mbps threshold if this project is awarded. SCTC's 25/12Mbps service offering is only \$59.95. Additionally, SCTC is offering consumers with school-age children a \$10.00 price reduction to promote connectivity and enhance their educational opportunities. SCTC intends to take this offering to 100/100Mbps as soon as this project is complete and upgrade the bandwidth for each existing offering for the same price and add an affordable 2Gig/2Gig and 10Gig/10Gig offering for residential customers. SCTC has encouraged our customers to sign up for the EBB program which pays \$50/month for their broadband customers. SCTC feels this program will continue into the future. This will be vital for region so all of our economically challenged constituents can afford a robust broadband connection for their children's education, families health care and provide for their entrepreneuring opportunities for self advancement.

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## Additional Information

Provide the two most recent Form 477 submitted to the FCC, or equivalent, as well as point, polygon, and, for wireless providers, RSSI shapefiles for the project area **in .zip file form**. With attachments 17 through 20, attach any other information that the applicant desires to include. Applicants are limited to four additional attachments.

Label Additional Attachments as:

- a. Attachment 14 – Two most recent Form 477 submitted to the FCC or equivalent
- b. Attachment 15 - Point and Polygon shapefiles, in.zip file form, showing proposed passings and project area
- c. Attachment 16 - For wireless applicants: shapefiles, in .zip file form, indicating RSSI projections in the application area
- d. Attachment 17 – XXXXXXXX
- e. Attachment 18 – XXXXXXXX
- f. Attachment 19 – XXXXXXXX
- g. Attachment 20 – XXXXXXXX

## Answer:

Attachment 1 Project Area Map

A1-Project Area Maps

Attachment 2 Documentation of Federal Funding Area

A2-Documentation of Federal Funding

Attachment 3 Documentation of RDOF Awarded Area in VATI Project Area

A3-RDOF awarded areas included in VATI Application

Attachment 4 Documentation that proposed area is unserved based on VATI Criteria

A4-Documentation Unserved Area VATI Criteria

Attachment 5 Passings Form

A5-Passings Form

Propagation Map if Wireless

A6-N/A

Attachment 7 Timeline/Project Management Plan

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A7-Timeline Project Management Plan

Attachment 8 MOU/MOA between Applicant/Co-Applicant

A8-MOU.MOA between Applicant/Co-Applicant

Attachment 9 Funding Sources Table

A9-Funding Sources Table

Attachment 10 Documentation for Match Funding

A10-Documentation of Match Funding

Attachment 11 Letters of Support

A11-Letters of Support

Attachment 12 Derivation of Costs (Project Budget)

A12-Derivation of Costs

Attachment 13 Documentation Supporting Project Costs

A13-Documentation of Supporting Cost Estimates

Attachment 14 Two Most Recent Form 477's submitted to FCC

A14-Two most recent Form 477

Attachment 15 Point and Polygon Shapefiles

A15-Point and Polygon Shapefiles

Attachment 16 RSSI Projections

A16-N/A

Attachment 17 Co-Applicant Agreements & Pole Attachment Agreements

A17-Co-Applicant Agreements & Pole Attachment Agreements

Attachment 18 Detailed Technology for the Project

A18-Detailed Technology for the Project

Attachment 19 SW VA Broadband Plan

A19-SW VA Broadband Plan

Attachment 20 Additional Surveys on Documentation of Unserved Area VATI Criteria

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A20-Additional Surveys on Documentation of Unserved Area VATI Criteria

## Attachments:

Map(s) of project area, including proposed infrastructure

Attachment1ProjectAreaMaps913202140801.pdf

Documentation of Federal Funding (CAF/ACAM/USDA/RDOF, etc...) in and/or near proposed project area.

Attachment2DocumentationofFederalFundingArea913202140812.pdf

RDOF Awarded Areas included in VATI Application (Use template provided)

Attachment3RDOFAwardedAreasincludedinVATIApplication914202181239.pdf

Documentation that proposed project area is unserved based on VATI criteria

Attachment4DocumentationUnservedAreaVATICriteria914202180951.pdf

Passings Form (Use template provided)

Attachment5PassingsForm913202123430.pdf

Timeline/Project Management Plan

Attachment7TimelineProjectManagmentPlan913202132803.pdf

MOU/MOA between applicant/co-applicant (can be in draft form)

Attachment8MOUbetweenApplicantCoApplicant8232021124134.pdf

Funding Sources Table (Use template provided)

Attachment9FundingSourcesTable913202123439.pdf

Documentation of Match Funding

Attachment10DocumentationofMatchFunding913202140833.pdf

Letters of Support

Attachment11LettersofSupport913202143259.pdf

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Derivation of Cost/Project Budget (Use template provided)

Attachment12DerivationofCostsProjectBudget913202123450.pdf

Documentation of Supporting Cost Estimates

Attachment13DocumentationofSupportingCostEstimates913202152847.pdf

Two most recent Form 477 submitted to the FCC or equivalent

Attachment14TwoMostRecentForm477s9102021122602.pdf

Point and Polygon shapefiles, in.zip file form, showing proposed passings and project area

Attachment15PointandPolygonShapefiles9102021114532.zip

Optional

Attachment17CoApplicantAgreementsPoleAttachmentAgreements9102021101443.pdf

Optional

Attachment18DetailedTechnologyoftheProject8232021122045.pdf

Optional

Attachment19SWVABroadbandPlan8232021122325.pdf

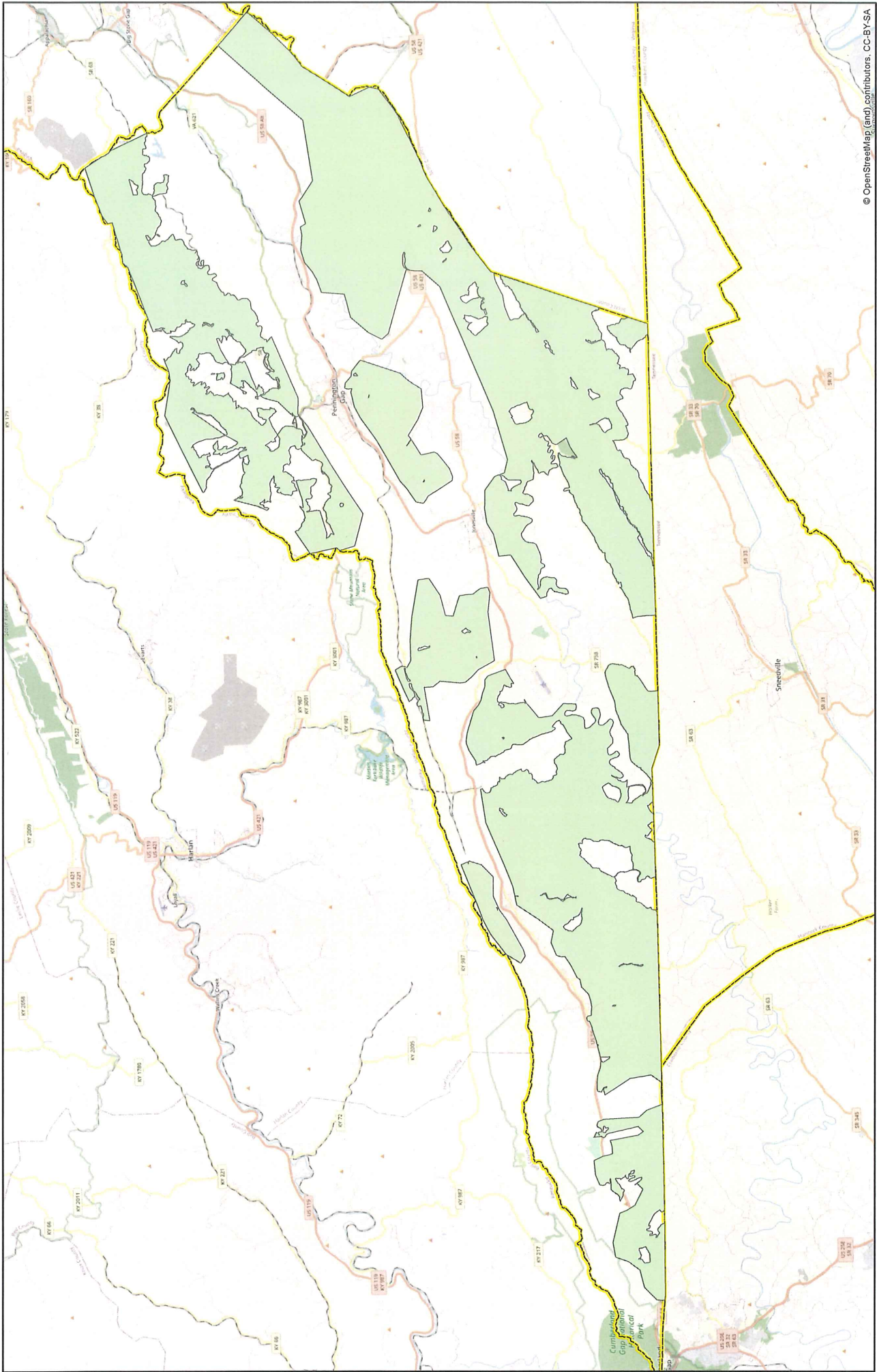
Optional

Attachment20SurveysonAdditionalDocumentationUnservedAreaVATICriteria914202181134.pdf

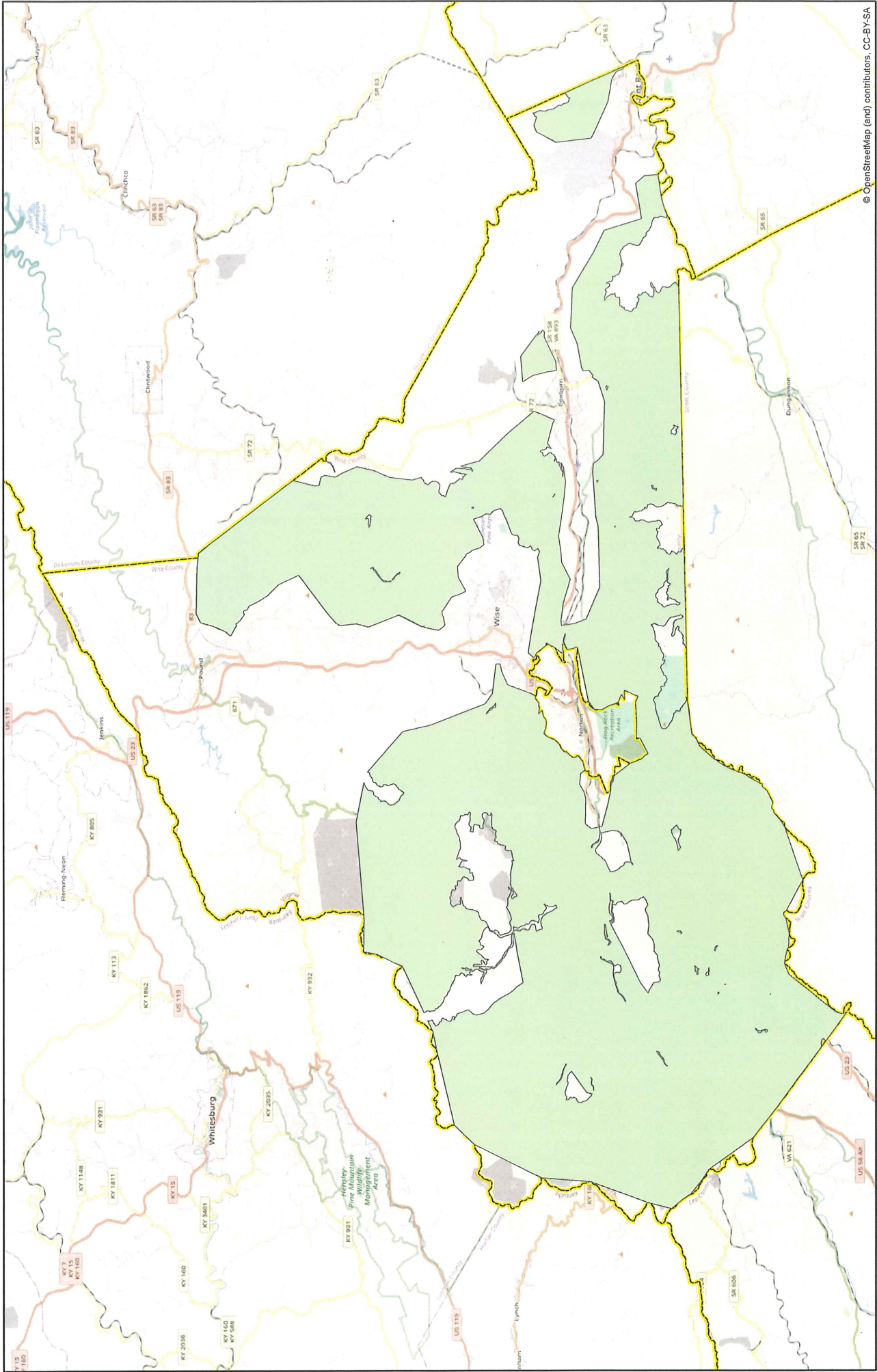
## Notes:

The LENOWISCO PDC, SCTC and PVEC are poised to make a difference in the lives of the citizens of Lee, Wise and Scott counties. The determination to serve locations in Lee County, Wise County and Scott County who do not currently have access to reliable, affordable and robust high-speed broadband that supports future-proof technology is evidence of that commitment. We are building faster and connecting more customers than anyone ever before us. This project will speed this process by providing funding which will allow us to serve the remaining consumers in the LENOWISCO PDC footprint and move closer to serving the harder to serve areas that are even more rural.

Attachment 1 - Lee County  
Project Area

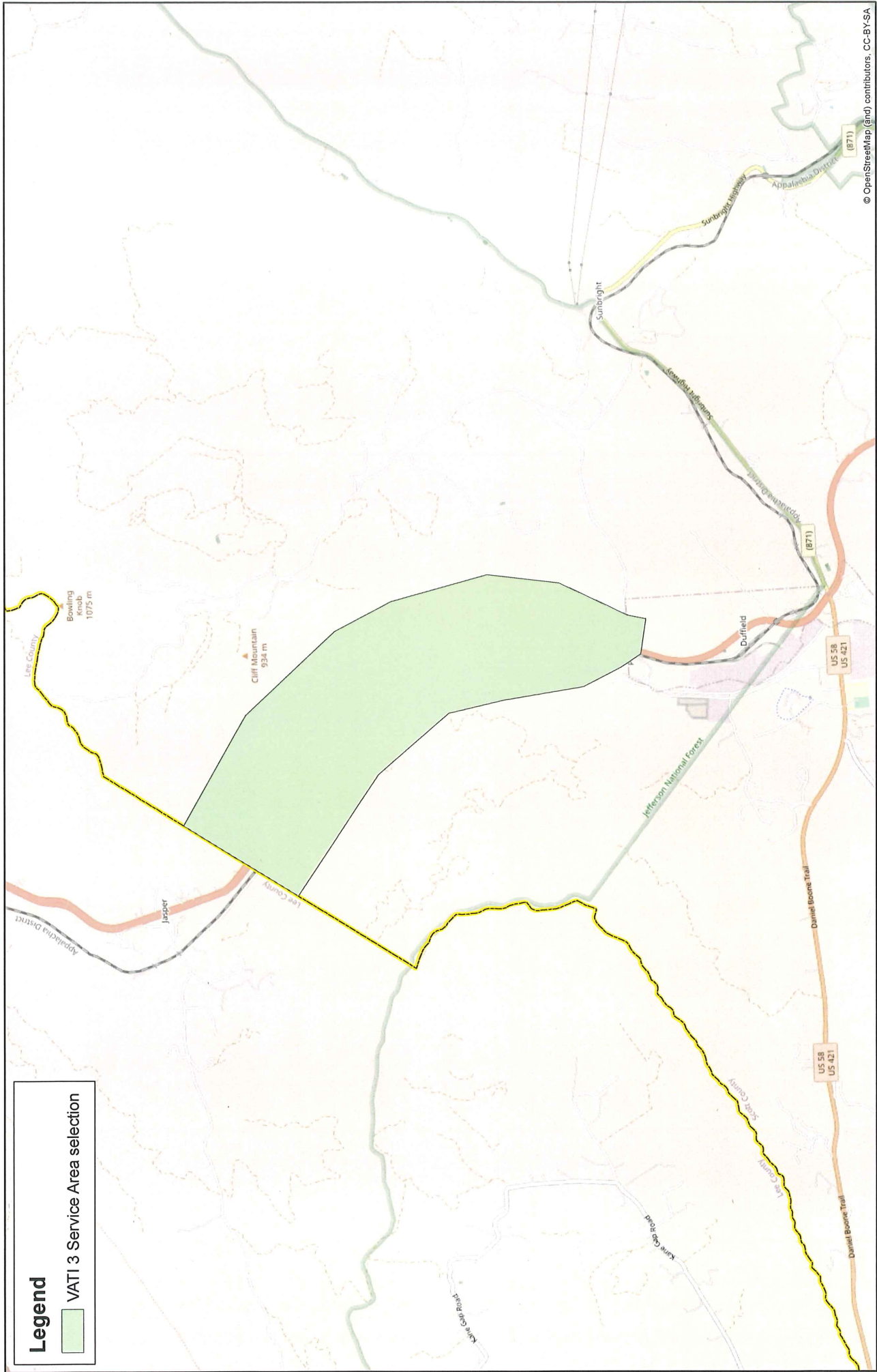


Attachment 1 - Wise County  
Project Area

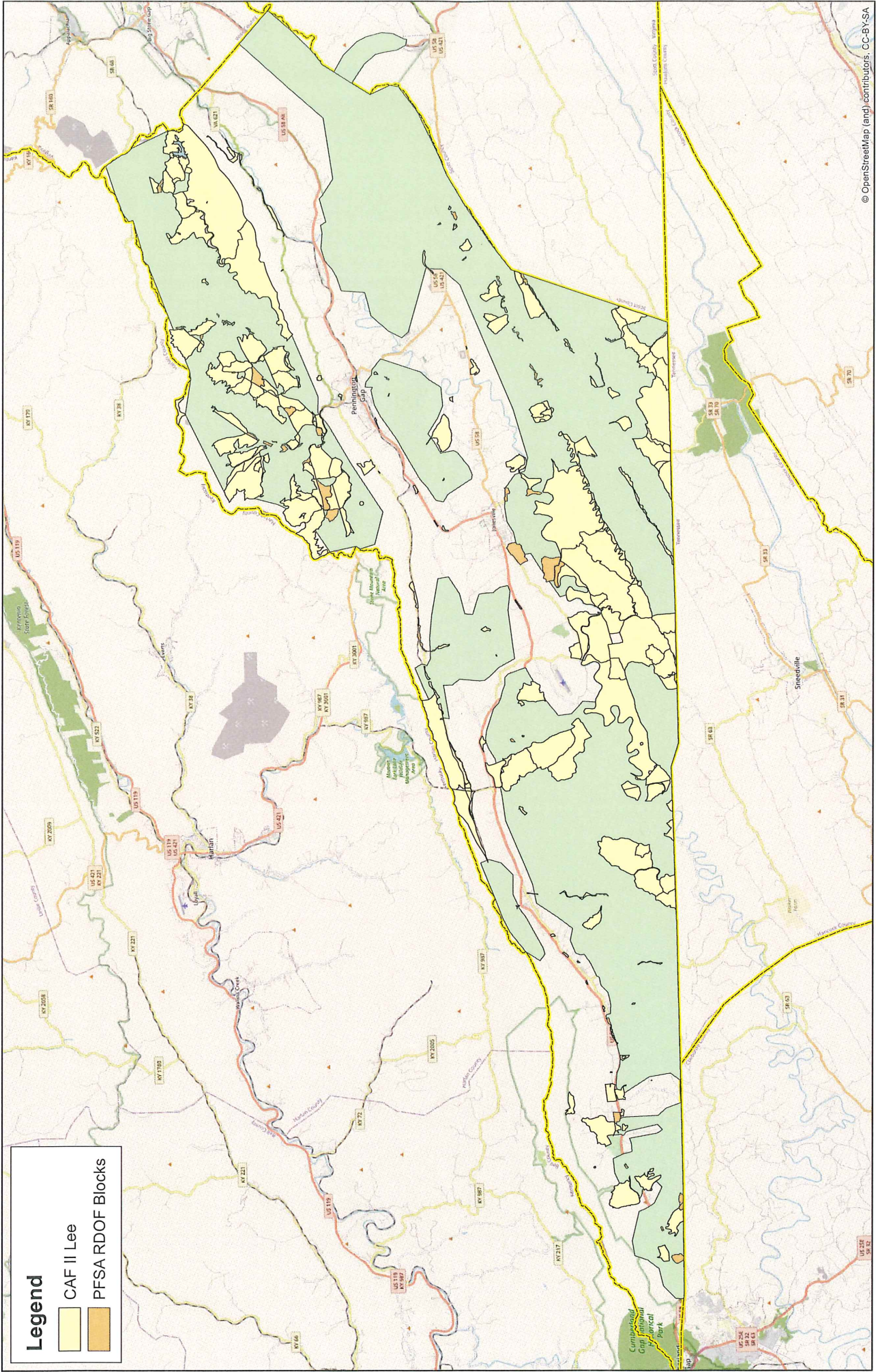




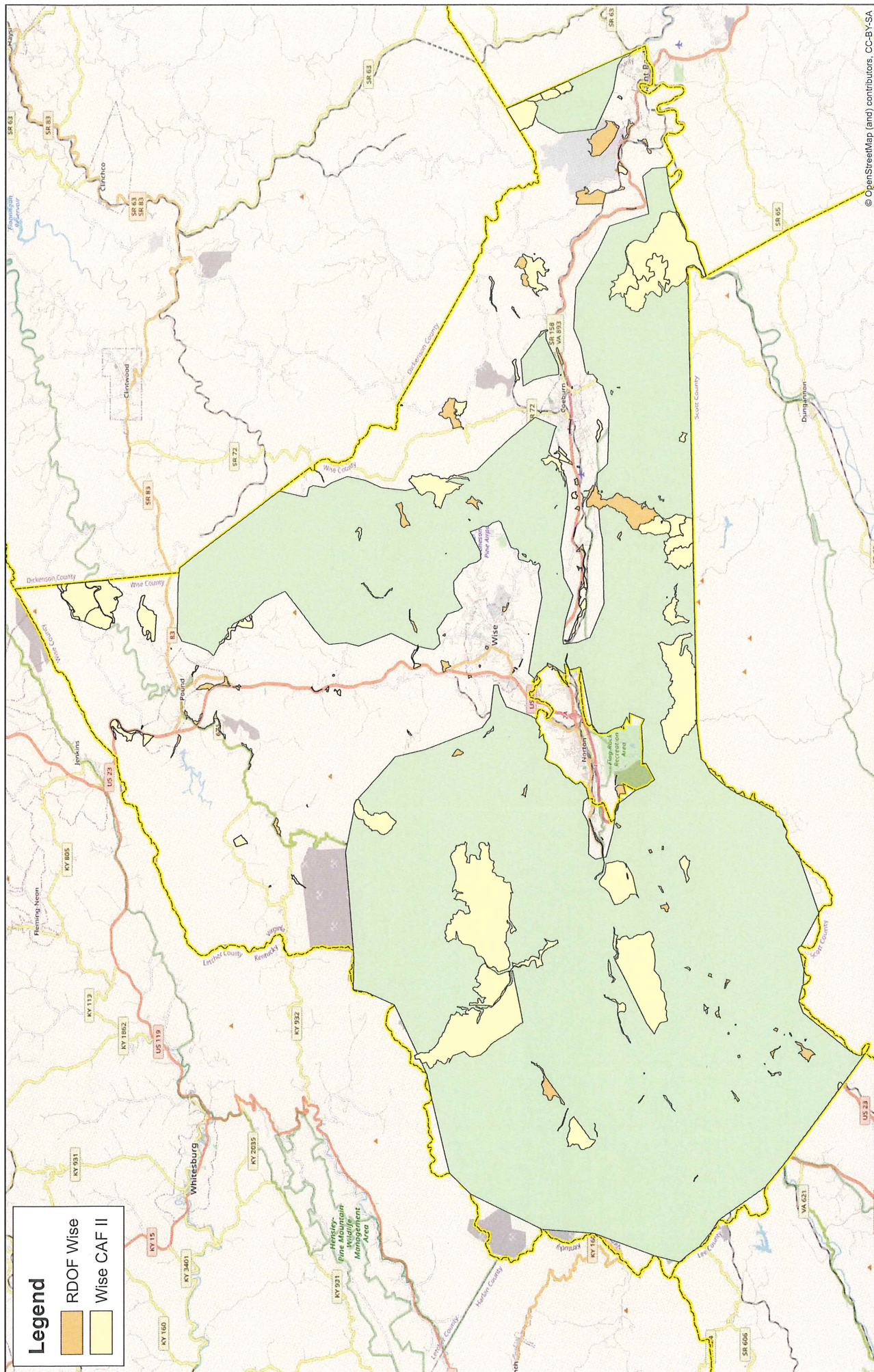
Attachment 1 - Scott County  
Project Area



Attachment 2 - Documentation of Federal Funding - Lee Co.



Attachment 2 - Documentation of Federal Funding - Wise Co.



# 2022 Virginia Telecommunication Initiative (VATI)

## RDOF Passings Form

Type of Passings	Total Number of Passings in the Project Area that lie within Preliminarily Awarded RDOF Areas <sup>1</sup>
Residential	181
Businesses (non-home based)	
Businesses (home-based)	
Community Anchors	
Non-residential	
<b>Total Number of RDOF Passings</b>	<b>181</b>

*Note: The Total Number of RDOF Passings **MUST** be equal to the Residential, Business (non-home based), Non-residential and Community Anchors sum.*

### Definitions

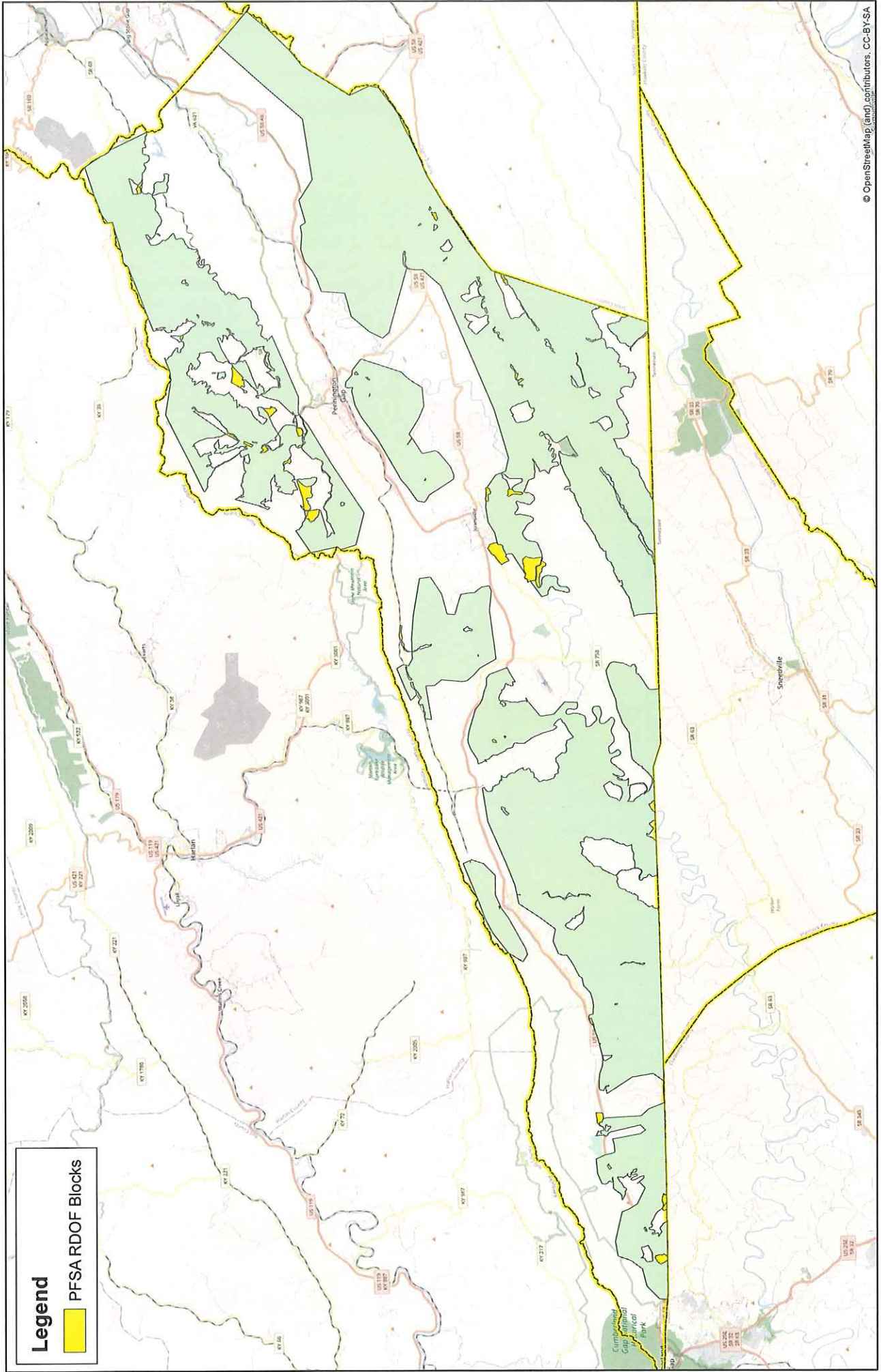
**Passing** – any structure that can receive service. Multi-unit structures may be counted as more than 1 passing, provided individual connections and account are planned at that structure.

**Business** – An organization or entity that provides goods or services in order to generate profit. Businesses based in residential homes can count if they are a registered business (BPOL, LLC, etc.).

**Community Anchor** - schools, libraries, medical and health care providers, public safety entities, community colleges and other institutions of higher education, and other community support organizations and agencies that provide outreach, access, equipment, and support services to facilitate greater use of broadband service by vulnerable populations, including low-income, unemployed, and the aged.

**Non-Residential Passing** – places of worship, federal, state, or local facilities or other potential customers that are neither a residence, business or a community anchor as defined above.

Attachment 3 - RDOF Awarded Areas included in VATI App.  
RDOF - Lee County



FID	Shape *	STATEFP10	COUNTYFP10	TRACTCE10	BLOCKCE10	GEOID10	NAME10	MTFCC10	ALAND10	INTPTLAT10	INTPTLON10	BLOCKID
0	Polygon	51	105	950600	1140	511059506001140	Block 1140	G5040	205870	36.6315895	-83.5050391	511059506001140
1	Polygon	51	105	950600	1066	511059506001066	Block 1066	G5040	30055	36.6272569	-83.5374925	511059506001066
2	Polygon	51	105	950500	2009	511059505002009	Block 2009	G5040	15132	36.7649151	-83.0792733	511059505002009
3	Polygon	51	105	950600	1171	511059506001171	Block 1171	G5040	15055	36.6091124	-83.5785766	511059506001171
4	Polygon	51	105	950600	1169	511059506001169	Block 1169	G5040	9840	36.6086587	-83.5798025	511059506001169
5	Polygon	51	105	950600	2057	511059506002057	Block 2057	G5040	76017	36.5984172	-83.5648833	511059506002057
9	Polygon	51	105	950100	2068	511059501002068	Block 2068	G5040	25969	36.8151916	-83.0503075	511059501002068
13	Polygon	51	105	950100	4077	511059501004077	Block 4077	G5040	60079	36.859767	-82.8840625	511059501004077
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15	Polygon	51	105	950100	3157	511059501003157	Block 3157	G5040	40429	36.8111438	-83.0019249	511059501003157
20	Polygon	51	105	950100	1025	511059501001025	Block 1025	G5040	11412	36.7897951	-83.0582415	511059501001025
21	Polygon	51	105	950400	3010	511059504003010	Block 3010	G5040	58559	36.662769	-83.0207978	511059504003010
23	Polygon	51	105	950600	2055	511059506002055	Block 2055	G5040	137096	36.5985559	-83.5597995	511059506002055
24	Polygon	51	105	950100	3069	511059501003069	Block 3069	G5040	79132	36.8607775	-82.8872863	511059501003069
30	Polygon	51	105	950600	1132	511059506001132	Block 1132	G5040	53627	36.6345656	-83.442137	511059506001132
32	Polygon	51	105	950100	1065	511059501001065	Block 1065	G5040	82851	36.7866598	-83.0689535	511059501001065
33	Polygon	51	105	950100	1076	511059501001076	Block 1076	G5040	727748	36.7776518	-83.0911865	511059501001076
34	Polygon	51	105	950400	2059	511059504002059	Block 2059	G5040	85527	36.596241	-82.9942698	511059504002059
35	Polygon	51	105	950100	2066	511059501002066	Block 2066	G5040	83227	36.8153242	-83.0515072	511059501002066
36	Polygon	51	105	950400	3120	511059504003120	Block 3120	G5040	184092	36.6678909	-83.0999817	511059504003120
37	Polygon	51	105	950500	2047	511059505002047	Block 2047	G5040	166524	36.729138	-83.185356	511059505002047
39	Polygon	51	105	950400	2024	511059504002024	Block 2024	G5040	88931	36.6289585	-83.0207548	511059504002024
40	Polygon	51	105	950100	2127	511059501002127	Block 2127	G5040	224520	36.7948869	-83.0354124	511059501002127
46	Polygon	51	105	950500	4043	511059505004043	Block 4043	G5040	829377	36.676723	-83.1330527	511059505004043
47	Polygon	51	105	950400	3009	511059504003009	Block 3009	G5040	61042	36.6824275	-82.9577759	511059504003009
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66	Polygon	51	105	950600	2095	511059506002095	Block 2095	G5040	282705	36.6009236	-83.598471	511059506002095
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69	Polygon	51	105	950100	1125	511059501001125	Block 1125	G5040	15405	36.7678444	-83.0761135	511059501001125
70	Polygon	51	105	950100	1093	511059501001093	Block 1093	G5040	375605	36.7741563	-83.1044176	511059501001093
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73	Polygon	51	105	950500	2015	511059505002015	Block 2015	G5040	6635	36.7774863	-83.0543019	511059505002015
75	Polygon	51	105	950400	1006	511059504001006	Block 1006	G5040	367749	36.6553352	-83.146883	511059504001006
76	Polygon	51	105	950600	3007	511059506003007	Block 3007	G5040	32257	36.6373491	-83.3585114	511059506003007
77	Polygon	51	105	950100	2102	511059501002102	Block 2102	G5040	21763	36.8192995	-83.0673864	511059501002102
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102	Polygon	51	105	950100	1118	511059501001118	Block 1118	G5040	7686	36.7781827	-83.0582509	511059501001118
103	Polygon	51	105	950400	2007	511059504002007	Block 2007	G5040	23604	36.659704	-82.972845	511059504002007

105 Polygon	51	105	950400	1008	511059504001008	Block 1008	G5040	1055126	36.6597321	-83.1435315	511059504001008
106 Polygon	51	105	950400	3020	511059504003020	Block 3020	G5040	95652	36.6644455	-83.0151835	511059504003020
113 Polygon	51	105	950100	3170	511059501003170	Block 3170	G5040	12198	36.8272232	-82.9766796	511059501003170
119 Polygon	51	105	950400	3013	511059504003013	Block 3013	G5040	51419	36.673292	-82.989713	511059504003013
121 Polygon	51	105	950100	2067	511059501002067	Block 2067	G5040	7495	36.8142681	-83.0515731	511059501002067
123 Polygon	51	105	950400	2004	511059504002004	Block 2004	G5040	52767	36.6682724	-82.9556103	511059504002004
128 Polygon	51	105	950100	1033	511059501001033	Block 1033	G5040	10438	36.7990528	-83.0575284	511059501001033
129 Polygon	51	105	950100	1123	511059501001123	Block 1123	G5040	29175	36.7966884	-83.0585858	511059501001123
130 Polygon	51	105	950100	1027	511059501001027	Block 1027	G5040	12273	36.7900666	-83.0575924	511059501001027
131 Polygon	51	105	950100	1107	511059501001107	Block 1107	G5040	20047	36.7798009	-83.0590752	511059501001107
132 Polygon	51	105	950100	2107	511059501002107	Block 2107	G5040	76892	36.807237	-83.0566662	511059501002107
134 Polygon	51	105	950400	3027	511059504003027	Block 3027	G5040	82141	36.7046006	-82.9106968	511059504003027
135 Polygon	51	105	950400	2005	511059504002005	Block 2005	G5040	52333	36.6697126	-82.95211	511059504002005
136 Polygon	51	105	950100	1089	511059501001089	Block 1089	G5040	52441	36.7645958	-83.0909423	511059501001089
137 Polygon	51	105	950500	4002	511059505004002	Block 4002	G5040	138412	36.6814872	-83.0943179	511059505004002
139 Polygon	51	105	950100	1071	511059501001071	Block 1071	G5040	9581	36.7801759	-83.0598233	511059501001071
140 Polygon	51	105	950100	2123	511059501002123	Block 2123	G5040	23781	36.8012772	-82.9938305	511059501002123

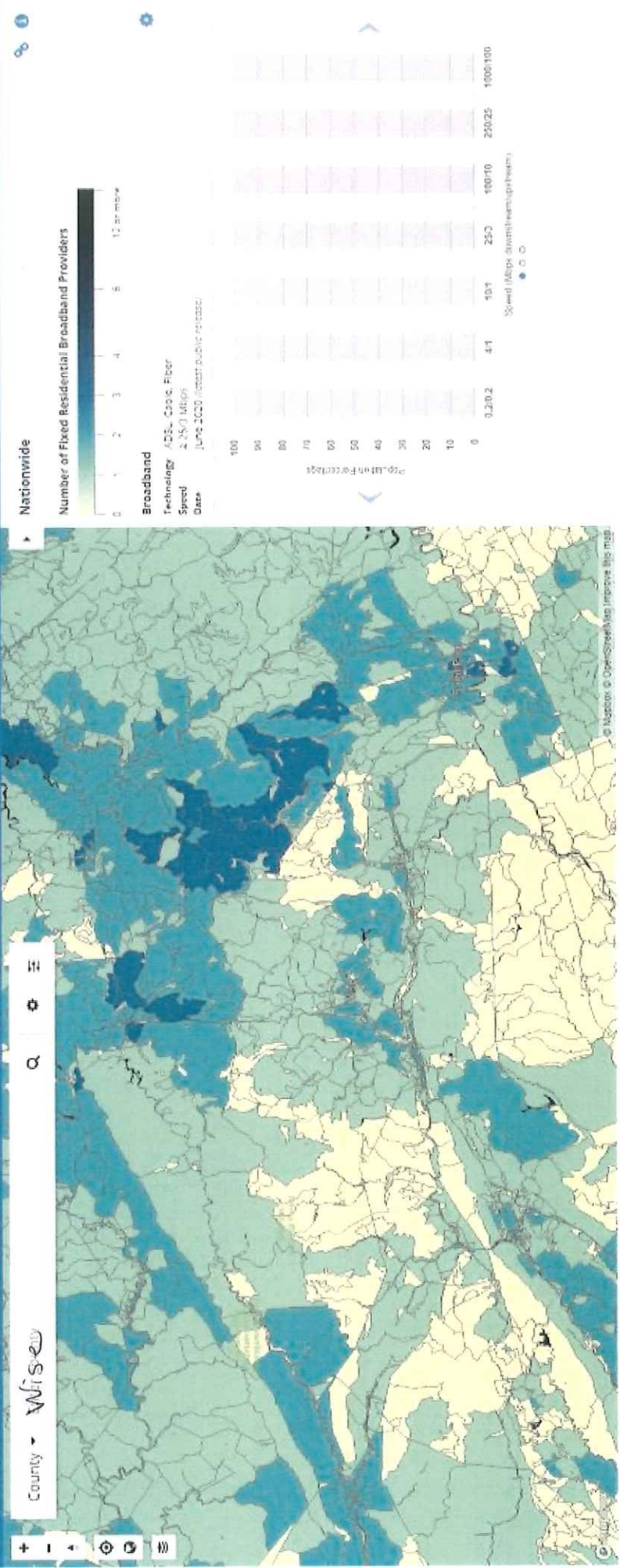
**RDOF Awarded to Scott County Telephone Cooperative (Co-Applicant)**

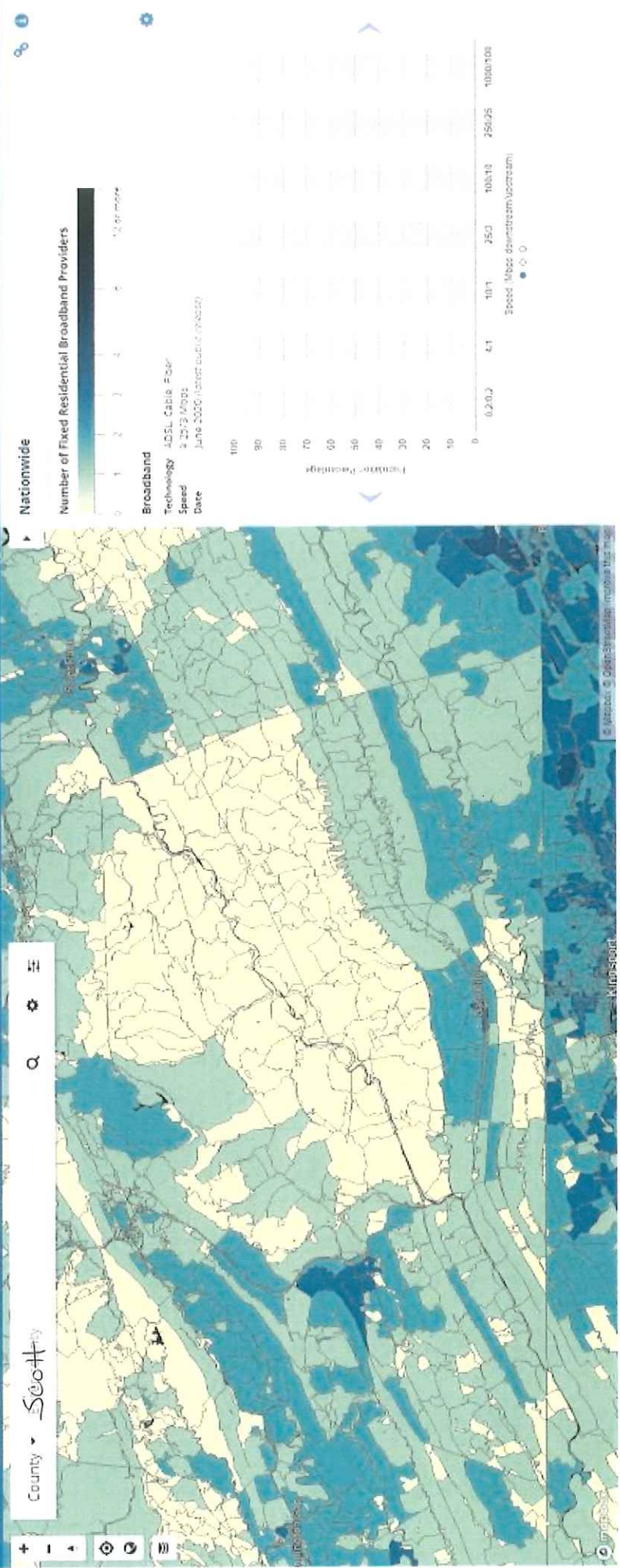
<u>Census ID</u>	<u>State</u>	<u>County</u>	<u>Eligible Locations</u>	<u>Annual Reserve Price</u>	<u>Annual Price per Location</u>	<u>Final Award Annual Amount</u>	<u>Total Award</u>
511690302004 VA	Scott	22	13,731 \$	624.14	8,238.60	82,386.00	
511690306001 VA	Scott	6	643 \$	107.17	385.80	3,858.00	
511690306002 VA	Scott	5	1,192 \$	238.40	715.20	7,152.00	
511690306003 VA	Scott	9	1,280 \$	142.22	768.00	7,680.00	
511690306004 VA	Scott	35	3,268 \$	93.37	1,960.80	19,608.00	
		<b>77</b>	<b>20,114 \$</b>	<b>261.22</b>	<b>12,068.40</b>	<b>120,684.00</b>	
511670303002 VA	Russell	14	5,973 \$	426.64	3,583.80	35,838.00	
511670303003 VA	Russell	8	1,422 \$	177.75	853.20	8,532.00	
		<b>22</b>	<b>7,395 \$</b>	<b>336.14</b>	<b>4,437.00</b>	<b>44,370.00</b>	
511059501001 VA	Lee	58	9,065 \$	156.29	5,439.00	54,390.00	
511059501002 VA	Lee	40	5,107 \$	127.68	3,064.20	30,642.00	
511059501003 VA	Lee	13	6,874 \$	528.77	329.95	3,299.50	
511059501004 VA	Lee	34	5,544 \$	163.06	3,326.40	33,264.00	
511059501005 VA	Lee	17	3,223 \$	189.59	154.70	1,547.00	
511059503001 VA	Lee	4	432 \$	108.00	259.20	2,592.00	
511059503002 VA	Lee	2	289 \$	144.50	173.40	1,734.00	
511059504001 VA	Lee	13	1,681 \$	129.31	1,008.60	10,086.00	
511059504002 VA	Lee	24	3,241 \$	135.04	1,944.60	19,446.00	
511059504003 VA	Lee	29	7,043 \$	242.86	4,225.80	42,258.00	
511059505001 VA	Lee	15	1,822 \$	121.47	1,093.20	10,932.00	
511059505002 VA	Lee	42	4,921 \$	117.17	2,952.60	29,526.00	
511059505003 VA	Lee	6	284 \$	47.33	13.63	136.30	
511059505004 VA	Lee	18	3,928 \$	218.22	188.54	1,885.40	
511059506001 VA	Lee	45	4,543 \$	100.96	218.06	2,180.60	
511059506002 VA	Lee	7	1,135 \$	162.14	681.00	6,810.00	
511059506003 VA	Lee	14	1,387 \$	99.07	66.58	665.80	
		<b>381</b>	<b>60,519 \$</b>	<b>158.84</b>	<b>25,139.46</b>	<b>251,394.60</b>	
<b>Total Virginia</b>		<b>480</b>	<b>88,028 \$</b>	<b>183.39</b>	<b>41,644.86</b>	<b>416,448.60</b>	



470259701002 TN	Claiborne	58	14,561	\$	251.05	698.93	6,989.30
470259706002 TN	Claiborne	71	38,933	\$	548.35	23,749.13	237,491.30
470259707002 TN	Claiborne	4	1,202	\$	300.50	721.20	7,212.00
470259707003 TN	Claiborne	16	1,488	\$	93.00	892.80	8,928.00
470259707004 TN	Claiborne	14	5,428	\$	387.71	260.54	2,605.40
470259708001 TN	Claiborne	43	22,019	\$	512.07	1,056.91	10,569.10
		<b>206</b>	<b>83,631</b>	<b>\$</b>	<b>405.98</b>	<b>27,379.51</b>	<b>273,795.10</b>
470679605001 TN	Hancock	2	304	\$	152.00	182.40	1,824.00
470679606001 TN	Hancock	37	4,652	\$	125.73	223.30	2,233.00
470679606002 TN	Hancock	47	6,057	\$	128.87	290.74	2,907.40
470679606003 TN	Hancock	4	2,357	\$	589.25	1,414.20	14,142.00
		<b>90</b>	<b>13,370</b>	<b>\$</b>	<b>148.56</b>	<b>2,110.64</b>	<b>21,106.40</b>
470730502001 TN	Hawkins	159	87,051	\$	547.49	870.51	8,705.10
470730504002 TN	Hawkins	189	37,451	\$	198.15	374.51	3,745.10
		<b>348</b>	<b>124,502</b>	<b>\$</b>	<b>357.76</b>	<b>1,245.02</b>	<b>12,450.20</b>
470575001002 TN	Grainger	537	131,431	\$	244.75	1,314.31	13,143.10
		<b>537</b>	<b>131,431</b>	<b>\$</b>	<b>244.75</b>	<b>1,314.31</b>	<b>13,143.10</b>
471730403002 TN	Union	745	188,982	\$	253.67	1,889.82	18,898.20
		<b>745</b>	<b>188,982</b>	<b>\$</b>	<b>253.67</b>	<b>1,889.82</b>	<b>18,898.20</b>
<b>Total Tennessee</b>		<b>1,926</b>	<b>541,916</b>	<b>\$</b>	<b>281.37</b>	<b>33,939.30</b>	<b>339,393.00</b>
<b>Total Awarded</b>		<b>2,406</b>	<b>629,944</b>	<b>\$</b>	<b>261.82</b>	<b>75,584.16</b>	<b>755,841.60</b>







**Broadband Survey by Wise County  
Completed by Thompson & Litton Engineering and Blue Ridge Advisory Services**

Map 1 shows the services providers in the region.

This survey was completed by 680 respondents.

Xfinity is the dominant broadband provider in the region with their service primarily around the population centers in the county. Even though their service extends into some of the rural areas they have trouble providing 25/3 Mbps for 24/7 due to the network design. Of the 680 respondents 510 have Xfinity's service but lie outside the proposed service area and inside the towns we omitted from the proposed service area.

Verizon is the second largest provider of service with 35 responses. They are located throughout but primarily provide broadband service in town. They cannot provide 25/3 Mbps

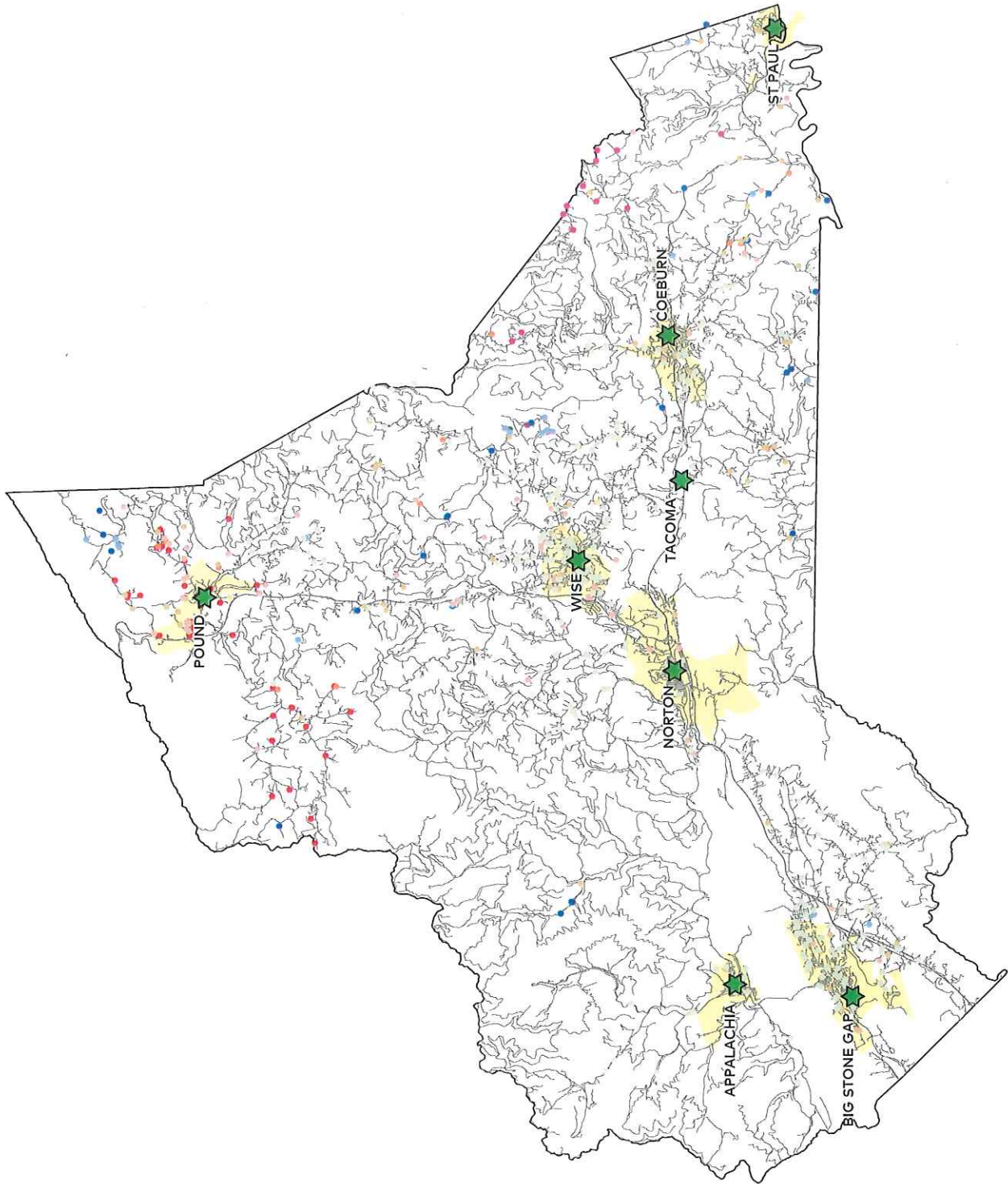
IMC is the third largest provider in Wise County with 30 responses to the survey but their service area lies outside the proposed service area. It is located in a high cost area SCTC will consider in the next round of funding.

SCTC had 10 responses to the survey. That area of Wise County is not included in the proposed grant application area.

Point Broadband has little to none of Broadband service in rural Wise County. Their network is at full capacity. They only had 2 responses on this survey.

Unknown providers 48 responses.

Satellite providers make up 45 responses.



SYMBOL	DESCRIPTION
●	HILCOM NETWORKS
●	HUGHESNET
●	MCVY
●	POINT TOPOINT
●	SCTV
●	SHENTEL
●	STARLINK
●	VERIZON
●	VASAT
●	XFINITY/CORCAST
●	OTHER
★	UNKNOWN
■	WISE COUNTY PLACES
■	WISE COUNTY ROADS
■	WISE COUNTY TOWNS
■	WISE COUNTY



THOMPSON  
& LITTON

**Broadband Survey by Wise County  
Completed by Thompson & Litton Engineering and Blue Ridge Advisory Services**

Map 2 shows the bandwidth speeds available.

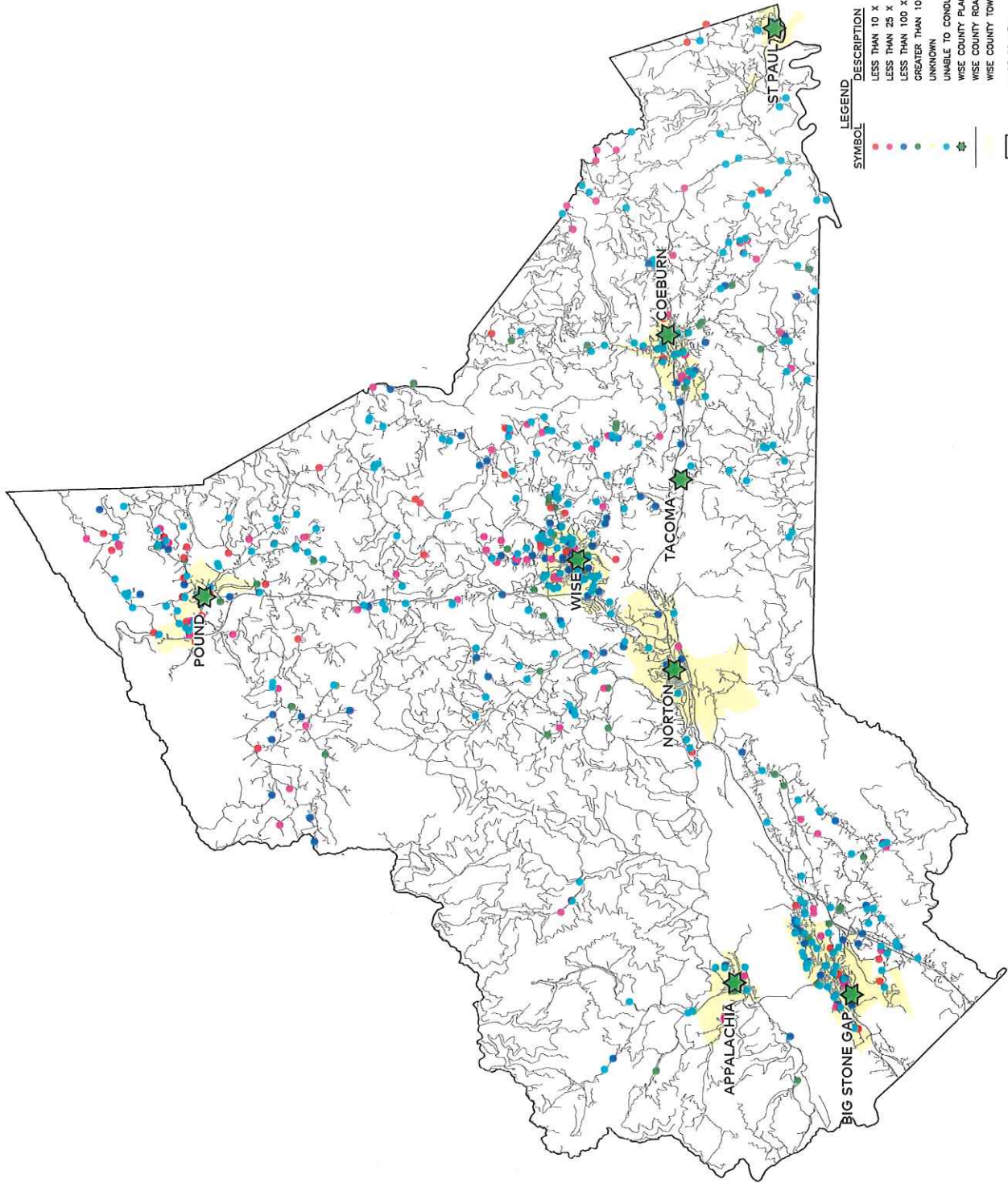
Approximately 90 green and purple dots of the 680 surveyed can get above 25/3 Mbps. That is a 13% of the total survey. As you can see the majority of the green and purple dots are located around the towns or more populated areas which are not included in the proposed grant area.

Approximately 30 surveys had a broadband service less than 10/1 Mbps which are the red dots.

Approximately 25 surveys have less than 25/3 Mbps which are the pink dots.

The remaining surveyors said they couldn't run a speed test but had slower speeds.

This survey of 680 residence which includes the all Wise County says that only 13% have broadband service above 25/3 Mbps.



SYMBOL	DESCRIPTION
Red dot	LESS THAN 10 X 1
Blue dot	LESS THAN 25 X 3, BUT GREATER THAN 10 X 1
Green dot	LESS THAN 100 X 10, BUT GREATER THAN 25 X 3
Yellow dot	GREATER THAN 100 X 10
Green star	UNKNOWN
Green star	UNABLE TO CONDUCT SPEED TEST
Green star	WISE COUNTY PLACES
Green star	WISE COUNTY ROADS
Green star	WISE COUNTY TOWNS
Green star	WISE COUNTY



THOMPSON  
& LITTON



Most Recent Service Requests from Town Hall Meetings - Union High School 8/20/21 and Thomas Walker High School 8/24/21 - (Lee County)

			HOME	CELL
MONICA DAWN WRIGHT	648 NEW RD	ROSE HILL VA 24281	276-445-8452	865-585-3373
MONICA DAWN WRIGHT (BUSINESS)	208 NEW RD	ROSE HILL VA 24281	276-445-8452	865-585-3373
BRIAN NEFF	508 FLANARY BRIDGE RD		276-393-9710	
DAVID COMBS	2230 FLATWOODS RD		276-337-0583	
MARCUM OIL COMPANY	27288 WILDERNESS RD		276-346-4328	
WAYNE MARCUM	1579 FLATWOODS RD		276-393-6250	
ROBERT OSBORNE	2393 MCCLURE CHAPEL RD	ROSE HILL VA 24281	276-346-2747	865-556-5723
JIM BOWLING	1446 FROG LEVEL RD	EWING VA 24248	606-269-3130	
DEBORAH ELLIS	1855 FROG LEVEL RD	EWING VA 24248	276-619-1925	
DONNIE MCAFFEE	BAILEYTOWN RD	EWING VA 24248	423-300-0591	FARMHOUSE
JESSICA ELDRIDGE	167 BRIARCLIFF DR	EWING VA 24248	606-269-7069	
MICHELE BYINGTON	144 ERVIN HILL DR	ROSE HILL VA 24281	276-207-1416	LEE CO TEACHER
BETTY BAILEY	1581 BAILEYTOWN RD	EWING VA 24248	865-585-5220	
LAUREN PRIDEMORE	289 BRIARCLIFF DR	EWING VA 24248	606-499-0400	
SHERRY LOWE	146 BOONE TABERNACLE RD	EWING VA 24248	276-870-9214	OFF SANDCAVE
ANDREA LOWE	146 BOONE TABERNACLE RD	EWING VA 24248	276-870-2746	OFF SANDCAVE
MARY LONG	? ROWLETT TRAIL	EWING VA 24248	865-276-1612	
JAY & JOYCE ROUSE	661 BLUE HOLLOW RD	ROSE HILL VA 24281	276-870-7540	276-870-7543
EMILY MILLER	4106 OLD NURSERY RD	ROSE HILL VA 24281	276-870-4107	
TAMMIE & TIM CHARLES	351 CREEKWOOD DR	EWING VA 24248	734-679-5551	
JERALD ROBERTS	640 BEAVER BROOK RD	EWING VA 24248	276-861-3872	
BETH MINTON	286 CREEKWOOD DR	EWING VA 24248	865-585-8843	
HEATHER HUNLEY	1314 MOUNTAIN SPRINGS RD	ROSE HILL VA 24281	865-585-2647	
CINDY WOOD	8870 WILDERNESS RD (LOT #?)	EWING VA 24248	706-781-7991	NEW RESIDENCE
LARRY & GILDA NEFF	15063 WILDERNESS RD	ROSE HILL VA 24281	276-445-5998	865-585-7396
CLESTON & OTHELLA PITTMAN	2205 PLEASANT VIEW RD	ROSE HILL VA 24281	276-445-4008	
WADE WILSON	1711 KESTERSON RD	EWING VA 24248	276-445-4683	HAS CHILDREN IN SCHOOL
KRISTY PAYNE KING	175 ELY HOLLOW RD	EWING VA 24248	423-526-8331	
LINDA QUILLEN	1967 KESTERSON RD	EWING VA 24248	276-445-4457	276-445-4083
REBECCA ROE	118 MARSON QUILLEN RD	EWING VA 24248	276-870-4919	
CARL & DONNA CAPPS	250 MARSON QUILLEN RD	EWING VA 24248	276-445-4475	
LYNN & RICHARD METCALFE	1618 BAILEYTOWN RD	EWING VA 24248	865-804-0279	
BRENDA BAILEY	1420 BAILEYTOWN RD	EWING VA 24248	865-585-2083	
LAWRENCE TAYLOR	756 SPEAKS BRANCH RD	ROSE HILL VA 24281	606-670-7772	
TORI AYERS	262 RED CLOVER LOOP	EWING VA 24248	606-670-5008	
TODD LEE	664 YELLOW BRANCH RD	ROSE HILL VA 24281	423-851-2274	423-851-2266
KATHLEEN MADDLE	2109 BALLS CHAPEL RD	ROSE HILL VA 24281	423-851-2266	
DAVID & ANN GRAHAM	663 RED FLETCHER RD	JONESVILLE, VA 24263	276-870-1702 (ANN)	276-298-5787 (DAVID)
LARRY MAGGARD	502 RIDGECREST RD	ROSE HILL VA 24281	276-445-4222	
GEORGE HENSLEY	398 MINK HOLLER RD	EWING VA 24248	276-445-4081	OFF KESTERSON RD
GEORGE HENSLEY	UNKNOWN ADDY - TRAILER	EWING VA 24248	276-445-4081	MR HENSLEY'S TRAILER NEEDS SERVICE

BETSY CAVIN	559 EWING CEMETERY RD	EWING VA 24248	865-585-0456	
SANDY O'DELL/STELLA SUTPHIN	348 BETHANY RD	EWING VA 24248	276-870-6903	825-850-0790 (ANNE)
ANNE & ED HAGAN	1060 DR THOMAS WALKER RD	EWING VA 24248	828-850-3865 (ED)	
LINDA BLAIR	330 VINEYARD RD	ROSE HILL VA 24281	276-346-6025	
MARIE NEFF	422 DR THOMAS WALKER RD	EWING VA 24248	276-445-4332	
AMANDA BLAIR	500 VINEYARD RD	ROSE HILL VA 24281	865-352-9232	
JOANNE HARDING	1065 CEDAR HILL CHURCH RD	JONESVILLE, VA 24263	276-202-1198	
SHRILEY MARSEE	123 STOCKYARD DR	EWING VA 24248	865-585-4355	
SHAIN TAYLOR	336 THISTLE DR	EWING VA 24248	8656-279-4259	
LAUREN BRYANT	320 THISTLE DR	EWING VA 24248	276-275-9414	
ZANE KOENIG	302 MCLIN HOLLOW RD	ROSE HILL VA 24281	865-585-8096	
SHERRY HAYTON	227 VERLIN HENSELY	EWING VA 24248	276-445-4232	
VANESSA MAVES	418 BETHANY RD	EWING VA 24248	865-585-1549	BEEN TOLD SHES IN VATI GRANT AREA
MEGAN & SHANE CARR	626 FROG LEVEL RD	EWING VA 24248	606-213-7290	
WALTER P BROOKS	223 CALWAY DR		865-585-2830	RENTS TO STUDENTS
WALTER P BROOKS	407 SAND CAVE		865-585-2830	RENTS TO STUDENTS
WALTER P BROOKS	172 QUARTERHORSE	EWING VA 24248	865-585-2830	RENTS TO STUDENTS
AARON THOMAS	290 DEWBERRY DR	EWING VA 24248	276-346-6732 (KAIA CHEEKS #)	RENTS TO STUDENTS/AARON IS STUDENT
KAIA DORMAN CHEEK	169 THISTLE DR	EWING VA 24248	276-346-6732	
RICK & HEATHER KOENIG	942 MCLIN HOLLOW RD	ROSE HILL VA 24281	276-445-1199	
DOROTHY PITTMAN	1250 MCLIN HOLLOW RD	ROSE HILL VA 24281	865-585-5937	
HAROLD K HILL	938 MCLIN HOLLOW RD	ROSE HILL VA 24281	276-445-4767	
JAMES & CAROLYN LITRELL	263 BETHANY RD	EWING VA 24248	276-445-4652	STUDENTS IN HOME
LOUIE TURNER	346 WARRIORS PATH RD	EWING VA 24248	276-861-5523	STUDENT
JOSEPH HENSLEY	1323 KESTERSON RD	EWING VA 24248	276-861-4121	SCHOOL AGE CHILD IN HOME
CARRIE PAYNE	219 ELY HOLLOW RD	EWING VA 24248	423-526-8338	(FAXED IN SHEET WEDNESDAY)
CASSANDRA DINGUS	502 CASSANDRA DR	BIG STONE GAP, VA 24219	276-639-0899	(CALLED IN WEDNESDAY)
NORA PENLEY	153 THISTLE DR	EWING VA 24248	865-585-7245	BUSINESS
GLASS MACHINERY	27262 WILDERNESS RD	JONESVILLE, VA 24263	276-346-3467 OR 859-338-8563	SCHOOL AGE CHILD IN HOME
AIREN GLASS	224 DON GLASS RD	JONESVILLE, VA 24263	859-338-8563	SCHOOL AGE CHILD IN HOME
GREG AND REGINA GLASS	471 DUSTY TRAIL	JONESVILLE, VA 24263	276-346-6467	SCHOOL AGE CHILD IN HOME
DUSTY GLASS	210 DUSTY TRAIL	JONESVILLE, VA 24263	276-393-1225	SCHOOL AGE CHILD IN HOME
JESSICA MARCUM	395 RED FLETCHER RD	JONESVILLE, VA 24263	276-393-0926	SCHOOL AGE CHILD IN HOME
CLYDETTA WOODARD	171 BOONE TABERNACLE RD	EWING VA 24248	423-489-1314 (SISTER CATHY)	SISTER CATHY ADDED HER TO LIST
CATHY SMITH	167 BOONE TABERNACLE RD	EWING VA 24248	423-489-1314	SALES LEAD 3633-VATI 2 GRANT CALLED IN
CATHY SMITH	205 BOONE TABERNACLE RD	EWING VA 24248	423-489-1314	CALLED IN 8/26
JOHN MIELE	375 CHEROKEE HILLS LN	EWING VA 24248	229-412-5028	CALLED IN 8/26
BRITNEY BLAIR	8956 WILDERNESS RD	EWING VA 24248	904-568-0080	CALLED IN 8/27
JOSEPH WILSON	1802 KESTERSON RD	EWING VA 24248	865-352-4540	CALLED IN 8/27
JASMINE THOMAS	217 RED CLOVER LOOP	EWING VA 24248	606-670-7952	CALLED IN 8/27
THELMA PARKS	246 BEN LAWSON DR	PENNINGTON GAP VA	276 275 8756	PER MATT 9/7
Heather Humley	1314 Mountain Springs Rd	ROSE HILL VA 24281	865-585-2647	PER MATT 9/2
Jessica Long	975 Mountain Springs Rd	ROSE HILL VA 24281	606-670-9085	PER MATT 9/2

Teresa Long  
Lisa Marcum  
Chelsey Partin

2046 Mountain Springs Rd  
950 Mountain Springs Rd  
387 Mountain Springs Rd

ROSE HILL VA 24281  
ROSE HILL VA 24281  
ROSE HILL VA 24281

276-445-5808  
423-300-8908  
276-870-6720

PER MATT 9/2  
PER MATT 9/2  
PER MATT 9/2

<u>ID</u>	<u>Name (Service Requests - Lee Co)</u>	<u>LOCATION</u>	<u>Service Address</u>	<u>Phone Number</u>	<u>COUNTY</u>
422	Lane, Michael	49123	444 ENDLESS VIEW TRAIL	423-557-3672	1
437	Laster, Jason & Amanda	46651	4238 KANE GAP RD	276-337-6777	1
445	Hale, Jimmy & Blondell, Dana	17595	10080 US HIGHWAY 421	276-546-9865	1
449	Sheets, Linda & Smith, Virginia	22757	10119 US HIGHWAY 421	423-361-4956	1
456	Lambdin, Paul & Margaret	37521	755 MOORE HOLLOW DR	276-861-4027	1
460	Early, Daniel & Connie	22288	1793 KANE GAP RD	423-306-1233	1
470	Greene, Glenda & Castle, John	29417	369 BELGIUM HOLLOW RD	276-546-2129	1
475	Seals, Kayla & Slemplynn	46325	549 BELGIUM HOLLOW RD	276-445-1098	1
478	Waddell, Michael & Elizabeth	37520	155 SHULAR DR	276-219-2263	1
479	Wells, Holdon, Teresa	46209	267 THREE THYME DR	276-219-9990	1
480	Tucker, Whitney	17894	150 HAINES WAY DR - HOUSE	276-275-1440	1
481	Jackson, Jackie & Lawanna	19249	227 PINE HILL DR	276-546-6113	1
485	Skidmore, Joyce	43970	210 ALLEY WAY DR	276-346-3334	1
486	Willis, Linda	24862	420 RASNIC HOLLOW RD	276-546-4155	1
487	Tribble, Margaret	35372	1108 CABIN HOLLOW ROAD	276-594-0566	1
488	McElroy, Danny	16894	1004 RASNIC HOLLOW RD	276-546-3013	1
490	Chester, Renee & Lamb, Jo Ann	38533	507 CEDAR HILL RD	276-346-0224	1
492	Shoemaker, James	2734	5205 JASPER RD	276-594-6058	1
493	Moore, Holly & Taylor, Tyler	2545	3659 MIDDLE WALLENS CREEK RD	276-639-0619	1
494	Robinette, Wilma	35405	3338 DRY CREEK RD	423-297-3131	1
499	Barnette, Michael & Brittany	48980	4830 KANE GAP RD	276-275-3722	1
501	Carrico, Sheila	43010	2981 JASPER RD	276-690-5771	1
504	Hughes, Carolyn	22970	1122 KANE GAP RD	276-594-5625	1
505	Cook, William	30743	559 TANBARK RIDGE RD	276-346-2291	1
534	Harliss, Arville & Amy	19369	406 MAUDE HARLESS RD	276-701-6302	1
544	Cope, Nathan	7385	1516 CEDAR HILL CHURCH RD	276-791-2407	1
556	Napier, Anna L	4180	10028 US HIGHWAY 421	276-546-4769	1
557	Large, Tammy	19872	9980 US HIGHWAY 421	276-220-2195	1
558	Dowell, Harold & Agnes	4175	10012 US HIGHWAY 421	276-546-1122	1
567	Green, Jeffrey	4077	11807 US HWY 421	276-708-1400	1
588	Neff, Tracy	22293	1663 CURT RUSSELL RD	276-870-8147	1
599	Noah, Justin	48398	414 ELDER GROVE RD	423-259-0904	1
603	Cook, Mason	49077	539 TANBARK RIDGE RD	276-832-1941	1

609	Cooper, Thomas	4154	455 BELGIUM HOLLOW RD	276-546-1586	1
618	Smith, Robert	9570	127 SAPPHERE DR	276-445-5630	1
629	Salisbury, Mike & Megan	3324	1174 LYNN FLANARY RD	276-832-1683	1
635	Robbins, Virgil	49120	2236 OLD WOODWAY RD	276-393-7144	1
650	Metcalfe, Elizabeth	7374	321 CEDAR HILL CHURCH RD	865-804-0157	1
666	King, Kristy	42370	175 ELY HOLLOW RD	423-526-8331	1
669	Payne, Carrie	29454	219 ELY HOLLOW RD	423-526-8338	1
671	Giles, Robert	36351	196 WINEBERRY TRAIL	865-585-8087	1
672	Roddenberry, Ken & Josephine	42350	1707 SHANNON EVANS DR	276-275-4143	1
673	Lowe, Wilma	7589	245 TUCKER LOWE RD	865-585-2594	1
675	Long, Donald	7618	109 MOLES HILL DR	865-585-2595	1
676	Hall, Robin	6120	4762 SUGAR RUN RD	276-832-2168	1
683	Lawson, Tony	24859	757 RED FLETCHER RD	865-585-2594	1
690	Ledford, Rhonda	29364	4673 HUBBARD SPRINGS RD	276-346-6045	1
701	Hoskins, Ellis	48990	650 WILLOW TREE RD	606-269-2937	1
702	Mullins, Stephen	30731	261 HORSE FARM TRL	276-346-0483	1
703	Curtis, Hall	4153	419 BELGIUM HOLLOW RD	276-346-7418	1
710	Hartsock, Ricky	953	1099 ROLLERS CHAPEL RD	276-346-6925	1
725	Robinson, Louise	2085	222 ASBURY RD	276-299-3450	1
729	Herrrell, Brandi	6133	2828 CAMPGROUND RD	276-393-4123	1
740	Chadwell, Tabbitha	46307	260 BLACKBERRY HOLLOW RD	276-206-7794	1
757	Collins, Dana	47186	542 AUSTIN DR	865-585-3972	1
760	Cope, Debra	19542	157 GEORGE JONES RD	276-220-3701	1
763	Lowe, Christy	19791	960 PATCHWORK RD	606-670-4983	1
764	Middleton, Steve	17159	255 BLUEBERRY HILL DR	276-299-2747	1
785	Moore, W N	2763	366 GREEN HOUSE RD	276-594-4150	1
788	Carmony, Bruce	24064	HOUSE#2/ 312 MATCHSTICK DR	276-346-1553	1
791	Ardridge, Randall	30746	1120 COONSHINE DR	276-275-3020	1
796	Fortner, Mary	30487	111 SHUPE DR	276-346-6242	1
803	Rivers, Katherin	30452	528 OLD GROVE TRL	865-585-4828	1
834	Brewer, Jenny	22589	20589 WILDERNESS RD LOT 103	606-670-8196	1
836	Dean, Chuck & Shelia	24147	12735 US HIGHWAY 421	276-365-5840	1
840	Cantor, Vickie	30474	2384 DRY CREEK RD	276-210-6547	1
841	Oaks, Sonny	1350	5181 US HIGHWAY 421	276-546-1353	1

842	Wood, Edna	19549	292 DRY CREEK RD	276-639-7149	1
844	Rutherford, Amanda	44955	349 KELLY COOMER RD	276-275-3338	1
846	Carmony, Bruce & Lorane	6001	312 MATCHSTICK DR	276-346-1553	1
853	Harris, Chaston	42334	281 CHASTIN DR	276-275-1732	1
856	Sturgill, Kimberly	35583	183 HOWARD PETERS DR	276-220-7823	1
860	Wiggins, Sandra	1874	469 KELLY COOMER RD	276-365-4361	1
865	Cook, Lance	49190	545 TANBARK RIDGE RD	276-346-7299	1
877	Jones, Mitzl	48422	1179 TANBARK RIDGE RD	276-346-1731	1
880	Robbins, David	17165	2745 YELLOW BRANCH RD	276-445-6455	1
881	Whisman, Betty Jo	7364	1549 KINSER HOLLOW RD	276-832-1489	1
887	Osborne, Robert	19085	419 DAN FISHER HOLLOW RD	276-295-0027	1
892	Honeycutt, Brandy	2086	170 HONEYCUTT DR	276-346-0476	1
897	Miles, Allison	22301	934 OLD FRIENDSHIP RD	276-275-6334	1
900	Crabtree, Franklin	1530	4990 OLD WOODWAY RD	276-639-8446	1
903	Edens, Jared	19851	429 EDGAR PAUL DR	276-952-5824	1
911	Howard, Chris & Andrea	38519	672 CEDAR HILL RD	276-275-0168	1
914	Price, Lavonna	42755	484 BUTTERSCOTCH DR	276-393-6416	1
917	Warf, Vickie	12954	117 GREYSTONE DR	276-445-4496	1
922	Welch, Fayne & Mary	7357	742 CEDAR HILL RD	276-346-3621	1
931	Wuerdeman, Carmen & Brent	17611	154 JOE ELY DR	276-832-1221	1
933	Mitchell, Misty	39316	2462 SCOTT HOLLOW RD	606-670-2684	1
934	Johnson, Amanda	50112	1826 CARTER CAVE RD	276-299-3284	1
935	Bach, Donna	22297	3879 SUGAR RUN RD	276-346-6205	1
941	Wilder, Mary	47123	865 JOE MOORE RD	276-346-6792	1
981	Saylor, Dannie and Tonya	39229	316 SAYLOR RIDGE DR	276-445-4097	1
988	Hounshell, Walter	37059	2185 VAN HUSS RD	276-445-4756	1
989	Smith, Audrey	30339	3450 OLD FRIENDSHIP RD	276-346-1714	1
1011	Stapleton, Brittany	32873	228 ROCKWOOD AVE	276-275-6518	1
1014	Sutphin, Wayne / Lanna Kay	37530	3787 SUGAR RUN RD	276-393-6714	1
1020	Smith, Robert	4598	191 DEWEY ROSE DR	276-565-0681	1
1031	Diffenderfer, Sheila	22010	545 SANDY RIDGE RD	276-275-9124	1
1032	Smith, Robin	36358	196 DEWEY ROSE DR	276-524-1668	1
1045	Fritz, Kristie	29532	405 SEEDLING DR	276-870-8387	1
1046	Parsons, Michael	6006	584 HUBBARD CHURCH RD	276-832-1802	1

1048	Johnson, Kami		35475	313 MINTON DR	276-219-8034	1
1063	Fuson, Naomi		49169	1152 BLUE HOLLOW RD	423-259-0411	1
1074	Garrett, Billy		41297	685 DEAN RD	423-782-7089	1
1075	Southard, Mary		24577	131 ROGER KING DR	276-220-0732	1
1079	White, Danielle		6500	2073 BEECH GROVE RD	276-832-1929	1
1080	Milam, Sheena		22177	235 POND VIEW DR	276-346-7598	1
1081	Surber, Barbara		29421	1651 STATE ROUTE 70	276-346-3565	1
1092	Zion, John		39382	355 JOHN ZION RD	276-346-0462	1
1114	Wilder, Penny		22193	336 HERRELL SUBDIVISION RD	276-275-4351	1
1123	Hill, Jackie		12936	570 MACHINE BRANCH RD	865-278-7350	1
1135	Kidwell, Mike		42035	903 TROJAN DR	865-585-3838	1
1137	Kozak, Haley		7562	185 BEATTY RD	734-621-2708	1
1150	Marcum, Gladys		9580	615 DEAN RD	423-300-1350	1
1158	Baker, Floyd		2438	119 BAKER RIDGE RD	276-346-0107	1
1164	Hensley, David		30212	1485 KESTERSON RD	276-861-3003	1
1183	Mills, Kenneth		16200	947 MARSON QUILLEN RD	276-445-5824	1
1199	Middleton, Brian		22887	13059 US HIGHWAY 421	423-579-0265	1
1207	Robbins, Roslyne		40232	240 OLD HOMEPLACE DR	276-393-7364	1
1215	Garson, Jennifer		6059	996 HUBBARD SPRINGS RD	561-371-6315	1
1218	Ely, Corey		30374	1490 BELGIUM HOLLOW RD	276-393-1314	1
1219	Sutton, Darlene		4093	629 ELY PUCKETTS CREEK RD	276-546-3203	1
1228	Grable, Betty		19115	439 OVERVIEW LOOP	423-973-1333	1
1237	Bledsoe, Kelli		50288	234 LASTER RD	276-393-9747	1
1241	Hensley, Elizabeth		24306	971 OLD NURSERY RD	865-585-1014	1
1247	Hill, Jonathan		2115	2309 CARTER CAVE RD	276-220-2040	1
1252	Blair, Amanda		19993	330 VINEYARD RD	276-346-6025	1
1264	Williams, Joyce		9594	279 SHADY VALLEY RD	276-445-5598	1
1266	Bledsoe, Theresa		46322	4400 MIDDLE WALLENS CREEK RD	423-736-9791	1
1276	Maggard, Karen		38978	206 ARROWWOOD DR	276-220-4169	1
1290	Michael, Harold		7550	6745 DR THOMAS WALKER RD	865-585-2265	1
1297	Davis, Maritta		19112	880 HICKORY FLATS RD	423-480-3074	1
1299	Whitt, Perry		17604	1835 BLUE HOLLOW RD	276-445-4604	1
1300	Green, Debra		9705	2089 MARTINS CREEK RD	865-585-2215	1
1303	Owens, Chanda		19088	108 Isaacs Dr	276-445-4066	1

1317	White, Shirley	40243	214 FREEMAN HOLLOW RD	276-639-3489	1
1318	Gilbert, Paul	41446	347 ROLLING HILLS DR	423-851-4348	1
1321	Snodgrass, John	24116	530 DOC OLINGER RD	276-275-4695	1
1323	Hubbard, Amy	42979	359 BELLA VIEW DR BIG STONE	276-393-3241	1
1324	Howard, Timothy	48902	883 DOC OLINGER RD	276-393-9925	1
1326	Mcmurry, David	7664	599 BLUE HOLLOW RD	606-670-1097	1
1329	Nicley, Scottie	43484	266 GREYSTON DR	423-285-2918	1
1348	Langley, Lester	39180	467 ISOPOD RD	276-299-2772	1
1349	Horton, Telitha	44876	294 CABIN DR	276-393-9617	1
1353	Cope, Sherry	7384	1746 CEDAR HILL CHURCH RD	276-219-0360	1
1355	Houston, Monroe	43629	702 DOC OLINGER RD	276-523-0498	1
1357	Fee, Jessica	50192	820 OLD FRIENDSHIP RD	276-219-6239	1
1373	Smith, Jessica	7528	6939 DR THOMAS WALKER RD	606-670-0984	1
1375	Russell, Robert	5971	305 TWO LAMBS DR	276-832-2155	1
1384	Lovoi, Steve	44495	1639 CARTER CAVE RD	772-285-1658	1
1390	Martin, Robert	22901	2351 HOLINESS HOLLOW	865-585-3157	1
1393	Tolliver, Mark	29520	354 CLAYTON MYERS RD	276-393-5671	1
1394	Orr, David	22662	349 CLAYTON MYERS RD	276-708-5870	1
1395	Huff, Phillip	42348	295 HUFF CABIN DR	276-546-4192	1
1397	Orr, Clarence	1220	444 HORSESHOE BEND RD	276-639-1060	1
1401	Gregory, Judy	8443	2188 OLD NURSERY RD	865-585-4122	1
1402	Perkins, Danny	7996	1170 MARTIN WOLF RD	276-346-7661	1
1403	Waddell, Ronnie	22195	105 SHULAR DR	276-346-6652	1
1415	Marcum, Steven	39236	311 WISHING WELL TRL	276-220-5611	1
1422	Harber, Roger Bryan	6013	304 MOONLITE DR	276-298-5161	1
1423	Owens, Brian	1312	209 MYERS RD	276-275-4050	1
1426	Cope, Wilma	6507	2802 BEECH GROVE RD	276-346-3436	1
1427	Hobbs, Charles	39192	1105 COX RD	276-393-3638	1
1428	Lamb, Joanne	38160	449 CEDAR HILL RD	276-346-0224	1
1443	Pacholewski, Roger	47524	2606 SANDY RIDGE RD	276-346-7345	1
1445	Miller, Lenor	30409	171 DAISY DR	775-513-5305	1
1448	Necessary, Rebecca	8422	1014 YELLOW BRANCH RD	276-346-7411	1
1449	Harris, Kay	30130	450 HARRIS HILL RD	276-393-1503	1
1458	Marcum, Regina	39167	599 WHITE PINES DR	276-220-7117	1



1481	Franklin, Teresa	19304	2512 MAPLE HILL RD	276-393-3864	1
1482	Franklin, Josh	6346	2549 MAPLE HILL RD	276-393-3864	1
1491	D'Agostino Shawna	7560	156 BEATTY RD	606-449-0285	1
1496	Ruth, Joni	48438	1698 RIDGEVIEW RD	276-220-5603	1
1497	Gibson, Jerry L JR.	6122	4490 SUGAR RUN RD	276-708-5377	1
1502	Holmes, Jane	35388	366 SHADY RD	606-670-5840	1
1512	Hatfield, Jennifer	6622	7232 FLATWOODS RD	276-861-4561	1
1513	Crutchfield, Angela	10542	3217 HOLINESS HOLLOW	276-445-4948	1
1515	Nida, Gloria	32928	3303 MARTINS CREEK RD	276-445-8481	1
1521	Davis, Betty	42331	301 DAVIS DR	276-546-0939	1
1529	Lambert, William	1018	195 CAPITOL RD	276-219-3890	1
1576	Byington, Heather	2635	1233 OLD RIDGE RD	276-220-8620	1
1585	Flannary, Carl	37543	615 DRYDEN HEIGHTS DR	276-546-5086	1
1594	Shuler, Candice	42421	328 Countryside DR	276-219-4459	1
1595	Golden, April	44872	1761 Homeplace RD	606-670-9757	1
1611	Moore, William	2448	936 THUNDER RD	423-557-4102	1
1628	Moore, Sue	30755	649 OLD MULBERRY RD	276-346-3374	1
1633	Hall, Dorothy	1577	210 MURPHY HOBBS RD	276-275-4455	1
1635	Johnson, Michael	3141	2825 FLOWER GAP RD	276-346-3899	1
1646	Marcum, Amanda	1693	1541 OLD WOODWAY RD	276-345-2603	1
1663	Hillman, Haley & Early, David	19554	673 KANE GAP RD	276-690-0873	1
1674	Shuler, Ava	31071	213 ELY TOWN RD	276-546-1820	1
1685	Stapleton, Valerie	43044	270 COUNTRYSIDE DR	276-870-2421	1
1690	Jenkins, Dorris	976	907 TANBARK RIDGE RD	276-346-3486	1
1721	Mullins, Betty	22984	2360 MIDDLE WALLENS CREEK	276-546-3662	1
1728	Robbins, Joann	29382	683 ROBBINS VALLEY DR	276-546-2743	1
1745	Reed, Gidget	38536	214 CRIDER DR	276-594-1549	1
1751	Calfee, Isaac	42601	333 SNOWBALL DR	423-231-8762	1
1768	Ely, Thomas	43950	377 MIRACLE LANE TRL	276-546-4442	1
1857	Saylor, Maurice	42973	2753 OLD NURSERY RD	703-926-3260	1
1868	Rorrer, Anthony	37020	3315 OLD FRIENDSHIP RD	276-639-1412	1
1886	Parsons, Debra	30143	264 LITTLE HICKORY LN	276-346-3919	1
1887	Parsons Used Cars	24895	27147 WILDERNESS RD	276-346-0032	1
1894	Clawson, Michael	40882	2022 CLAWSON RD	276-708-1966	1

1904	Willis, Ben	7309	945 RED FLETCHER RD	276-346-0292	1
1906	Willis, Ken	22400	308 BARTH DR	276-346-1988	1
1916	Seiber, Jacob	36304	181 DUNCAN DR	276-832-1448	1
1917	Johnson, Joshua	30443	784 RASH HOLLOW RD	276-298-8642	1
1942	Pauley, Patricia	22418	426 POSSUM HOLLOW RD	276-445-3118	1
1987	Hoskins, Crystal	47565	624 DEAN RD	276-275-5978	1
1990	Lowe, Jimmy	7598	497 TUCKER LOWE RD	865-585-2594	1
1994	Marcum, Penny	30175	558 WHITE PINES DR	276-346-3434	1
1995	Hounshel, Belinda	12913	124 OLD HOUNSHEL DRIVE	606-670-9281	1
2004	Harber, Noah & Julie	50292	253 Farmall DR	276-207-4006	1
2016	Godlewski, Rochelle	3105	129 Blackwater Rd	843-898-0248	1
2018	Bledsoe, Trinity	22926	809 Tanbark Ridge Rd	276-275-9119	1
2040	Lowe, April / Long, Donald	19024	804 POSSUM HOLLOW RD	276-445-4536	1
2059	Duncan, Bob	1024	503 Duncan Fr	276-346-7664	1
2074	Helton, Amanda	12939	154 Vols Dr	606-499-0228	1
2082	Standifer, Hilda	37083	247 Red Fletcher Rd	276-346-3743	1
2098	Lee, Todd	32860	664 Yellow Branch Rd	423-851-2274	1
2113	Cole, Timothy	19562	255 Dryden Heights Dr	276-690-8686	1
2125	Hornsby, Kristen	50125	270 Austin Dr	606-670-4505	1
2158	Peggs, Timothy	36290	535 Lovelady Gap	276-870-7473	1
2173	Hobbs, Charles	1498	6041 Old Woodway Rd	276-546-3977	1
2176	Stapleton, Allen	38937	502 Holmes Hollow Rd	276-546-1868	1
2179	Hembree, Lorianne	49172	1415 Giles Hollow Rd	276-690-6332	1
2180	Robinson, Ronald / Dean, Amber - Renter	9650	2527 Giles Hollow Rd	606-269-0296	1
2181	Adkins, Brandie	46296	373 Marcum Dr	540-521-0920	1
2182	Messer, Bobby Lynn	9664	224 Haley Rd	606-670-7756	1
2187	Davis, Melissa	50170	382Speaks Branch Rd	606-273-3577	1
2188	Robinson, Gary	12945	308 Daisy Dr	423-489-4135	1
2226	Mozingo, Brenda	39411	1769 Crockett Ridge Rd	276-445-5271	1
2227	Williams, Steve / Jones, Amanda	17150	230 Tulip Dr	865-585-5877	1
2228	Witt, Roy	40678	1669 Crockett Ridge Rd	276-445-5321	1
2235	Eldridge, Gerald	3133	162 Eldridge Hollow Rd	276-364-2139	1
2239	Hounshel, Josh	7693	2156 Pleasant View Rd	276-346-7442	1
2245	Trent, John	29530	7850 Flatwoods Rd	865-585-5083	1

2256	Edwards, Thomas	19816	2436 Cedar Hill Church Rd	276-346-3260	1
2269	Combs, Kenneth	24223	591 Lizzie Minor Rd	276-346-0545	1
2271	Swartz, Sylvia	984	1186 State Route 70	276-254-2466	1
2273	Thomas, Johnny	4361	224 Thomas Hollow Rd	276-298-5244	1
2275	Kinsler, Hannah & Josh	36291	225 Middle Wallens Creek Rd	276-546-4780	1
2284	Parsons, Jackie	42639	315 Middle Wallens Creek Rd	276-298-7302	1
2296	Jones, Reda	18081	2138 Scott Hollow Rd	276-870-3071	1
2305	Clark, Rebecca	3842	123 Oak Hill Dr	276-346-6438	1
2308	Dingus, Rosa	41988	467 Beech Grove Rd	276-346-0534	1
2317	Young, Brianna	32970	359 Long Hollow Church Rd	276-219-3602	1
2322	Underwood, Rebecca	4356	190 Thomas Hollow Rd	276-582-2091	1
2329	Williams, Judy	24496	3053 WARD HILL RD	276-546-5647	1
2336	Light, Marie Amanda	41059	1147 Ridgeview Rd	276-393-3748	1
2339	Allen, Brenda	22642	314 Observation Dr	276-219-8772	1
2354	Anderson, Jewell	32862	1227 Ward Hill Rd	276-546-3168	1
2357	Martin, Donna	1003	172 Mount Pilot Dr	276-346-2755	1
2358	Baumgardner Donnie R	48588	593 SHAVERS FORD RD	276-346-1695	1
2361	Rodriguez, Amanda	12923	839 Trojan Dr	276-220-3879	1
2366	Morris, Richard	4561	323 Gobblers Knob	540-565-1424	1
2385	Webb, Benny	22904	1212 Shavers Ford Rd Lot 219	276-219-5204	1
2416	Doyle, Arianne Irene/Edens, Ricky	2578	645 Middle Wallens Creek Rd	276-210-8952	1
2419	Woodard, Jimmy Ray	4341	5320 State Route 606	276-220-8878	1
2429	Blanton, Terry	4164	10335 US Hwy 421	276-275-0829	1
2436	Smith, Howard D	4076	11801 US Hwy 421- House	276-546-3351	1
2452	Smith, Earl	4492	351 Holms Hollow Rd	276-546-1985	1
2454	Fletcher, James	40234	150 TULIP DR	423-863-0525	1
2457	Clontz, Terry A	32884	5162 STATE ROUTE 606	276-298-8906	1
2458	Petty, Jennifer	43612	516 Robin Trail	865-278-4676	1
2488	Wallen, Billy	19073	289 Billy Wallen Dr	276-346-1600	1
2497	Clark, Christopher Ray	38167	209 EMMIT BARKER DR	276-880-7163	1
2500	Rouse, Jay D.	7663	661 Blue Hollow Rd	276-870-7540	1
2501	Snodgrass, Wendy A	19919	663 Blue Hollow Rd	865-585-5704	1
2513	Aistrop, Barry	43585	122 Emmit Barker Dr	276-546-8753	1
2514	Baumgardner, Louis	3856	1150 Ward Hill Rd	276-546-1378	1

2518	Tignor, Shannon		50269	2286 WARD HILL RD	276-275-6213	1
2525	Isaacs, James D		32863	191 Isaacs Dr	865-585-7627	1
2565	Yeary, Howard M/M		22030	156 Barth Dr	276-346-1075	1
2567	Holmes, Gladys		4488	564 Holmes Hollow Rd	276-546-1326	1
2570	Wells, Gregory D		36265	373 ERIE DR	276-708-6152	1
2574	Creech, Carson		24002	1051 Backvalley Rd	276-346-3810	1
2575	Davidson, James G M/M		2103	1145 Carter Cave Rd	276-346-1539	1
2577	Honeycutt, Jerry M M/M		24504	131 Honeycutt Dr	276-346-1360	1
2578	Tomlinson, Jeremiah		2119	3030 Carter Cave Rd	276-690-6395	1
2580	Hurd, Glenn M/M		22616	3171 Carter Cave Rd	276-346-3811	1
2581	Fannon, James L		2101	845 Carter Cave Rd	276-346-3447	1
2582	Allen, Jarred		2149	2440 AJ Osborne Hwy	276-229-9688	1
2586	Camp, Bertessa		19139	105 Gillenwater Dr	276-639-9321	1
2591	Hobbs, Dana A		2285	1204 Ridgeview Rd	276-594-2791	1
2593	Woodard, Holly		30363	251 Chippenali Dr	276-832-2139	1
2594	Bell, Angel		994	379 Big Boy Garrett Dr	607-321-8976	1
2598	Adams, Dena J		35480	5392 State Route 606	260-388-3621	1
2600	Blanken, Johnnie M/M		2291	517 Overview Loop	276-207-2547	1
2601	Epperly, Rod II		46595	172 Mayberry Dr	276-346-4184	1
2602	Tester, Chris M/M		42960	247 Emmitt Allen Farm Rd	865-279-3005	1
2603	Rasnic, Gregory D		2565	1006 Rasnic Hollow Rd	276-546-6021	1
2604	Waddell, Roger M/M		35472	292 Chastin Dr	276-346-3425	1
2605	Poe, Dane		42615	362 Mayberry Dr	276-346-3051	1
2609	Price, Brittany		4483	434 Shepherd Hill Rd Keokee	276-832-1047	1
2610	Flanary, George G		6324	112 Greenleaf Rd	276-346-1170	1
2613	Roberts, Vickie		48385	4317 OLD FRIENDSHIP RD	276-346-7685	1
2617	Maggard, Rebecca		46662	440 Clawson Rd	276-219-2752	1
2619	Harris, Kay		3765	1101 Clawson Rd	276-346-1972	1
2620	Barnette, Brandi and Ashely		30423	884 Horseshoe Bend Rd	276-393-8209	1
2621	Miller, Emily		8018	4106 Old Nursery Rd	276-870-4107	1
2642	Holdway, Stella		22219	760 Shepherd Hill Rd	276-546-3008	1
2643	Lewis, Douglas G		35470	298 High Country Circle	276-832-1050	1
2650	Delph, Bruce D M/M		7590	262 Delphs Trail/Home	276-445-5647	1
2651	Hurd, Lora		38509	1188 Thunder Rd	276-346-7830	1

2652	Qualls, Ricky		22619	1036 Back Valley Rd	276-346-3808	1
2655	Cox, Tim		24935	8933 Middle Wallens Creek Rd	276-346-2509	1
2677	Yeary, Freda		6037	3784 HUBBARD SPRINGS RD	937-545-5224	1
2685	Herron, Lakeith		42674	115 Flanary Dr	276-832-2185	1
2692	Newman, Billy J		2664	1912 Dry Creek Rd	276-346-7078	1
2695	Helton, Harold/ Williams Norma		24713	299 Howard Peters Dr	276-207-4175	1
2698	Donihe, Everett		1961	254 Doc Olinger Rd	276-523-0123	1
2701	Rasnic, Gary		30479	2006 Dry Creek Rd	276-546-5814	1
2712	Bishop, Chad		42760	192 Little Tree Dr	276-220-2486	1
2714	Grigsby, Kenneth Lee II		48493	24129 Wilderness Rd	276-346-6107	1
2718	Contreras, Dana		39206	171 Gillenwater Dr	276-395-0750	1
2723	Holmes, Lynn		24888	1430 Klondike Rd	276-393-5069	1
2726	Pennington, Jason A		35433	928 Clyde Pearson Rd	276-318-0035	1
2734	Gilbert, Franklin D		47560	1836 Speaks Branch Rd	423-742-0840	1
2738	Zarycki, Leszek		9689	3546 Dean Rd	276-445-4194	1
2739	Pauley, James W M/M		9670	3840 Giles Hollow Rd	276-445-5706	1
2742	Turner, Joe		9693	2899 Dean Rd	276-445-5574	1
2755	Quinley, W J M/M		6341	2400 Maple Hill Rd	276-346-9915	1
2758	Blair, Roy		48483	330 VINEYARD RD	865-352-9232	1
2775	Robbins, Floyd E		47178	686 ROBBINS VALLEY RD	276-546-2743	1
2788	Taylor, Herbert		8048	3592 Boones Path Rd	773-794-9485	1
2791	Elkins, Jane		2500	663 Cam Sam Rd	276-346-2609	1
2811	Moles, Shannon		30478	240 Moles Hill Dr	865-585-3862	1
2812	Robbins, James/ Robbins Donnie		32872	5426 STATE ROUTE 606	276-219-6086	1
2821	Smith, Michael		35445	3453 Middle Wallens Creek Rd	276-298-8713	1
2822	Snodgrass, Robert		4496	525 Shepherd Hill Rd	276-220-7285	1
2823	Ringgold, Tiffany		30702	5259 Flatwoods Rd	276-346-6451	1
2833	Anderson, Randell		6627	311 Bartley Rd	423-427-1334	1
2892	Byars, Harold		19484	422 Murphy Hobbs Rd	276-971-7812	1
2904	Montgomery, Francis		10552	140 Rock Rose Dr	606-896-0788	1
2909	Gilliam, Ruth		24493	52328 Veterans Memorial Hwy	276-523-4272	1
2912	Owens, Danny		30115	1460 Speaks Branch Rd	865-278-7765	1
2916	Brown, Elizabeth		39175	180 Doc Olinger Rd	276-346-7529	1
2925	Koenig, Richard		9646	942 Mcclin Hollow Rd	276-445-1199	1

2926	Disney, Tina	4208	1805 State Route 606	276-832-1151	1
2928	Peace, Timothy	992	598 Old Roop Farm Dr	606-505-0464	1
2940	Clawson, Michael	42023	2020 Clawson Rd	276-275-0250	1
2960	Tomlinson, Sherry	2768	3577 Hickory Hill Rd	423-833-1107	1
2963	Taylor, Larry	8396	145 Winterway Dr	606-670-0471	1
2980	Balser, Cathy	4614	14657 State Route 606	276-565-1727	1
2986	Massey, Steve	29423	140 Pike Rd	276-870-8739	1
3018	Waddell, Kenneth	38933	154 Shular Dr	276-275-1707	1
3020	Phillips, Daniel	30505	155 Sparkey Dr	276-365-5559	1
3021	Waddell, David	1990	1569 Stone Mountain Rd	276-219-1853	1
3026	Gibson, Roy	19228	182 Blue Cedar Dr	276-523-4309	1
3030	Ely, Billy	19269	119 Possum Hollow Rd	276-445-4519	1
3035	Collier, Cheryl	41956	293 Stone Mountain Rd	276-298-8839	1
3045	Woodard, Chad	19899	790 Hurricane Rd	276-219-6204	1
3049	Pyers, Kevin	19941	1263 Stone Mountain Rd	276-523-2725	1
3068	Cottrell, Michael	38907	620 Martin Wolf Rd	276-207-4407	1
3083	Allen, Kenneth	3789	1788 Millers Chapel Rd	276-870-9391	1
3091	Rogers, Toni	47127	374 Double D Trail	765-602-9558	1
3122	Parks, Carla	22258	543 Russell Chapel Rd	276-346-6068	1
3123	Aslup, Mike	43607	441 Winterberry Dr	423-914-0472	1
3128	Adams, Roger	24505	296 Adams Dr	276-346-1040	1
3139	Parrott, Jessica	40628	395 Slempp Rd	276-393-6534	1
3147	Shubert, Danny	46653	680 Shubert Estate TRL	336-338-2145	1
3152	Thompson, David	46261	199 Raleigh Dr	276-206-7670	1
3157	Coomer, Jerry	19203	143 Doc Olinger	276-325-1965	1
3158	Rowles, Kathy	49100	243 Laughing Spot Dr	276-952-5412	1
3163	Tomlinson, Michael	47523	1183 Middle Wallens Creek Rd	276-832-2765	1
3164	Moore, Charles	44465	417 Howard Peters Dr	276-546-3726	1
3175	Allison, Pearlje Jean	7520	19323 Wilderness Rd Lot#159	859-446-8001	1
3205	Parker, Casey / Miles, Jennifer	19322	137 Patchwork Rd	606-302-8537	1
3216	Bailey, John	18004	1152 Blackberry Hollow Rd	865-585-3399	1
3234	Bernhagen, Joel	18003	5239 Kane Gap Rd	276-690-8692	1
3260	Brown, Melissa	22629	392 Low Gap Rd	276-346-7013	1
3264	Moore, Charles	42954	620 Howard Peters Dr	276-639-9059	1

3267	Scott, Oscar	46604	6017 FLATWOODS RD	276-346-6490	1
3269	Woodard, Hershel	39205	782 Joe Moore Rd	276-346-7443	1
3271	Reed, Clyde	19055	169 DOE HAVEN RD	276-346-3726	1
3278	Yeary, Sheila	7532	123 Beauty Rd	865-585-4968	1
3284	Seals, Ashley	5804	6264 Flanary Bridge Rd	276-346-6503	1
3299	Collins, Krista	50120	1123 MIDDLE WALLENS CREEK RD	276-594-6498	1
3328	Mclain, Martin	38153	126 PATCHWORK	865-585-1129	1
3335	Moore, Christy	38904	334 Sanctuary Hill	276-870-2980	1
3344	Huff, Shannon	41405	448 Butterscotch Dr	423-234-4339	1
3352	Matlock, Marvin	8413	2460 Boones Path Rd	276-870-7621	1
3370	Woodard, Jason	22382	374 Lanes Path	276-832-2237	1
3379	Evans, Todd	3325	1296 Lynn Flanary Rd	276-690-5052	1
3385	Dean, Susan	22698	1017 Clear Springs Rd	865-585-7249	1
3395	Robbins, Matthew	2535	4315 Middle Wallens Creek	276-210-7126	1
3401	Visser, Tom	41577	6029 VARDY BLACKWATER RD	423-733-4052	1
3403	Visser, Tom	51049	5598 VARDY BLACKWATER RD	423-733-4052	1
3404	Visser, Tom	45618	6322 VARDY BLACKWATER RD	423-733-4052	1
3405	Visser, Erenst	42751	429 Visser Dr	423-973-3682	1
3406	Bonham, Wayne	41393	540 Sandy Ridge Rd	276-337-1606	1
3410	Pauley, Clark	32952	972 POSSUM HOLLOW	276-445-3118	1
3411	Lawson, Roger B	1570	490 Murphy Hobbs Rd	276-832-2655	1
3412	Martin, Stan	1605	638 POWELL RIVER ROAD	276-546-1480	1
3432	Bailey, Herbert	4079	188 Ivy Berry Dr	276-546-4029	1
3436	Carter, Raymond	24728	117 LADY DR	865-585-3162	1
3461	Lawson, Tommy	3132	1550 Flower Gap Rd	423-300-2205	1
3462	Lawson, Tommy	3131	1467 Flower Gap Rd	276-346-3019	1
3469	Washburn, Glenn	164	1363 Blackwater Rd	276-337-9904	1
3476	Bowlin, Linda	6585	548 Isopod Rd	865-585-2003	1
3507	Farnham, Rebecca	8450	3134 Old Nursery Rd	865-919-7391	1
3531	Pittman, Jimmy	9644	1250 Mclin Hollow Rd	865-585-5838	1
3532	Kegley, Marion/Wynn, John	6339	2039 Maple Hill Rd	276-365-0735	1
3547	Pittman, Cleston	30287	2205 Pleasant View Rd	276-445-4008	1
3554	Clark, Sherman L	39202	47541 Wilderness Rd	276-701-6772	1
3555	Jerrell, Jeffrey	22664	2087 Pleasant View Rd	276-346-7254	1

3572	Matias, Linda	7406	999 Hardys Creek	276-346-7250	1
3574	Catron, Danny	36318	496 Laster Rd	276-791-1866	1
3588	Perry, Janie	19894	164 Charles Shepard Dr	276-219-5402	1
3596	Hager, Josephine M	7521	141 Patchwork Rd	607-684-5946	1
3600	Mullins, Michael	44940	4868 Middle Wallens Creek Rd	276-594-6856	1
3614	Lambert, Brian	2369	1546 Hurricane Bridge Rd	276-346-6730	1
3631	Denson, Billy	17163	3845 Old Nursery Rd	276-445-4102	1
3642	Russell, Gene	4519	214 GENE RUSSELL DR	276-565-6345	1
3647	Eldridge, Bobby	47174	1416 Giles Hollow Rd	865-585-1480	1
3650	Moore, Bryan	38165	503 Joe Moore Rd	276-346-1931	1
3653	Roberts, Earl	29572	789 Vinyard Rd	423-335-1988	1
3659	Montgomery, Charlie	8024	1626 Yellow Branch Rd	276-445-4262	1
3664	Miles, Dustin	22715	757 Dry Creek Rd	276-594-5645	1
3697	Pittman, Gage	22872	10955 Middle Wallens Crk Rd	276-298-7101	1
3706	Wilder, George/ Terina Craft	4579	203 Stoney Lonsome Rd	276-337-0672	1
3707	Langley, Melvin S	19527	3262 Old Nursery Rd	276-445-5858	1
3710	Oconnor, John	38553	1319 Hardys Creek Rd	276-346-3625	1
3727	Burke, Larry G	48381	941 Hayvan Dr	423-571-2363	1
3728	McPherson, Jessica R	43032	455 Mcpherson Farm Dr	276-445-3906	1
3732	Carter, Charles	50385	978 BEECH SPRINGS RD	276-346-0299	1
3736	Taylor, Lawrence E	7645	756 Speaks Branch Rd	606-670-7776	1
3761	Austin, Brian	1692	108 Scooter Dr	540-797-6410	1
3762	Livesay, Sarah	24146	19323 Wilderness Rd Lot#175	276-861-4768	1
3770	Kimberlin, Richard G	29504	156 Pine Cone Rd	276-219-6474	1
3777	Cole, David	24297	162 Savanna Dr	276-698-8857	1
3780	Williams, Joe	17586	718 Millers Chapel Rd	276-393-7908	1
3791	Watson, Rick	7313	270 Don Glass Rd	276-346-3671	1
3806	Daniels, Josh	19683	509 Lizze Minor Rd	276-202-4927	1
3821	Howard, Richard	43680	671 Millers Point Trl	269-420-6437	1
3822	Howard, Richard	50209	811 MILLERS POINT TRL	269-420-6437	1
3824	Beverly, William L	2530	194 Mccan Dr	276-546-1793	1
3826	Jessee, Kellee	1567	1112 Bill Jessee Rd	276-219-2032	1
3827	Jessee, Renee	19915	596 BILL JESSEE RD	276-219-2030	1
3828	Allen, Charles	1565	1249 Bill Jessee Rd	276-346-7991	1



3829	Lawson, Nancy	6022	282 Railroad Dr	276-346-2258	1
3843	Gibson, Margaret	47555	510 MURPHY HOBBS RD	276-275-3062	1
3845	Marcum, Matthew	22217	1395 Chances Chapel Rd	276-708-1213	1
3854	Smith, Rachel/Charles	38223	4656 Shavers Ford Rd	276-275-0517	1
3857	Washburn, Vicki	5968	819 Russell Chapel Rd	276-708-7248	1
3862	Rasnic, Lois J	2741	185 Klondike Rd	276-546-2435	1
3872	Marandola, Jason	2588	370 Mid Wallens Crk Rd #113	276-594-1752	1
3873	Brewer, Robert and Amy	42658	2528 Klondike Rd	276-546-6301	1
3874	Allen, Hannah	42019	169 Hackenberry Dr	276-219-8247	1
3895	Hopkins, Marie	7545	167 Calvary Rd	606-896-0352	1
3911	Langley, Stephanie	45251	1810 Chances Chapel Rd	276-346-3169	1
3913	Cantrell, David	40236	268 WHIPPOORWILL RD	276-870-2527	1
3916	Middleton, Michelle	43979	767 Cox Rd	276-870-6980	1
3918	Staudinger, Donald W	24569	142 Horner Dr	276-393-4782	1
3935	Howard, Chester B	7367	1517 Cedar Hill Rd	276-870-5096	1
3939	Fortner, Betty	7353	145 SHUPE DR	276-346-1674	1
3940	Bradford, Steve and Leslie	29709	299 Eagle Trail Rd	304-701-8078	1
3945	Trad, John and Bigaha	50334	2256 HOME PLACE RD	523-703-1906	1
3970	Sturgill, Betty	49031	237 Lazareth Dr	276-325-1998	1
3989	Kaminski, David	9638	1511 Giles Hollow Rd	239-248-8426	1
3997	Lampen, Barry	49006	2724 Blackwater Rd	276-346-3049	1
4000	Peters, Henry J Jr	1575	559 Henry Peters Dr	276-546-1085	1
4006	Anderson, William	19502	292 BURKE LOT DR	276-346-3007	1
4015	Gordon, Jimmy	2342	1096 SANDY RIDGE RD	276-870-2694	1
4021	Watkins, William	12919	1625 Machine Branch Rd	276-594-4099	1
4035	Goodman, Mary	4176	164 Wolfbranch Rd	276-219-2109	1
4041	Orr, W C	1009	550 Martin Sub Division Rd	276-275-1884	1
4047	Kelly, Jerry and Melinda	4422	294 Ballard Dr	276-275-9814	1
4065	Hensley, Sherry L	22858	134 Par Rd	276-393-3513	1
4070	Hensley, Edmond	8458	293 Patchwork Rd	276-445-4715	1
4073	Rivers, Terry	29630	109 Shiloh Dr	276-861-4520	1
4081	Dooley, Trubie/ Cupp, Charlotte	12921	255 Dooley Hollow Rd	276-861-2702	1
4087	Lawson, Angela	30551	6106 Kane Gap Rd	276-207-7496	1
4089	Gingerich, Zackery	2191	5662 A J Osborne Hwy	423-723-9435	1

4096	Roberts, Billy and Valerie	43566	391 BEECH GROVE RD	276-346-0066	1
4097	Chadwell, Morgan	12975	128 Bluegrass Dr	865-585-8919	1
4112	Wagoner, Katherine/It is ok to talk to Mike	3520	857 Joe Moore Rd	276-832-1909	1
4118	Hall, Adam	50262	450 WILLIS CHAPEL	276-275-4047	1
4126	Byington, Christan	38865	144 Ervin Hill Dr	276-393-2106	1
4138	Isaacs, James	22047	2183 MACHIN BRANCH RD	276-445-5256	1
4139	Ayers, Ivan/Fince, Vida	8072	757 Scott Hollow Rd	276-346-7952	1
4151	McKnight, Hubert	46337	218 Old Mill Rd	276-275-1923	1
4153	Hurst, Robert	12925	788 Dooley Hollow Rd	276-445-4103	1
4166	Moore, Tiffany E	30376	5760 Flanary Bridge Rd	276-346-1601	1
4172	Reker, Leslie and Ellen	35492	1544 Klondike Rd	828-424-4588	1
4192	Bishop, Ruby/ Susan Begley	19900	11997 STATE ROUTE 606	276-524-1857	1
4204	Mccurry, Lindsey	7699	945 Van Huss Rd	276-346-6317	1
4242	Sexton, Eric	49117	200 EMERALD DR	276-393-4269	1
4249	Barber, Ester	24500	1610 Chances Chapel Rd	276-219-7383	1
4259	Blankenbecker, Sherrie	38512	4153 OLD WOODWAY RD	276-546-4760	1
4268	Dishner, Julie	40253	2118 Klondike Rd	276-365-6946	1
4270	Poteet James L	2168	3405 AJ Osborne Hwy	276-346-0316	1
4280	Napier, Desiree	2460	9086 Middle Wallens Creek	276-690-8337	1
4284	Robbins, Freda	32947	10497 STATE RT HWY 70	276-346-6516	1
4300	Miles, Tasha	2552	304 Springs Hollow Rd	276-210-3395	1
4312	Clark, Justin	56125	448 Reed Patch Rd	276-365-5877	1
4315	Hughes, Jamie	37060	195 Hughes Dr	276-971-5705	1
4320	Carrroll, Charley	49118	9484 MIDDLE WALLENS CREEK RD	276-832-2196	1
4323	Ashley, David W	29345	1643 Dry Creek Rd	276-870-8501	1
4337	Mooney, Kelli	43586	336 Country Side Dr	423-341-5787	1
4341	Wilder, Emily	19807	411 Lizzie Minor Rd	276-614-0002	1
4344	Sizemore, Ronnie	8437	815 Boones Path Rd	606-670-9703	1
4376	England, Todd	36956	1441 Dooley Hollow Rd	304-288-8801	1
4391	Faulkner, Wanoka	48324	3013 Lower Wallens Creek Rd	276-832-2221	1
4410	Lawson, Trevia	35473	159 ROCK WOOD RD	276-298-9104	1
4420	Hopkins, Earthel	7418	25781 WILDERNESS RD	276-346-7211	1
4424	Seal, Vernon	19627	205 SEAL TRAIL	276-346-6746	1
4445	Vaillee farms llc	2686	1054 KANE GAP RD	276-708-6089	1

4446	Hobbs, Larry		48364	2169 KANE GAP RD	276-708-6089	1
4476	Wardell, Angel		2563	349 DUB PARSONS DR	276-346-6143	1
4479	Ramey, George		40884	2285 HICKORY HILL RD	276-546-8502	1
4484	Peterson, Philip		2713	4533 KANE GAP RD	517-242-5652	1
4485	Martin, George		32898	147 EMORY DR	276-346-4454	1
4502	Kelly, Robert K		35477	393 HEN REASOR RD	276-639-3803	1
4507	Brown, Tom		17766	306 BROWN TAYLOR DR	765-517-0472	1
4515	Vendley, Zack		43642	2507 VAN HUSS RD	423-863-7884	1
4526	Brummet, Pamela		2398	132 BROWNING RD	276-832-1146	1
4530	Shirks, Devon		24711	210 CHARLES SHEPARD DR	276-345-2172	1
4545	Bright, Janet		6014	5174 HUBBARD SPRINGS RD	276-690-6419	1
4570	Eldridge, Margaret/ text if at all possible		8015	4517 OLD NURSERY RD	727-888-3178	1
4571	Smith, Kelly		36362	6137 LOWER WALLENS CREEK RD	719-696-5818	1
4574	Johnson, Brenda L		29692	831 RASH HOLLOW RD	276-832-2220	1
4576	Garret, Joshua		49116	267 BUTTERSCOTCH DR	276-546-4591	1
4578	Lewis, Amanda		2884	2884 OLD FRIENDSHIP RD	276-832-2028	1
4583	Moose, Dan		1279	411 LORIE VALLEY DR	813-220-3666	1
4589	Bledsoe, Jeffrey		38175	5292 KANE GAP RD	276-219-9283	1
4598	Lawson, Christy		48434	5455 LOWER WALLENS CREEK RD	276-220-3214	1
4609	Tallman, Danielle		17415	240 CALVARY RD	606-670-8350	1
4618	Mercer, Douglas and Tyelene		3892	191 SHERMAN DR	478-957-9955	1
4632	Eldridge, Lisa		30764	454 ROY CHEEK RD	423-480-5611	1
4636	Young, Harold		2718	4882 KANE GAP RD	276-219-9283	1
4640	Edgecombs, Shirley		19513	1212 HURRICANE BRIDGE TRLR #1	276-346-7177	1
4641	Scott, James		48944	3969 BIG HILL RD	276-275-6788	1
4654	Hull, William		55820	1751 WAR CREEK RD	423-624-7948	1
4655	Perdue, Lori		7394	1611 RACKING HORSE RD	276-346-2065	1
4690	Rasnic, Thomas L		2710	187 HAYVAN DR	276-594-0141	1
4710	Taylor, Summer		4384	130 CLIFF ELY RD	276-524-2089	1
4722	Miles Lynn		1169	205 YORK DR	276-832-1937	1
4725	Bowen, Betty and George		6487	1204 CLAUDE GLASS DR	276-346-2117	1
4734	Blair, Jamie		50327	2515 Lower Wallens Creek	276-275-4979	1
4744	Young, David		24494	1713 MIDDLE WALLENS CREEK RD	276-594-6605	1
4752	Mitchell, Patricia D		45305	1106 SCOTT HOLLOW RD	276-870-8802	1

4756	Montgomery, Connie	47101	149 ROCK ROSE DR	276-445-4515	1
4759	Cornett Harriett	45247	30918 WILDERNESS RD	276-393-8361	1
4769	Baker, John	50286	53253 VETERANS MEMORIAL HWY	276-207-1225	1
4770	Baker, John	50287	53253 VETERANS MEMORIAL HWY	321-302-0564	1
4797	Ungerbuehler, Wayne E	2370	1802 HURRICANE BRIDGE RD	276-219-1593	1
4798	Parsons, James L	43555	5745 OLD WOODWAY RD	276-202-5231	1
4809	Stapleton, Sierra	4404	4095 REEDS CREEK RD	276-219-8041	1
4811	Baker, Christie	2587	370 MIDDLE WALLENS CREEK RD	276-345-6391	1
4840	Carroll, Ella F	48355	175 KANE GAP RD	276-220-1186	1
4861	Harber, Robert	6004	845 HUBBARD CHURCH RD	276-346-3446	1
4865	The Country Porch/ Diana Gibson	45269	54619 VETERANS MEMORIAL HWY	276-639-6532	1
4869	Bowling, Jesse	47146	957 CEDAR HILL RD	865-352-9257	1
4876	Maggard, Charles	6670	502 RIDGECREST RD	276-445-4222	1
4889	Elliot, Larry D	24331	4877 JASPER RD	276-546-5937	1
4892	Cornett, Ronald O	24508	49162 VETERANS MEMORIAL HWY	276-275-2201	1
4896	Collins, James R	24350	4822 BLACKWATER RD	276-346-4618	1
4904	Fisher, Donnie	3126	106 NEELY DR	423- 345-3527	1
4925	Jeffers, Roland	30645	286 ARTHUR LEE DR	423-223-8065	1
4926	McCoy, Joe	17662	225 ESTEP HOLLOW	606-896-0145	1
4928	Moore, Cody	50196	585 Joe Moore Rd.	276-346-7206	1
4934	Slemp, Charles	30146	278 SNOWFLAKE LN	276-546-4468	1
4938	Fee, Debbie	19812	690 MARTINS CREEK RD	606-670-7659	1
4945	Kinney, Tamey	44926	140 JOYCE ROBBINS DR APT 103	276-708-5793	1
4952	Medley, Sherrie	1325	166 HICKORY FLATS RD	276-346-7513	1
4954	Cope, Kevin	19714	1712 MARTIN WOLF RD	606-670-8703	1
4958	Tignor, Douglas	35413	442 MURHOY HOBBS RD	276-345-5315	1
4959	Snuffer, Jennifer and Justin	41414	329 MOUNTAIN JEWELL TRAIL	352-551-3618	1
4964	Harris, Kay	39277	158 CRIDER DR	276-346-1972	1
4965	Morris, Ali	39278	160 CRIDER DR	276-346-7147	1
4969	Yeary, Wayne and Eva	49079	759 OLD YEARY RD	276-328-8345	1
4972	Tomlinson, Sherry	2774	3885 HICKORY HILL RD	423-833-1107	1
4974	Lawson, Lynn/ Hall, Dylan	29328	3212 MIDDLE WALLENS CREEK	276-207-3121	1
5004	Shuler Truman/ Aaron White	3817	896 SULPHER SPRINGS RD	276-639-9839	1
5009	Gambrel, LeAnn	9565	1575 WILLOW TREE RD	606-499-5094	1

5012	Fisher, Vivian	1574	361 HENRY PETERS DR	276-393-9396	1
5019	Davis, Lisa	47180	239 HOWARD PETERS DR	276-275-3566	1
5022	Moore, Michael & Amy	35458	6375 Lower Wallens Creek	276-393-8842	1
5034	Conley, Lucy	36398	136 CAITLYN RD	276-346-3567	1
5040	Exum, Glynda	30642	605 BLUE HOLLOW RD	276-219-6917	1
5049	Sowders, Patsy	12926	1520 Machine Branch	276-445-3021	1
561	Osborne, Carlotta	3148	121 HICKORY HILL RD	276-594-5630	1
664	Osborne, Homer	1613	173 HICKORY HILL RD	276-346-2795	1
696	Poore, Carrie	9659	777 POSSUM HOLLOW RD	423-259-1680	1
706	Middleton, Robert & Josie	22397	12649 US HIGHWAY 421	276-546-3660	1
886	Brooks, Katherine	30452	528 OLD GROVE TRL	865-585-4828	1
948	Golden, Carlis	48449	349 BIG EASY TRL	734-673-4426	1
1044	Aldridge, Kelly & Shane	30746	1120 COONSHINE DR	276-275-3841	1
1078	Widener, Charlotte	797055	231 MONTE VISTA RD	276-445-4719	1
1372	Robbins, Kimberly	17165	2745 YELLOW BRANCH RD	276-445-6455	1
1625	Egan, Regina	37544	259 BLACKBERRY PATCH DR	276-973-5477	1
2073	Hill, Jackie	12936	570 MACHINE BRAND RD	865-278-7350	1
2103	Carrall, Foriest		730 Thunder Rd	276-346-3962	1
2192	Franklin, Melissa	6346	2549 Maple Hill Rd	276-708-6926	1
2272	Robinson, Louise	2085	222 Asbury Rd	276-299-3450	1
2400	Everhart, Alicia Nicole	6010	190 Leadford Grabeel Rd	276-832-2526	1
2432	Ely, Arnold Jr	30374	1490 Belgium Hollow Rd	276-690-5140	1
2573	Owens, Shyla	1312	209 Myers Rd	276-275-7955	1
2611	Holder, Angela	46284	514 Mommas Place Tr	865-454-7050	1
2653	Green, Debra W	9705	2089 Martins Creek Rd	276-861-3358	1
2660	Asbury, Cheryl	19205	1582 Back Valley Rd	276-346-3475	1
2684	Hensley, Elizabeth	24306	971 Old Nursery Rd	865-585-1014	1
2715	Norman, Karisa/Catron, Justin	7586	491 Balls Chapel Rd	276-870-7415	1
2757	Houskins, Crystal	47565	624 Dean Rd	276-832-2582	1
2810	Zion, John	39382	355 John Zion Dr	276-346-0462	1
2859	Hopkins, Amber	491988	811 Millers Point Trail	269-213-6400	1
2931	Pauley, Jeff	22418	426 Possum Hollow Rd	276-445-3118	1
3056	Egan, Whitney	47187	227 Blackberry Patch Dr/CBN	423-534-1380	1
3514	Bailey, Linda	4079	188 Ivy Berry Dr	276-546-4029	1

3656	Johnston, Eddie	36307	2497 SANDY RIDGE RD	276-393-5068	1
3683	Crouch, Donald Wayne	30755	649 Old Mulberry Rd	276-346-3374	1
3684	Eldridge, Craig Jr.	3811	113 Albany Dr	276-832-2490	1
3813	Lovoi, Steven	44495	1639 Carter Cave Rd	772-285-1658	1
4130	Shubert, Danny	46653	680 Shubert Estate Trail	276-701-7095	1
4565	Warf, James	39291	201 Greystone Dr	276-220-2185	1
4939	Morelock, Anthony	19231	2469 RED FLETCHER RD	276-219-4991	1

## 2022 Virginia Telecommunication Initiative (VATI) Passing Form

Type of Passings	Total Number of Passings in the Project Area <sup>1</sup>	Passings in the Project Area, without Special Construction Costs Required <sup>2</sup>	Passings with Special Construction Costs budgeted in the Application <sup>3</sup>	Number of Passings with Speeds at 10/1 or below in Project Area <sup>4</sup>
Residential	10,801	10,982	0	5,375
Businesses (non-home based)				
Businesses (home-based)				
Community Anchors				
Non-residential				
<b>Total</b>	10,801	10,982	0	5,375

**Note:** The Total Number of Passings **MUST** be equal to the Residential, Business (non-home based), Non-residential and Community Anchors sum.

**Note:** Do not include passings in RDOF awarded areas that were awarded to the co-applicant; these passings should be included in the RDOF Passings Form. Passings included in this application in RDOF awarded areas that were not awarded to the co-applicant, unless successfully challenged, are considered unserved and should be counted as passings in this form.

<sup>1</sup>The total number of structures in the project area that can receive service. See definition of passing below for more detail.

<sup>2</sup>The number of structures in the project area that will not require special construction costs to provide service to. These passings fall within the broadband provider's standard service connection drop length and do not require nonstandard equipment or any additional fees above normal service connection fees required to provide broadband access to a premise.

<sup>3</sup>The number of structures in the project area with all construction costs budgeted in the application. These passings will not require any additional special construction costs beyond those budgeted for in the VATI application.

<sup>4</sup>The number of structures in the project area that do not have access to internet at speeds of at least 10 mbps download and 1mbps upload.

## Definitions

**Passing** – any structure that can receive service. Multi-unit structures may be counted as more than 1 passing, provided individual connections and account are planned at that structure.

**Business** – An organization or entity that provides goods or services in order to generate profit. Businesses based in residential homes can count if they are a registered business (BPOL, LLC, etc.).

**Community Anchor** - schools, libraries, medical and health care providers, public safety entities, community colleges and other institutions of higher education, and other community support organizations and agencies that provide outreach, access, equipment, and support services to facilitate greater use of broadband service by vulnerable populations, including low-income, unemployed, and the aged.

**Non-Residential Passing** – places of worship, federal, state, or local facilities or other potential customers that are neither a residence, business or a community anchor as defined above.



**LENOWISCO PDC**  
**VATI #2022 LENOWISCO District-Wide Broadband Project**

**Attachment 7**  
**Timeline/Project Management Plan**

**Project Timeline**

Task	Responsible Person	Responsible Entity	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18
Apply for Any Permits	Matt Hill	SCTC																		
Solicit Quotes for Materials & Electronics	Matt Hill	SCTC																		
Select Vendors for Materials & Electronics	Matt Hill	SCTC																		
Prepare Drawdown Reports Quarterly	Melissa Jessee/R. Crockett	SCTC/LENOWISCO																		
Construction	Matt Hill (Cody Gray/Bo Goodin)	SCTC/PVEC																		
Fiber Splicing and Testing	Matt Hill (Cody Gray/Bo Goodin)	SCTC/PVEC																		
Electronics Installation	Matt Hill (Jeff Flanary)	SCTC																		
Prepare Monthly Progress Reports	Melissa Jessee/R. Crockett	SCTC/LENOWISCO																		
Marketing and Installations	Josh Jones/Travis Darnell	SCTC																		
Prepare Closeout Report	Melissa Jessee/R. Crockett	SCTC/LENOWISCO																		
Project Complete	Matt Hill (Cody Gray/Bo Goodin)	SCTC/PVEC																		


Contract Begins: TBD  
 Contract Ends: 18 months from start of contract



**Memorandum of Understanding Between Scott County Telephone Cooperative and the LENOWISCO Planning District Commission**

1. Whereas the LENOWISCO Planning District Commission (LENOWISCO) is authorized by Chapter 42 of title 15.2 of the Code of Virginia, 1950 as amended, to assist local government units in planning their development; and
2. Whereas, the Scott County Telephone Cooperative's (SCTC) mission includes providing regional telecommunication services, active community service and promoting economic development; and
3. Whereas, the Virginia Department of Housing and Community Development's (DHCD) Virginia Telecommunications Initiative (VATI) is established to provide financial assistance to supplement construction costs to extend service to areas that are presently unserved; and
4. Whereas, the VATI program requires a unit of government to serve as applicant, along with a private sector provider as a co-applicant; and
5. Whereas, LENOWISCO and SCTC both actively support the same goals regarding regional broadband expansion.
6. Now Therefore Be it Resolved, that the LENOWISCO Planning District Commission and Scott County Telephone Cooperative's partnership consist of, but not limited to, the following components:
  - SCTC will coordinate planning/technical staff and applicable consultants in gathering the information necessary to submit the identified projects and subsequent implementation if awarded.
  - LENOWISCO will provide grant administrative services and technical assistance with utilities, localities, public entities, etc. where applicable.
  - 5% of the total awarded amount will be held until the project is complete.
7. Be it further resolved, that, unless duly noted, the SCTC and/or applicable consultants are responsible for creation and compilation of any and all necessary data or information required for submission and implementation of any VATI partnered project.

Accepted by Scott County Telephone Cooperative

  
WILLIAM J. FRANKLIN, Chief Executive Officer

8-2-21  
Date

Accepted by the LENOWISCO Planning District Commission

  
DUANE A. MILLER, Executive Director

8/2/21  
Date

## **ATTACHMENT 9 - VATI FUNDING SOURCES TABLE**

LENOWISCO PDC  
 FY2022 VATI - LENOWISCO District-Wide Broadband Project  
 Lee, Wise & Scott Counties in Virginia

### VATI FUNDING SOURCES TABLE

Please fill in the chart below with a description of the project funding source (local, federal, state, private, other), the amount from that source, the percentage of total project funding that source represents, and a description of the current status of the funds (pending, secured, etc.).

Source	Amount	%	Status
REQUESTED VATI	\$ 22,190,500	78%	Pending
SCTC	2,854,500	10%	CASH ON-HAND
WISE COUNTY	1,800,000	6%	SECURED
LEE COUNTY	1,400,000	5%	FUNDED
SCOTT COUNTY	300,000	1%	SECURED
	\$		
	\$		
<b>TOTAL</b>	<b>\$ 28,545,000</b>	<b>100 %</b>	



Attachment 10

Documentation of Match Funding from Scott County Telephone Cooperative

*I hereby certify that \$2,854,500.00 in funds are available  
from Scott County Telephone Cooperative  
for the  
LENOWISCO Planning District Commission's  
2022 Virginia Telecommunications Initiative (VATI) Grant Application  
thru the Virginia Department of Housing and Community Development (DHCD)  
for the  
LENOWISCO District-Wide Broadband Project  
located in Lee, Wise & Scott Counties in Virginia.*

SCTC Match/Cash on-Hand:  
\$ 2,854,500.00

*William J. Franklin*  
\_\_\_\_\_  
William J. Franklin  
Chief Executive Officer  
Scott County Telephone Cooperative

9-7-21  
Date

Wise County Board of Supervisors



Office of County Administrator

TELEPHONE 276-328-2321  
FAX 276-328-9780

COURTHOUSE

P.O. BOX 570  
206 E. MAIN STREET

WISE, VIRGINIA 24293

September 10, 2021

Ms. Tammy L. Breski  
Telecommunications and Broadband Specialist  
Virginia Department of Housing and Community Development  
600 E Main Street, Suite 300  
Richmond, VA 23219

RE: LETTER OF COMMITMENT-LENOWISCO PDC & SCTC 2022 VATI GRANT  
APPLICATION

Dear Ms. Breski:

The Wise County Board of Supervisors has always supported technology which improves the quality of life, creates economic development opportunities and enhances the quality of education. Simply put, quality broadband services do all of these things.

The LENOWISCO, PDC and Scott County Telephone Cooperative (SCTC) share a strong interest in the deployment and use of broadband infrastructure as a vital component to the growth and competitiveness of the Region. As you know, it is particularly important to providing economic opportunities to rural America.

The Wise County Board of Supervisors adamantly supports the LENOWISCO PDC and SCTC's 2022 VATI application by committing \$ 1.8 million which will serve as matching funds for this project to be invested in Wise County, VA.

We look forward to receiving positive results from the DHCD on this VATI application.

Sincerely,

Michael Hatfield, County Administrator  
County of Wise, Virginia



Lee County Board of Supervisors

LEE COUNTY  
P.O. Box 367  
Jonesville, Virginia 24263-0367

COUNTY ADMINISTRATOR  
Telephone 276-346-7714  
Fax 276-346-7712  
www.leecova.org

September 8, 2021

Ms. Tammy L. Breski  
Telecommunications and Broadband Specialist  
Virginia Department of Housing and Community Development  
600 E Main Street, Suite 300  
Richmond, VA 23219

RE: LETTER OF COMMITMENT-LENOWISCO PDC & SCTC 2022 VATI GRANT  
APPLICATION

Dear Ms. Breski:

The Lee County Board of Supervisors has always supported technology which improves the quality of life, creates economic development opportunities and enhances the quality of education for our citizens. Simply put, quality broadband services do all of these things.

The LENOWISCO Planning District Commission and Scott County Telephone Cooperative (SCTC) share a strong interest in the deployment and use of broadband infrastructure as a vital component to the growth and competitiveness of our region. As you well aware, reliable broadband service is of particular importance to providing economic opportunities in rural America.

The Lee County Board of Supervisors strongly supports the LENOWISCO PDC and SCTC's 2022 VATI application. The County has already invested \$1.4 million for broadband infrastructure which will serve as matching funds and these funds are included in the proposed VATI grant project. We look forward to receiving positive news of funding from the Department of Housing and Community Development on this VATI application.

If you should need anything further from the County regarding this application, please feel free to contact us.

Sincerely,

D. Dane Poe  
County Administrator

BOARD OF SUPERVISORS

DARREL W. JETER  
MARSHALL D. TIPTON  
JEREMY P. HERRON  
MICHAEL K. BRICKEY  
DANNY P. MANN  
SELMA G. HOOD  
STEFANIE A. CRUBY



SCOTT COUNTY  
BOARD OF SUPERVISORS

COUNTY ADMINISTRATOR  
FREDA R. STARNES

190 BEECH STREET, SUITE 201  
GATE CITY, VIRGINIA 24251  
PHONE (276) 386-6521  
FAX (276) 386-9198

EMAIL: [fstarnes@scottcountyva.com](mailto:fstarnes@scottcountyva.com)  
[www.scottcountyva.com](http://www.scottcountyva.com)

September 1, 2021

Scott County Telephone Cooperative  
P.O. Box 487  
Gate City, VA 24251

RE: Letter of Commitment for the LENOWISCO PDC and SCTC VATI Grant Application

Mr. Franklin:

The Scott County Board of Supervisors has always supported technology which improves the quality of life, creates economic development opportunities and enhances the quality of education. Simply put, quality broadband services do all of these things.

LENOWISCO and Scott County Telephone Cooperative (SCTC) share a strong interest in the deployment and use of broadband infrastructure as a vital component to the growth and competitiveness of the Region. As you know, it is particularly important to providing economic opportunities to rural America.

The Scott County Board of Supervisors adamantly supports the LENOWISCO PDC and SCTC's 2022 VATI application by committing a match of \$300,000 for this project to be invested in Scott County, Virginia.

We look forward to receiving positive results from VATI on this application.

Sincerely,

A handwritten signature in blue ink that reads "Freda R. Starnes".

Freda R. Starnes  
County Administrator





**Pro Forma 5-Year Financial Forecast**  
**VATI FY2022 LENOWISCO District-Wide Broadband Project**  
 Scott County Telephone Cooperative, Inc. and Subsidiary

	Historical		Forecast Period					
	2019	2020	2021	2022	2023	2024	2025	2026
Cash	\$ 3,130,535	\$ 5,650,554	\$ 1,509,354	\$ 5,180,506	\$ 5,390,273	\$ 6,808,583	\$ 6,813,946	\$ 7,145,191
Certificate of Deposit	1,162,272	245,164			916,602	926,827	937,052	947,277
Accounts Receivable	221,261	629,366	896,152	906,377	1,772,598	2,066,852	2,161,106	2,255,360
Materials & Supplies	750,750	1,945,612	2,572,598	2,666,852	1,772,598	2,066,852	2,161,106	2,255,360
Other current assets	460,537	396,551	1,356,121	1,369,682	1,293,474	1,306,409	1,319,473	1,332,668
<b>Total Current Assets</b>	<b>5,725,355</b>	<b>8,867,247</b>	<b>6,334,225</b>	<b>10,123,417</b>	<b>9,372,947</b>	<b>11,108,671</b>	<b>11,231,577</b>	<b>11,680,496</b>
Plant in Service	73,619,181	78,375,629	101,888,828	125,338,578	142,433,828	150,183,828	157,433,828	164,683,828
Plant Under Construction	4,397,747	9,087,823	5,283,507	4,755,156	3,705,156	2,955,156	2,659,641	2,393,677
Accumulated Depreciation - Other Assets	(50,731,274)	(48,103,503)	(51,439,496)	(56,865,454)	(63,704,726)	(70,767,149)	(79,454,573)	(88,341,997)
Other Non-Current Assets	9,616,099	9,932,244	16,866,857	17,016,857	15,866,857	14,716,857	14,566,857	14,416,857
<b>Total Non-Current Assets</b>	<b>36,901,753</b>	<b>49,292,193</b>	<b>72,599,696</b>	<b>90,245,137</b>	<b>98,301,115</b>	<b>97,088,692</b>	<b>95,205,753</b>	<b>93,152,365</b>
<b>Total Assets</b>	<b>\$ 42,627,108</b>	<b>\$ 58,159,440</b>	<b>\$ 78,933,921</b>	<b>\$ 100,368,554</b>	<b>\$ 107,674,062</b>	<b>\$ 108,197,363</b>	<b>\$ 106,437,330</b>	<b>\$ 104,832,861</b>
Accounts Payable	\$ 662,208	\$ 4,276,951	\$ 2,908,995	\$ 2,759,995	\$ 2,908,995	\$ 2,758,995	\$ 2,608,995	\$ 2,458,995
Current Portion - Existing Debt	1,930,000	750,000	2,124,000	2,123,000	1,930,000	1,841,000	1,841,000	1,841,000
Other Current Liabilities	657,051	1,376,477	1,072,603	1,057,603	1,772,603	1,757,603	1,742,603	1,727,603
<b>Total Current Liabilities</b>	<b>3,249,259</b>	<b>6,403,428</b>	<b>6,105,598</b>	<b>5,939,598</b>	<b>6,611,598</b>	<b>6,357,598</b>	<b>6,192,598</b>	<b>6,027,598</b>
Deferred Grant Revenue	1,388,042	5,108,674	16,877,238	37,016,737	40,621,737	38,590,650	36,661,118	34,828,062
Other Non-Current Liabilities	8,973,510	9,706,109	9,639,578	9,164,578	8,689,578	8,214,578	7,739,578	7,264,578
Long-term Debt, net of current maturities	5,933,424	12,846,125	16,797,125	20,349,125	23,094,125	23,928,125	22,087,125	20,246,125
<b>Total Non-Current Liabilities</b>	<b>16,294,976</b>	<b>27,660,908</b>	<b>43,313,941</b>	<b>66,530,440</b>	<b>72,405,440</b>	<b>70,733,353</b>	<b>66,487,821</b>	<b>62,338,765</b>
<b>Total Liabilities</b>	<b>19,544,235</b>	<b>34,064,336</b>	<b>49,419,539</b>	<b>72,470,038</b>	<b>79,017,038</b>	<b>77,090,951</b>	<b>72,680,419</b>	<b>68,366,363</b>
Capital Stock	102,396	104,236	195,796	199,546	203,296	207,046	210,796	214,546
Accumulated other comprehensive income	(2,963,302)	(4,412,854)	(2,267,854)	(4,750,000)	(4,960,000)	(5,135,000)	(5,135,000)	(5,135,000)
Patronage Capital Credits	25,943,779	28,403,722	31,586,440	32,448,970	33,413,728	36,034,366	38,681,115	41,386,952
<b>Total Equity</b>	<b>23,082,873</b>	<b>24,095,104</b>	<b>29,514,382</b>	<b>27,898,516</b>	<b>28,657,024</b>	<b>31,106,412</b>	<b>33,756,911</b>	<b>36,466,498</b>
<b>Total Liabilities and Equity</b>	<b>\$ 42,627,108</b>	<b>\$ 58,159,440</b>	<b>\$ 78,933,921</b>	<b>\$ 100,368,554</b>	<b>\$ 107,674,062</b>	<b>\$ 108,197,363</b>	<b>\$ 106,437,330</b>	<b>\$ 104,832,861</b>

See summary of significant forecast assumptions and accounting policies and accountant's report.

**Pro Forma 5-Year Financial Forecast**  
Statements of Cash Flows

VATI FY2022 LENOWISCO District-Wide Broadband Project

Scott County Telephone Cooperative, Inc. and Subsidiary

	Forecast Period							
	2019	2020	2021	2022	2023	2024	2025	2026
<b>Beginning Cash</b>	<b>\$ 4,432,938</b>	<b>\$ 3,130,536</b>	<b>\$ 5,650,554</b>	<b>\$ 1,509,354</b>	<b>\$ 5,180,506</b>	<b>\$ 5,390,273</b>	<b>\$ 6,808,583</b>	<b>\$ 6,813,946</b>
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>								
Net Income (Loss)	1,652,550	2,459,943	3,182,718	862,530	964,758	2,620,638	2,646,749	2,705,837
Adjustments to Reconcile Net Income (Loss) to Net Cash From Operating Activities:								
Add: Depreciation - Other Assets	3,368,331	2,971,295	3,335,993	5,425,958	6,839,272	7,062,423	8,687,424	8,887,424
Changes in Assets and Liabilities:								
Accounts Receivable	415,658	(408,105)	(266,786)	(10,225)	(10,225)	(10,225)	(10,225)	(10,225)
Materials & Supplies	(112,802)	(1,194,862)	(626,986)	(94,254)	894,254	(294,254)	(94,254)	(94,254)
Other Non-Current Assets	(76,149)	63,986	(959,570)	(13,561)	76,208	(12,335)	(13,064)	(13,195)
Accounts Payable	(339,667)	3,614,743	(1,367,956)	(150,000)	150,000	(150,000)	(150,000)	(150,000)
Other Current Liabilities	(137,381)	(649,870)	(303,874)	(15,000)	715,000	(15,000)	(15,000)	(15,000)
Other Cash Flows from Operations								
<b>Net Cash From Operating Activities</b>	<b>4,770,540</b>	<b>6,857,130</b>	<b>2,993,539</b>	<b>6,005,448</b>	<b>9,629,267</b>	<b>9,200,647</b>	<b>11,051,630</b>	<b>11,310,587</b>
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>								
Change in Memberships	464	1,840	91,560	3,750	3,750	3,750	3,750	3,750
Change in Deferred Grant Revenue		3,673,268	11,768,564	20,139,499	3,605,000	(2,031,087)	(1,929,533)	(1,833,056)
Proceeds from Existing Debt		7,622,494	7,449,000	5,674,000	4,482,000	2,586,000	-	-
Repayments of Existing Debt	(1,900,589)	(1,889,793)	(2,124,000)	(2,123,000)	(1,930,000)	(1,841,000)	(1,841,000)	(1,841,000)
Other Cash Flows impacts other		1,123,956	(4,856,144)	(3,107,146)	465,000	500,000	(325,000)	(325,000)
<b>Net Cash From Financing Activities</b>	<b>(1,900,135)</b>	<b>10,531,765</b>	<b>12,328,980</b>	<b>20,587,103</b>	<b>6,625,750</b>	<b>(782,337)</b>	<b>(4,091,783)</b>	<b>(3,995,306)</b>
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>								
Capital Expenditures	(4,210,352)	(14,814,011)	(19,708,883)	(20,066,899)	(16,045,250)	(7,000,000)	(6,954,484)	(6,984,036)
Grant Match - capital portion - SCTC				(2,854,500)				
Change in Certificate of Deposits	(25,788)	(54,866)	245,164					
Other Cash Flows from Investing	63,333							
<b>Net Cash From Investing Activities</b>	<b>(4,172,807)</b>	<b>(14,868,877)</b>	<b>(19,463,719)</b>	<b>(22,921,399)</b>	<b>(16,045,250)</b>	<b>(7,000,000)</b>	<b>(6,954,484)</b>	<b>(6,984,036)</b>
<b>Increase (Decrease) in Cash</b>	<b>(1,302,402)</b>	<b>2,520,018</b>	<b>(4,141,200)</b>	<b>3,671,152</b>	<b>209,767</b>	<b>1,418,310</b>	<b>5,363</b>	<b>331,245</b>
<b>Ending Cash</b>	<b>\$ 3,130,536</b>	<b>\$ 5,650,554</b>	<b>\$ 1,509,354</b>	<b>\$ 5,180,506</b>	<b>\$ 5,390,273</b>	<b>\$ 6,808,583</b>	<b>\$ 6,813,946</b>	<b>\$ 7,145,191</b>

See summary of significant forecast assumptions and accounting policies and accountant's report.

SCOTT COUNTY TELEPHONE COOPERATIVE, INC. AND SUBSIDIARY  
GATE CITY, VIRGINIA  
VATI Application – Lenowisco FY2022 District-Wide Broadband Project  
SUMMARY OF SIGNIFICANT FORECAST  
ASSUMPTIONS AND ACCOUNTING POLICIES

NOTE 1 - NATURE OF THE FORECASTS

Scott County Telephone Cooperative, Inc. and Subsidiary (the Cooperative) is located in Gate City, Virginia. The financial forecast presents the Cooperative's plans for operations for the next five years.

These financial forecasts present, to the best of management's knowledge and belief, the Cooperative's expected financial position, results of operations, and cash flows for the forecast periods. Accordingly, the forecasts reflect its judgment as of September 14, 2021, the date of these forecasts, of the expected conditions and its expected course of action. The assumptions disclosed herein are those that management believes are significant to the forecasts. There will usually be differences between the forecasted and actual results, because events and circumstances frequently do not occur as expected, and those differences may be material.

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

The following is a summary of significant accounting policies of Scott County Telephone Cooperative, Inc. and Subsidiary (the Cooperative):

Consolidation - The consolidated financial statements included the accounts of Scott County Telephone Cooperative, Inc. and its wholly owned subsidiary, SCTC Management Group, Inc. Scott Telecom and Electronics, Inc., Scott County Long Distance, Inc., MountaiNet, Inc., and Appalachian Broadband, LLC are wholly owned subsidiaries of SCTC Management Group, Inc. MountaiNet Telephone Cooperative, Inc. and MountaiNet Long Distance, Inc. are wholly owned subsidiaries of MountaiNet, Inc. SW VA Fiber Network, LLC is a wholly owned subsidiary of Appalachian Broadband, LLC. All material intercompany balances and transactions have been eliminated.

The Cooperative's principal line of business is providing local telephone service, long distance, security, telephone service, and cable and internet access services. The revenues reported on these statements of income reflect the relative importance of each type of service. The principal market for these telecommunications services are local residential and business customers residing in the exchange the Cooperative serves in Gate City, Virginia.

Revenue recognition - Compensation for interstate access services is received through tariffed access charges filed by the National Exchange Carrier Association (NECA) with the Federal Communications Commission (FCC) on behalf of the member companies. These access charges are billed by the Cooperative to the interstate interexchange carriers, and pooled with like revenues from all NECA member companies. The portion of the pooled access charge revenue received by the Cooperative is based upon its actual cost of providing interstate access service, plus a return on the investment dedicated to providing that service.

Compensation for Intrastate/IntraLATA access services (for toll traffic not carried by an interexchange carrier) is received under an IntraLATA Toll Originating Responsibility Plan (ITORP). Access charges, as filed with the Virginia State Corporation Commission, are billed to the originating local exchange carrier for terminating toll traffic, and retained by the Cooperative. Toll revenue is billed to the end user at the Cooperative's local tariffed rates, and is retained by the Cooperative. The Cooperative pays the other local exchange carrier for terminating the toll traffic.

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NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES: (continued)

Compensation for Intrastate/InterLATA service and Intrastate/IntraLATA service (for toll traffic carried by an interexchange carrier) is received through tariffed access charges as filed with the Virginia State Corporation Commission. These access charges are billed to the interexchange carriers carrying the traffic and retained by the Cooperative.

Compensation for long distance service is received through charges for providing usage of the local exchange network. Toll revenues are recognized when services are rendered.

Compensation for cable television and Internet access is received through monthly charges for providing cable television programming and Internet access to customers that subscribe to these services.

Taxes - The Cooperative collects communications taxes from its members on behalf of the State of Virginia. Revenue is presented net of taxes collected in the statements of income.

Income taxes - The Cooperative accounts for income taxes in accordance with the Income Taxes Topic of the FASB Accounting Standards Codification. This topic requires companies to record deferred tax liabilities or assets for the deferred tax consequences of all temporary differences. Deferred taxes are provided on the liability method whereby deferred tax assets are recognized for deductible temporary differences and operating loss and tax credit carry forwards, and deferred tax liabilities are recognized for taxable temporary differences. Temporary differences are the differences between reported amounts of assets and liabilities and their tax bases. Deferred tax assets are reduced by a valuation allowance, when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized. Deferred tax assets and liabilities are adjusted for the effects of changes in tax laws and rates on the date of enactment.

Inventories - The Cooperative's inventories are priced at cost. The Cooperative's inventory cost is determined by the average cost method.

Cash equivalents - The Cooperative considers all highly liquid investments with maturity of one year or less when purchased to be cash equivalents.

Accounts receivable - The Cooperative extends credit to its commercial and residential subscribers, the majority of whom reside in southwest Virginia. Accounts receivable are carried at original invoice amount less an estimate made for doubtful receivables based on a review of all outstanding amounts on a monthly basis. Management determines the allowance for doubtful accounts by identifying troubled accounts and by using historical experience applied to an aging of accounts.

Accounts receivable, which do not accrue interest, are written-off when deemed uncollectible. Recoveries of accounts receivable previously written-off are recorded when received.

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Depreciation - Depreciation is computed principally by the straight-line method. The estimated annual rates used to compute depreciation for financial reporting purposes are as stated below.

Property, plant, and equipment - Property, plant, and equipment in service and under construction are stated at cost. Listed below are the major classes of property, plant, and equipment.

	ESTIMATED ANNUAL DEPRECIATION RATES
Vehicles and other work equipment	10.00% - 12.86%
Buildings	2.86%
Furniture	6.33%
Leasehold improvements	2.86%
Central office and computer equipment	6.33% - 12.22%
Outside plant - pole, aerial, and buried	4.40% - 4.66%

**NOTE 3 - NATURE OF OPERATIONS DURING THE FORECAST PERIOD:**

Operating revenues and expenses - The following are significant assumptions for revenues and expenses:

General statement and historical reconciliation - The 2019 and 2020 revenues and expenses are based on actual, unaudited year-to-date balances. The 2021 revenues and expenses are based on annualized, unaudited balances from the year to date 2021 financials. Each financial statement line item was reviewed for any known and measurable items that could affect the amount. If any further adjustment was made, the assumption will be noted in the line items below. There are no gaps in between the historical period and the forecast period. The forecast period is December 31, 2021 through December 31, 2026.

Access line counts and projection assumptions - Existing access lines for the consolidated entity were gathered by service for 2019 and 2020. These categories were forecasted based on the historical trend for those years. The access lines for the new areas served are based on engineering data in the application, the total population, and the number of homes passed each quarter. SCTC projects to obtain a 60% take rate by the end of 2025 and will provide voice, video and broadband services.

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NOTE 3 - NATURE OF OPERATIONS DURING THE FORECAST PERIOD: (continued)  
Revenues:

	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
Voice	6,629	6,599	6,570	6,537	6,407	6,278	6,153	6,163
Broadband	6,942	7,323	7,719	8,027	8,348	8,682	9,030	9,040
Video	4,384	4,662	4,951	5,150	5,356	5,570	5,793	5,804
Security	250	275	300	325	326	327	328	300
Total Connections	<u>18,204</u>	<u>18,859</u>	<u>19,539</u>	<u>20,039</u>	<u>20,437</u>	<u>20,858</u>	<u>21,303</u>	<u>21,307</u>

1. Local voice service - Historically, Scott County Telephone Cooperative, Inc. (SCTC) has experienced a 1.07% decrease in voice lines in its ILEC study area. However, SCTC has seen a 1.7 to 2.5% increase in basic revenue per year based on local rate increases and additions in its non-ILEC areas. SCTC forecasts an average 8.02% increase on revenue, which is attributed to the net gains for new areas such as Lee and Wise counties. These areas are vastly underserved and SCTC has shown tremendous success in recent years in new areas. Also, SCTC has been proactive in rolling out new services and new bundle pricing. It is forecasted that this rate increase will help offset some of the revenue loss due to access line decrease.

Management forecasts a 10% take rate by the end of year one with an average bill of \$70 per month. Customer passing's will be 10,964 with 100 in Scott County, 4962 in Lee County, and 5902 in Wise County. Broadband penetration will be 60% by the end of 2025 with, phone at 25% in Lee and Wise Counties and 100% in Scott County. This trend is expected to continue through 2026. Based on the access line forecast, SCTC forecasted local revenues based on average revenue per unit (ARPU). Local revenue is based on an average ARPU of \$26.59 per month over the entire period 2019 to 2026. This price is inclusive of local service, features, and local bundles. The ARPU is based on an average historical and forecasted price.

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NOTE 3 - NATURE OF OPERATIONS DURING THE FORECAST PERIOD: (continued)

2. Broadband data service - Based on the access line forecast chart above, SCTC forecasted Data revenues based on an average ARPU of \$50.00 per month. The ARPU is based on the average historical price. The increases are from new areas served by the recently closed BIP award, other grants, and increases in the study area. This forecast is based on the engineering, which shows approximately 10,964 new homes passed. SCTC forecasts a 60% take rate by the end of 2025 for data service at an average price of \$50.00 per month. The areas included in this grant and their line increases are included above.
3. Video service - Based on the customer count forecast chart above, SCTC forecasted Video revenues based on an average ARPU of \$50.27 per month. This includes cable and video customers. The ARPU is based on an average historical and forecasted price. SCTC passes on content increases, including local channels as necessary.
4. Middle mile - SCTC has middle mile revenues from billings to other carriers for special and switched access. As the new plant is placed in service, new revenues will be derived from special access services from businesses including wireless companies purchasing access to towers from switched facilities. Based on current tariff rates and contracts this computes to approximately \$32,500 per year on average. SCTC is in the process of completing negotiations with various cell companies for special access that covers ten cells sites for transports and maintenance.
5. Network access - Since 2019, access has remained relatively flat with only minor variations. SCTC maintains annual plant upgrades to its regulated rate base, which, in turn helps in maintaining revenues from federal sources. Following the most recent FCC order, SCTC is well below Universal Service Fund caps and has not experienced any decrease from regulatory rule changes. Since regulated expenses are stable over the forecast period, SCTC expects a relatively flat access revenue change. Overall, this revenue category decreases on average about 7.14% per year for 2019 through 2026. Overall MOU is declining but Connect America Funds (CAF) and NECA settlements are relatively flat. This trend of decreasing MOU will continue. Also, by FCC order, the CAF will decrease at 5% per year. NECA settlements make up the difference as SCTC's rate base is projected to increase after the stimulus project and new facilities are constructed throughout the forecast period and recognized in settlements.
6. Universal Service Fund (USF) - SCTC's study area cost per loop will increase each year as new plant and regulated expenses are incurred. Due to the potential impacts of the FCC regulatory changes, SCTC forecasts USF to decrease by an average of 1.62% from 2019 to 2026.

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NOTE 3 - NATURE OF OPERATIONS DURING THE FORECAST PERIOD: (continued)

7. Toll service/long distance voice (Toll/LD) - Revenue is based on SCTC forecasted Toll/LD customer bill an average of \$29.64 per month. The ARPU is based on an average historical price. SCTC expects an average decline of 1.0% per year
  
8. Installation revenues - The installation revenue is based on new customers and the rate depends on what type of package is selected. The forecast for new installed customers per year is based on management’s forecast. The install revenue is forecasted to grow at a steady amount.
  
9. Uncollectible revenues - This line item has been calculated from the monthly open balance registers. Items over the 60 balance are considered for uncollectibility. As local revenues change, the amount of the uncollectible estimate does as well.
  
10. Other revenue - Other revenue is made up of security services, billing, collection, service charges, and AFUDC. Due to plant construction level and borrowings, this continues in 2021 and then new projects accelerate in 2022 through 2026 based on an average 12.0% increase each year based on historic trends.

Expenses:

1. Plant Specific - Backhaul/interconnection assumptions - These assumptions are based on the expense per customer per year. As the numbers of customers grow each year, the expense is expected to grow accordingly. Below is a description of each type of expense category relating to backhaul, IP, and video:
  - a. The December 31, 2020 cost for Plant Specific is \$3,811,569 or \$16.84 per customer per month with 18,859 total customer connections. SCTC will need more capacity as new broadband and video customers are added and previous cost savings have been absorbed. The average cost over the period is projected to be \$21.13 per customer per month. See the project description for the operational needs of the project.
  
  - b. The current Plant Non-Specific cost is \$4,983,314 at December 31, 2020 or \$34.65 per subscriber per month. There are 11,985 customers who have an Internet connection either for broadband or video. The average price per connection will decrease over time. The average cost over the period is projected to be \$34.40 per subscriber per month.



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NOTE 3 - NATURE OF OPERATIONS DURING THE FORECAST PERIOD: (continued)

- c. Video content cost is \$2,517,480 or \$45.00 per video and cable customer per month with 4,662 customers at December 31, 2020. As the number of customers grows the total cost will increase. The average cost per customer per month is expected to be more than \$50.00 due to pricing increases over time after 2021.
  
2. Plant Non-Specific - Network maintenance/monitoring - This is based on the payroll expense for the central office, cable, and wire, engineering, and general support departments. It is forecasted to increase by approximately 2.0% through 2026 for two reasons. First, as the fiber plant is deployed and the old copper plant removed, maintenance costs drop. Several temporary employees are expected to drop off the payroll in the forecast period. However, management plans to hire as many employees as possible in some of its non-regulated subsidiaries. Additionally, SCTC plans to hire two to three technicians to keep up with the new network beginning in 2021. Cost of living and raises account for the increase in 2021 through 2026.
  
3. Utilities expense - SCTC forecasts that power expenses will increase based on the need of the new network electronic equipment, which should increase modestly from 2021 to 2026.
  
4. Sales/marketing - SCTC forecasts a modest decline throughout the forecast period as new areas of service can be marketed through existing advertisement. Employee attrition is projected in 2021 and 2026 for retirements and consolidations.
  
5. Customer care - SCTC forecasts a consistent balance to small decline as existing customer service personnel will be able to attend to the new service areas. Employee attrition is projected in 2021 and 2026 for retirements and consolidations.
  
6. Corporate G&A - Management expects this and customer care expenses will increase by 7.65% each year based on normalized trends.
  
7. Property taxes - As a new plant is completed, property taxes will accrue on the plant in service. The taxes are expected to increase each year as a new plant is constructed. Taxes are approximately .45% of gross plant.
  
8. Depreciation - Depreciation is calculated based on historically approved depreciation rates times the plant in service balance. The average depreciable life is 20 years since the majority of the plant relates to cable and wire fiber facilities. Plant is forecasted to increase each year as SCTC completes its five year construction plan and maintains upgrades each year.

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NOTE 4 - BALANCE SHEET AND CASH FLOW STATEMENTS:

The balance sheet items other than the ones discussed above were forecasted using one or a combination of several techniques. Trends were used where feasible and then known and measurable items were taken into account. The following summarizes the significant assumptions impacting the balance sheet line items and cash flow statements:

1. General - The starting point of the forecasted balance sheet is based on the general ledger as of December 31, 2020. Then, any items that are known and measurable were applied to approximate the balance as of the end of each forecasted year. Any adjustments made are described in the assumptions below. SCTC is rate regulated under Part 32 and its Board of Directors.
2. Cash and forecasted cash flow statements - SCTC has historically enjoyed a strong cash balance as management balances leverage with plant investment. The balance at 2020 of \$5.0 million will be used over time for plant upgrades.
3. Current assets - No significant changes are anticipated. This line item includes accounts receivables and inventory.
4. Accounts receivable - SCTC forecasts that connection counts will increase based on historical trends, new services, and new areas. New revenues are from customers for broadband and video. Accounts receivable is approximately 4% of revenues. SCTC has very strong collection policies in place with most of its accounts receivable in the less than 60 days category.
5. Non-current assets - No significant changes are expected. This line item is based on investments in securities and affiliated subsidiaries, in compliance with, the equity method of recording investments.
6. Property, plant, and equipment - SCTC plans on building needed plant upgrades and continuing its five year construction plan process. Historically, SCTC has added, on average, approximately \$1,000,000 to \$14,000,000, using part cash flow and part leverage as needed. Most of the plant relates to fiber build outs in SCTC member areas. This is the main use of cash at SCTC. See Attachment 9 – VATI Funding Sources Table for the VATI grant request, the SCTC match and the corresponding County Grant matches. SCTC plans to complete the project by 2022 with customers being added in 2022 to 2025.
7. Current liabilities - No significant changes are expected for accounts payables, accrued liabilities, or SCTC’s current debt structure. This line item is expected to decrease as SCTC pays its accounts payable down each year. SCTC pays invoices as they come in each week after proper review.

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NOTE 4 - BALANCE SHEET AND CASH FLOW STATEMENTS: (continued)

8. Non-current liabilities - No significant changes are expected for SCTC's long-term debt structure or its post retirement benefit plans. Principal payments continue based on the amortization schedule.
9. Equity - No significant changes are expected. Additions to patronage capital come from net margins and no distributions are expected.
10. Capital stock - No significant change is expected nor forecasted.
11. Accumulated other comprehensive income - This amount represents the effects of ASC Topic 715-30 relating to pensions. This relatively new accounting standard requires companies to recognize in equity the impacts of initial transition costs when it adopted its new retirement plan. No significant change is expected.
12. Patronage capital credits - This amount is affected by income or loss. See the comments made for the statements of equity for other assumptions.

Cash Flow Statement:

1. General - The cash flow statement was prepared using the indirect method and is composed of an operating, investing, and financing section. No estimate of cash paid for interest was made. The preparation of the cash flow is based on the changes in the balance sheet and any non-cash items from the income statement, for example, depreciation. The underlying assumptions for the balance sheet and income statement drive the numbers on the cash flow; therefore, no detailed explanation is warranted here. Please review the assumptions for the other financial statements.
2. Operating - Cash flow from operations is impacted by net income, depreciation, current assets, and current liabilities. As net income increases over the forecast period so does the corresponding cash. This is a significant source of cash.

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NOTE 4 - BALANCE SHEET AND CASH FLOW STATEMENTS: (continued)

3. Investing - Cash flow from investing activities is impacted primarily from the acquisition and construction of plant. SCTC forecasts plant construction based on the engineering in this grant application. This is the major use of cash. The capital investments will begin in 2021 and be completed in 2023. As far as other capital additions outside of the grant process, SCTC is in the process of constructing several new areas with a combination of loans, grants, and cash flow from operations. Most of the investment is for cable and wire facilities to fulfill its obligations under RUS current work plan, state of Virginia grants, and FCC directives for broadband. The SCTC grant match portion is specifically broken out while the three County matching grants are included in the capital expenditure line along with the VATI grant amounts. See Attachment 9 VATI funding sources for the detail of all of the grants.
  
4. Financing - Cash flow from financing activities is impacted primarily by the borrowing and repayment of long-term debt. The principle payments are based on the projected amortization schedule of debt for this loan, as well as, existing debt. The proceeds or new borrowings are based on the FRS forms submitted to RUS as plant is constructed. This is a major source of cash.
  - a. Sale of equity - None is forecasted.
  
  - b. Proceeds from existing debt - None is forecasted.
  
  - c. Repayments debt - The outstanding debt is from RUS and is paid back over a 16 year time period at an average rate of 4.78%.
  
  - d. Payments of patronage capital credits - No payments of capital credits are forecasted.
  
  - e. Payments of dividends - No payments of dividends are forecasted.
  
5. Cash and cash equivalents at the end of the year - Management prefers to have a reasonable amount of cash that is secured in various banks and short-term investments. SCTC considers any investment with a maturity date of one year or less to be cash equivalent.



PO Box 1810  
Honaker, Virginia 24260



August 2021

Page: 1 of 3  
Primary Account: 20000063

Reporting Activity 07/30 - 08/31

Scan code or visit  
[www.newpeoples.bank](http://www.newpeoples.bank)  
for maps, hours and contact info.

Total of All Accounts included:  
\$3,605,969.24

001334 0.6200 AV 0.426  
SCOTT COUNTY TELEPHONE C0 0P  
PO BOX 487  
GATE CITY, VA 24251-0487



**Contact Information:**  
New Peoples Bank - Gate City  
663 E. Jackson St  
Gate City VA 24251  
  
Phone: 276-386-9300  
Telephone Banking: Press Option 1



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Important update for Business Visa Check Cardholders: We are pleased to inform you that we have increased the default daily point of sale limit for purchases to \$7,500 and the daily ATM cash withdrawal limit to \$500.

BUSINESS CHOICE-EC ACCOUNT				Account: 20000063	
Last Statement	Previous Balance	This Statement	Current Balance	Total Credits	Total Debits
07/30/21	252,790.67	08/31/21	181,458.22	588,584.58 (64)	659,917.03 (14)

Minimum Balance 79,163.86  
Average Balance 195,946.26

TRANSACTIONS					
Date	Description	Debits	Credits	Balance	
07/30/21	Balance Last Statement			252,790.67	
08/02/21	Stripe Transfer St-T4a11n7w5z2		144.61	252,935.28	
08/02/21	Scott County Tel Billpay Cust Payments		4,490.53	257,425.81	
08/02/21	Merchant Bnkcd Deposit 267042023882		14,560.47	271,986.28	
08/03/21	Stripe Transfer St-G5f9v9p9i0w2		133.09	272,119.37	
08/03/21	Scott County Tel Billpay Cust Payments		5,201.44	277,320.81	
08/03/21	Merchant Bnkcd Deposit 267042023882		36,112.35	313,433.16	
08/03/21	Authnet Gateway Billing XXXXX0375	37.95		313,395.21	
08/03/21	Merchant Bnkcd Discount 267042023882	480.27		312,914.94	
08/03/21	Merchant Bnkcd Fee 267042023882	553.88		312,361.06	
08/03/21	Cds Global Payments Paydq Fees	2,645.20		309,715.86	
08/03/21	Merchant Bnkcd Interchng 267042023882	4,638.79		305,077.07	
08/04/21	Stripe Transfer St-Y1y9h7m8l8j7		298.57	305,375.64	
08/04/21	Scott County Tel Billpay Cust Payments		17,111.67	322,487.31	

Continued on Next Page

**PREMIER CLIENT STATEMENT**

**ACCOUNT SUMMARY**

	This Period August 1, 2021	Year-to-Date January 1, 2021
<b>Beginning Balance</b>	<b>\$361,296.07</b>	<b>\$353,184.09</b>
Cash Deposits		
Cash Withdrawals	594.62	6,848.76
Income and Distributions		
Other Transactions		
Change in Value*	-1,111.84	746.00
<b>Total Assets:</b>	<b>\$360,778.85</b>	<b>\$360,778.85</b>
August 31, 2021		

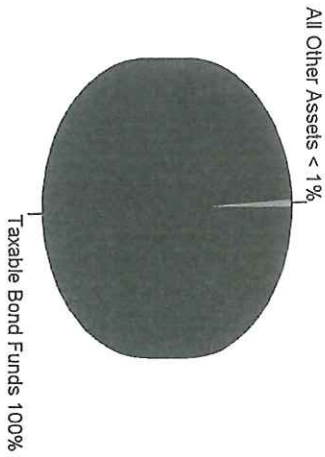
\* Change in Value may include assets received in and/or delivered out.

**INVESTMENT OBJECTIVE**

Capital Preservation

If you have any questions concerning your investment objective, or wish to make a change, please contact your Baird Financial Advisor.

**ASSET ALLOCATION**



Robert W. Baird & Co. Incorporated  
 777 East Wisconsin Avenue Milwaukee, WI 53202-5391  
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Statement Period: **AUGUST 1 - AUGUST 31, 2021**  
 Account Number: [REDACTED]  
 Account Solution: Brokerage  
 For more information, go to [www.bairdwealth.com/retailinvestor](http://www.bairdwealth.com/retailinvestor)

REC'D SEP 07 2021

R30G1 02 01414 0006 0001 0003 09/01/2021

SCOTT COUNTY TELEPHONE CO OP  
 WOODLAND ST  
 PO BOX 487  
 GATE CITY VA 24251-0487

**FROM YOUR BAIRD FINANCIAL ADVISOR**

The Maupin Elders Group  
 Telephone: (423) 246-5222

Office Servicing Your Account  
 1555 S. Wilcox Drive, Suite 1  
 Kingsport TN 37660

**Current Opportunities**

The June 30, 2021 unaudited statement of financial condition for Robert W. Baird & Co. Inc. is available at [rwbaird.com](http://rwbaird.com). A printed copy is also available by calling 1-888-792-3210. Baird's net capital was approximately \$544,412,000 which is approximately \$537,510,000 in excess of the required minimum amount.

**Portfolio Bulletin Board**

Contact your Baird Financial Advisor if you are interested in investment alternatives.

**Account Protection**

Assets in your Baird account are protected by SIPC, subject to applicable limits. Baird provides additional coverage in excess of SIPC limits through an insurance policy with Lloyd's of London. Your balances in the bank deposit account are insured by the FDIC subject to applicable limits. For more information on FDIC insurance, please see [rwbaird.com/cashsweeps](http://rwbaird.com/cashsweeps).

# Full Analysis Bus Chk - [REDACTED]



## Summary

Available balance (as of today):

**\$10,336.26**

What does this include?

Account balance history >>

## Features

Payroll services:

Enroll

Account management:

Enroll

Paperless statements:

Enroll

More features >>

Activity

Statements & Documents

Information & Services

All Transactions



View Spending & Budgeting

More options >>

Newest | Next | Previous | Oldest

Show deals: On >> | Download >> | Print this view

Date ↓

Description

Type

Status

Amount

Available Balance

We were unable to find any transactions matching All Types, All available dates (18 months)

Icon legend

Newest | Next | Previous | Oldest


Show deals: On >> | Download >> | Print this view



P.O. Box 15284  
Wilmington, DE 19850

SCOTT COUNTY TELEPHONE COOP  
GENERAL FUND  
PO BOX 487  
GATE CITY, VA 24251-0487

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-  Customer service: 1.888.400.9009
-  bankofamerica.com
-  Bank of America, N.A.  
P.O. Box 27025  
Richmond, Virginia 23261-7025

## Your Full Analysis Business Checking

for August 1, 2021 to August 31, 2021

**SCOTT COUNTY TELEPHONE COOP GENERAL FUND**

### Account summary

Beginning balance on August 1, 2021	\$1,518,170.35
Deposits and other credits	1,854,026.88
Withdrawals and other debits	-684,943.46
Checks	-1,481,105.61
Service fees	-1,366.23
<b>Ending balance on August 31, 2021</b>	<b>\$1,204,781.93</b>

Account number: 

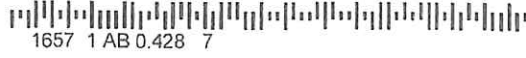
# of deposits/credits: 45  
 # of withdrawals/debits: 254  
 # of days in cycle: 31  
 Average ledger balance: \$1,299,906.34




1130.006

 THE BANK OF  
**MARION**  
P.O. Box 1067, Marion, VA 24354  
Return Service Requested  
TELEPHONE: 276-783-3116

30  
0  
0



 SCOTT COUNTY TELPHONE COOPERAT  
PO BOX 487  
GATE CITY, VA 24251-0487

REC'D SEP 09 2021

1-1VBM-DDAs-01 210902  
001-001-001657 000216664

=====

NONPER HOMETOWN MMCA ACCOUNT 8920915031

=====

DESCRIPTION	DEBITS	CREDITS	DATE	BALANCE
BALANCE LAST STATEMENT .....			07/30/21	52,894.07
INTEREST .....		2.32	08/31/21	52,896.39
BALANCE THIS STATEMENT .....			08/31/21	52,896.39
TOTAL CREDITS (1)	2.32			
TOTAL DEBITS (0)	.00			

JE 4339

- - - - - I N T E R E S T - - - - -

AVERAGE LEDGER BALANCE:	52,894.07	INTEREST EARNED:	2.32
INTEREST PAID THIS PERIOD:	2.32	DAYS IN PERIOD:	32
INTEREST PAID 2021:	17.60	ANNUAL PERCENTAGE YIELD EARNED:	.05%

001337



PO Box 1810  
Honaker, Virginia 24260

Return Service Requested



August 2021

Page: 1 of 1  
Primary Account: [REDACTED]

Reporting Activity 07/30 - 08/31

Scan code or visit  
[www.newpeoples.bank](http://www.newpeoples.bank)  
for maps, hours and contact info.


REC'D SEP 09 2021

001337 0.4500 AV 0.426 TR00005



NEPB SCOTT COUNTY TELEPHONE C0 0P  
VIRGINIA GRANT ACCOUNT  
PO BOX 487  
GATE CITY, VA 24251-0487

Contact Information:  
New Peoples Bank - Gate City  
663 E Jackson St  
Gate City VA 24251  
Phone: 276-386-9300  
Telephone Banking: Press Option 1




**HOME EQUITY LINE OF CREDIT**

MAY BORROW UP TO  
**100%**  
OF YOUR HOME VALUE

**NO CLOSING COSTS**

Offer available for a limited time. Restrictions apply. Subject to credit and appraisal approval. New Peoples Bank reserves the right to discontinue offer without notice.



Important update for Business Visa Check Cardholders: We are pleased to inform you that we have increased the default daily point of sale limit for purchases to \$7,500 and the daily ATM cash withdrawal limit to \$500.

BUSINESS 500 ACCOUNT				Account: 110002946	
Last Statement	Previous Balance	This Statement	Current Balance	Total Credits	Total Debits
07/30/21	684.67	08/31/21	684.67	0.00	0.00

Minimum Balance 684.67  
Average Balance 684.67

**TRANSACTIONS**

Date	Description	Debits	Credits	Balance
07/30/21	Balance Last Statement			684.67
08/31/21	Balance This Statement			684.67

NEPB-001-001337-001-000-210901 001337 K05  
24251048787

001336



PO Box 1810  
Honaker, Virginia 24260

Return Service Requested



August 2021

Page: 1 of 1  
Primary Account: [REDACTED]

Reporting Activity 07/30 - 08/31


Scan code or visit  
[www.newpeoples.bank](http://www.newpeoples.bank)  
for maps, hours and contact info.



REC'D SEP 09 2021  
001336 0.4500 AV 0.426 TR00005

NEPB SCTC MANAGEMENT GROUP INC  
PO BOX 487  
GATE CITY, VA 24251-0487

Contact Information:  
New Peoples Bank - Gate City  
663 E Jackson St  
Gate City VA 24251  
Phone: 276-386-9300  
Telephone Banking: Press Option 1




**HOME EQUITY LINE OF CREDIT**

MAY BORROW UP TO  
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OF YOUR HOME VALUE

**NO CLOSING COSTS**

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Important update for Business Visa Check Cardholders: We are pleased to inform you that we have increased the default daily point of sale limit for purchases to \$7,500 and the daily ATM cash withdrawal limit to \$500.

BUSINESS 500 ACCOUNT				Account: 110002524	
Last Statement	Previous Balance	This Statement	Current Balance	Total Credits	Total Debits
07/30/21	5,199.96	08/31/21	5,199.96	0.00	0.00

Minimum Balance 5,199.96  
Average Balance 5,199.96

**TRANSACTIONS**

Date	Description	Debits	Credits	Balance
07/30/21	Balance Last Statement	.....	.....	5,199.96
08/31/21	Balance This Statement	.....	.....	5,199.96

K05  
NEPB-001-001336-001-000-210901 001336  
24251048787

001335



PO Box 1810  
Honaker, Virginia 24260

Return Service Requested



August 2021

Page: 1 of 5  
Primary Account: [REDACTED]

Reporting Activity 07/30 - 08/31

Scan code or visit  
[www.newpeoples.bank](http://www.newpeoples.bank)  
for maps, hours and contact info.

REC'D SEP 09 2021

001335 0.9600 AV 0.426 TR00005



NEPB  
MOUNTAINET  
PO BOX 487  
GATE CITY, VA 24251-0487

Contact Information:  
New Peoples Bank - Gate City  
663 E Jackson St  
Gate City VA 24251  
Phone: 276-386-9300  
Telephone Banking: Press Option 1

**HOME EQUITY LINE OF CREDIT**  
MAY BORROW UP TO  
**100%**  
OF YOUR HOME VALUE

**NO CLOSING COSTS**

Offer available for a limited time. Restrictions apply. Subject to credit and appraisal approval. New Peoples Bank reserves the right to discontinue offer without notice.

Important update for Business Visa Check Cardholders: We are pleased to inform you that we have increased the default daily point of sale limit for purchases to \$7,500 and the daily ATM cash withdrawal limit to \$500.

**BUSINESS CHOICE-EC ACCOUNT** Account: 20003729

Last Statement	Previous Balance	This Statement	Current Balance	Total Credits	Total Debits
07/30/21	131,458.31	08/31/21	180,167.29	105,496.86 (8)	56,787.88 (24)

Minimum Balance 118,472.60  
Average Balance 175,117.82

**TRANSACTIONS**

Date	Description	Debits	Credits	Balance
07/30/21	Balance Last Statement			131,458.31
08/02/21	XXXXXX2759 080121 #xxxxxx2759		798.00	132,256.31
08/03/21	Check # 14669	250.00		132,006.31
08/03/21	Check # 14676	2,000.00		130,006.31
08/03/21	Check # 14677	11,533.71		118,472.60
08/05/21	Etsu Vendor Pmt Invoice E00018949		3,830.61	122,303.21
08/06/21	Bank Of Tennessee Banktel 5307		403.65	122,706.86
08/09/21	Transfer Money		100,000.00	222,706.86
08/09/21	Etsu Vendor Pmt Invoice E00018949		188.21	222,895.07
08/09/21	Check # 14679	700.00		222,195.07
08/10/21	Check # 14678	284.00		221,911.07
08/10/21	Check # 14681	1,500.00		220,411.07
08/11/21	Bank Of Tennessee Banktel 5307		1.39	220,412.46
08/11/21	Check # 14680	400.00		220,012.46

Continued on Next Page

NOTICE: SEE REVERSE SIDE FOR IMPORTANT INFORMATION

NEPB-004-001335-001-003-210901 001335 K05  
24251048787

001333



PO Box 1810  
Honaker, Virginia 24260

Return Service Requested



August 2021

1130,908

Page: 1 of 6  
Primary Account: [REDACTED]

Reporting Activity 07/30 - 08/31

Scan code or visit  
[www.newpeoples.bank](http://www.newpeoples.bank)  
for maps, hours and contact info.


REC'D SEP 09 2021

001333 0.9600 AV 0.426 TR00005



NEPB SCOTT TELECOM AND ELECTRONICS  
PO BOX 487  
GATE CITY, VA 24251-0487


Contact Information:  
New Peoples Bank - Gate City  
663 E Jackson St  
Gate City VA 24251  
Phone: 276-386-9300  
Telephone Banking: Press Option 1



**HOME EQUITY LINE OF CREDIT**  
MAY BORROW UP TO  
**100%**  
OF YOUR HOME VALUE

**NO CLOSING COSTS**

Offer available for a limited time. Restrictions apply. Subject to credit and appraisal approval. New Peoples Bank reserves the right to discontinue offer without notice.



Important update for Business Visa Check Cardholders: We are pleased to inform you that we have increased the default daily point of sale limit for purchases to \$7,500 and the daily ATM cash withdrawal limit to \$500.

BUSINESS CHOICE-EC ACCOUNT				Account: 20000055	
Last Statement	Previous Balance	This Statement	Current Balance	Total Credits	Total Debits
07/30/21	147,736.44	08/31/21	60,252.51	150,621.87 (3)	238,105.80 (32)

Minimum Balance 60,252.51  
Average Balance 152,646.64

TRANSACTIONS					
Date	Description		Debits	Credits	Balance
07/30/21	Balance Last Statement				147,736.44
08/02/21	Check # 23956		1,382.94		146,353.50
08/02/21	Check # 23957		41,616.75		104,736.75
08/02/21	Check # 23960		1,065.43		103,671.32
08/03/21	Check # 23952		3,789.20		99,882.12
08/03/21	Check # 23955		4,526.55		95,355.57
08/03/21	Check # 23958		19,581.80		75,773.77
08/04/21	Transfer Money			150,000.00	225,773.77
08/04/21	Check # 23959		1,163.75		224,610.02
08/04/21	Check # 23961		1,601.60		223,008.42
08/05/21	Check # 23953		281.70		222,726.72
08/06/21	Check # 23954		17,990.72		204,736.00
08/06/21	Check # 23963		95.99		204,640.01
08/10/21	Check # 23962		38,669.12		165,970.89

Continued on Next Page

NOTICE: SEE REVERSE SIDE FOR IMPORTANT INFORMATION

K05

NEPB-004-001333-001-003-210901 001333 24251048787



P.O. Box 15284  
Wilmington, DE 19850

SCOTT COUNTY TELEPHONE COOPERATIVE  
PO BOX 487  
GATE CITY, VA 24251-0487

**Customer service information**

- Customer service: 1.888.400.9009
- bankofamerica.com
- Bank of America, N.A.  
P.O. Box 27025  
Richmond, Virginia 23261-7025

## Your Business Economy Checking

for August 1, 2021 to August 31, 2021

**SCOTT COUNTY TELEPHONE COOPERATIVE**

Account number: XXXXXXXXXXXX09113072109

### Account summary

Beginning balance on August 1, 2021	\$77,970.75
Deposits and other credits	0.00
Withdrawals and other debits	-4,392.98
Checks	-0.00
Service fees	-0.00
<b>Ending balance on August 31, 2021</b>	<b>\$73,577.77</b>

# of deposits/credits: 0  
 # of withdrawals/debits: 8  
 # of deposited items: 0  
 # of days in cycle: 31  
 Average ledger balance: \$77,174.11

BUSINESS ADVANTAGE

## Thanks. We're here to listen to you.

As your business needs evolve, we're ready to provide personal attention and access to the latest digital tools. Rely on us for guidance in personal finance, investments and business — now and in the future.

To learn more visit [bankofamerica.com/SmallBusiness](https://bankofamerica.com/SmallBusiness).

SSM-10-20-0899B | 3293362



P.O. Box 15284  
Wilmington, DE 19850

SCOTT COUNTY TELEPHONE COOPERATIVE  
PAYROLL ACCOUNT  
PO BOX 487  
GATE CITY, VA 24251-0487

**Customer service information**

- Customer service: 1.888.400.9009
- bankofamerica.com
- Bank of America, N.A.  
P.O. Box 27025  
Richmond, Virginia 23261-7025

## Your Full Analysis Business Checking - Small Business

for August 1, 2021 to August 31, 2021

Account number: XXXXXXXXXX

**SCOTT COUNTY TELEPHONE COOPERATIVE PAYROLL ACCOUNT**

### Account summary

Beginning balance on August 1, 2021	\$1,271.63
Deposits and other credits	190,454.00
Withdrawals and other debits	-190,454.00
Checks	-0.00
Service fees	-0.00
<b>Ending balance on August 31, 2021</b>	<b>\$1,271.63</b>

# of deposits/credits: 2  
 # of withdrawals/debits: 5  
 # of days in cycle: 31  
 Average ledger balance: \$1,401.95

Eastman Credit Union

09/08/2021 05:27 PM

**SCTC Business Checking**Available\*\* **\$1,121,146.49****Current \$1,121,146.49****Aug 1, 2021 - Aug 31, 2021 Custom**

Date	Description	Amount	Balance
08/31/2021	Excess of 500 Items Charge	-\$254.20	\$867,829.22
08/31/2021	Credit Dividend	\$95.57	\$868,083.42
08/30/2021	Deposit	\$498,076.88	\$867,987.85
08/24/2021	Deposit	\$2,727.72	\$369,910.97
08/24/2021	Deposit	\$1,447.38	\$367,183.25
08/24/2021	Deposit	\$211,656.09	\$365,735.87
08/20/2021	Deposit	\$643.54	\$154,079.78
08/20/2021	Deposit	\$41,860.12	\$153,436.24
08/19/2021	Deposit	\$315.20	\$111,576.12
08/19/2021	Deposit	\$1,053.40	\$111,260.92
08/19/2021	Deposit	\$2,005.86	\$110,207.52
08/19/2021	Deposit	\$1,718.97	\$108,201.66
08/19/2021	Deposit	\$8,614.57	\$106,482.69
08/19/2021	Ext W/D IRS - USATAXPYMT / 270163141243711	-\$38,988.05	\$97,868.12
08/16/2021	Deposit	\$4,574.69	\$136,856.17
08/16/2021	Deposit	\$8,848.92	\$132,281.48
08/13/2021	Deposit	\$5,565.29	\$123,432.56
08/13/2021	Deposit	\$3,427.89	\$117,867.27
08/13/2021	Ext W/D Scott Co Tel 03 DISC / DATA - CASH CONC	-\$900,000.00	\$114,439.38
08/12/2021	Deposit	\$10,931.89	\$1,014,439.38
08/12/2021	Deposit	\$4,541.70	\$1,003,507.49
08/12/2021	Deposit transfer money 8-12-21	\$350,000.00	\$998,965.79
08/11/2021	Deposit	\$12,439.18	\$648,965.79
08/11/2021	Deposit	\$10,460.14	\$636,526.61
08/11/2021	Deposit	\$1,378.44	\$626,066.47
08/11/2021	Deposit	\$27,981.69	\$624,688.03
08/11/2021	Ext W/D IRS - USATAXPYMT / 270162323800141	-\$3,992.22	\$596,706.34
08/10/2021	Deposit	\$4,569.75	\$600,698.56
08/10/2021	Deposit	\$56,057.29	\$596,128.81



Eastman Credit Union

09/08/2021 05:27 PM

**PVEC Fiber Business Checking** [REDACTED]

Available\*\* \$180,779.67

Current **\$180,779.67****Aug 1, 2021 - Aug 31, 2021 Custom**

Date	Description	Amount	Balance
08/31/2021	Credit Dividend	\$52.98	\$129,123.90
08/31/2021	Ext Deposit PVEC FIBER PVEC / FIBER - BILLPAY CUST PAYMENTS	\$356.00	\$129,070.92
08/31/2021	Ext Deposit MERCHANT BNKCD - / DEPOSIT 266374387881	\$1,963.84	\$128,714.92
08/30/2021	Deposit	\$5,030.38	\$126,751.08
08/30/2021	Ext Deposit PVEC FIBER PVEC / FIBER - BILLPAY CUST PAYMENTS	\$786.51	\$121,720.70
08/30/2021	Ext Deposit MERCHANT BNKCD - / DEPOSIT 266374387881	\$1,401.08	\$120,934.19
08/27/2021	Ext Deposit PVEC FIBER PVEC / FIBER - BILLPAY CUST PAYMENTS	\$560.72	\$119,533.11
08/27/2021	Ext Deposit MERCHANT BNKCD - / DEPOSIT 266374387881	\$861.97	\$118,972.39
08/26/2021	Ext Deposit PVEC FIBER PVEC / FIBER - BILLPAY CUST PAYMENTS	\$841.15	\$118,110.42
08/26/2021	Ext Deposit MERCHANT BNKCD - / DEPOSIT 266374387881	\$1,230.77	\$117,269.27
08/25/2021	Ext Deposit PVEC FIBER PVEC / FIBER - BILLPAY CUST PAYMENTS	\$343.00	\$116,038.50
08/25/2021	Ext Deposit MERCHANT BNKCD - / DEPOSIT 266374387881	\$1,638.70	\$115,695.50
08/24/2021	Ext Deposit MERCHANT BNKCD - / DEPOSIT 266374387881	\$837.90	\$114,056.80
08/23/2021	Ext Deposit PVEC FIBER PVEC / FIBER - BILLPAY CUST PAYMENTS	\$270.22	\$113,218.90
08/23/2021	Ext Deposit MERCHANT BNKCD - / DEPOSIT 266374387881	\$848.69	\$112,948.68
08/20/2021	Deposit	\$329.60	\$112,099.99
08/20/2021	Ext Deposit PVEC FIBER PVEC / FIBER - BILLPAY CUST PAYMENTS	\$94.95	\$111,770.39
08/20/2021	Ext Deposit MERCHANT BNKCD - / DEPOSIT 266374387881	\$775.23	\$111,675.44
08/19/2021	Deposit	\$806.50	\$110,900.21
08/19/2021	Ext Deposit PVEC FIBER PVEC / FIBER - BILLPAY CUST PAYMENTS	\$422.54	\$110,093.71
08/19/2021	Ext Deposit MERCHANT BNKCD - / DEPOSIT 266374387881	\$735.96	\$109,671.17
08/18/2021	Ext Deposit PVEC FIBER PVEC / FIBER - BILLPAY CUST PAYMENTS	\$634.57	\$108,935.21
08/18/2021	Ext Deposit MERCHANT BNKCD - / DEPOSIT 266374387881	\$1,426.01	\$108,300.64
08/17/2021	Ext Deposit PVEC FIBER PVEC / FIBER - BILLPAY CUST PAYMENTS	\$697.55	\$106,874.63
08/17/2021	Ext Deposit MERCHANT BNKCD - / DEPOSIT 266374387881	\$957.06	\$106,177.08
08/16/2021	Ext W/D PVEC FIBER PVEC FIBER - / BILLPAY BANK RETURNS	-\$126.22	\$105,220.02
08/16/2021	Ext Deposit PVEC FIBER PVEC / FIBER - BILLPAY CUST PAYMENTS	\$400.24	\$105,346.24
08/16/2021	Ext Deposit MERCHANT BNKCD - / DEPOSIT 266374387881	\$1,449.02	\$104,946.00
08/13/2021	Deposit	\$483.77	\$103,496.98

Eastman Credit Union

09/08/2021 05:28 PM

**Scott Co Telephone Cooperative Savings** [REDACTED]

Available\*\* **\$172,632.60**

Current **\$172,637.60**

YTD dividend **\$1,018.20**

**Aug 1, 2021 - Aug 31, 2021 Custom**

Date	Description	Amount	Balance
08/31/2021	Credit Dividend	\$43.98	\$172,637.60

\*\* This balance may include overdraft or line of credit funds.

# SENATE OF VIRGINIA



**TODD E. PILLION**  
40<sup>TH</sup> SENATORIAL DISTRICT  
ALL OF GRAYSON, LEE, SCOTT, AND WASHINGTON  
COUNTIES; ALL OF THE CITY OF BRISTOL; AND PART  
OF SMYTH, WISE, AND WYTHE COUNTIES  
  
851 FRENCH MOORE JR. BOULEVARD  
ABINGDON, VIRGINIA 24210  
(276) 220-1209

COMMITTEE ASSIGNMENTS:  
AGRICULTURE, CONSERVATION AND  
NATURAL RESOURCES  
EDUCATION AND HEALTH  
GENERAL LAWS AND TECHNOLOGY  
LOCAL GOVERNMENT

September 8, 2021

Ms. Tamarah Holmes, Ph.D  
Director, Office of Broadband  
Virginia Department of Housing and Community Development  
600 E Main Street, Suite 300  
Richmond, VA 23219

Dear Dr. Holmes:

I am writing in support of the LENOWISCO Planning District Commission's application for a Virginia Telecommunications Initiative (VATI) grant through the Virginia Department of Housing and Community Development (DHCD). This District-Wide initiative, in cooperation with Scott County Telephone Cooperative (SCTC) and Powell Valley Electric Cooperative (PVEC), will generate an immediate and self-sustaining benefit to southwest Virginia, as well as contributing to the General Assembly's and administration's shared goal of achieving universal broadband access. I would like to offer my strong support of the project.

The goal is to construct a Fiber-to-the-Premises project that will provide a robust, reliable and affordable broadband G-PON connection to support up to ten (10) gigabit of bandwidth to each customer premise. If approved, the availability of broadband services will enhance Lee, Wise and Scott County's ability to operate more efficiently and attract new businesses. This project will promote economic development, improve the educational opportunities for all students, enhance telemedicine services, as well as improve the quality of life for each individual in the areas to be served. This VATI grant will be vital to the Region and will pass 10,964 total locations with an investment of \$28,545,000.00.

I am confident all partners involved are dedicated to meet the goals of the VATI Program in the vital deployment of broadband. I strongly support the application of the LENOWISCO Planning District and urge favorable consideration by the DHCD. Please feel free to contact me anytime with questions.

Thank you for your time and consideration of this much needed project.

Sincerely,

A handwritten signature in black ink, appearing to read 'T. Pillion'.

Todd Pillion  
Senator, 40<sup>th</sup> District



COMMONWEALTH OF VIRGINIA

HOUSE OF DELEGATES  
RICHMOND

TERRY G. KILGORE  
POST OFFICE BOX 669  
GATE CITY, VIRGINIA 24251

FIRST DISTRICT

COMMITTEE ASSIGNMENTS:  
COURTS OF JUSTICE  
LABOR AND COMMERCE  
RULES

September 8, 2021

Dr. Tamarah Holmes  
Director, Office of Broadband  
Virginia Department of Housing and Community Development  
600 E. Main Street, Suite 300  
Richmond, VA 23219

RE: LENOWISCO District-Wide Broadband Project

Dear Dr. Holmes:

I am writing in strong support of the LENOWISCO Planning District Commission's application for a Virginia Telecommunications Initiative (VATI) grant through the Virginia Department of Housing and Community Development (DHCD). This district-wide initiative, in cooperation with Scott County Telephone Cooperative (SCTC) and Powell Valley Electric Cooperative (PVEC), will generate an immediate and self-sustaining benefit to Southwest Virginia.

The goal is to construct a Fiber-to-the-Premises project that will provide a robust, reliable, and affordable broadband G-PON connection to support up to ten (10) gigabit of bandwidth to each customer's residence. If approved, the availability of broadband services will enhance Lee, Scott, and Wise County's ability to operate more efficiently and attract new businesses. This project will promote economic development, improve the educational opportunities for all students, enhance telemedicine services, as well as improve the quality of life for each individual in the areas to be served. This VATI grant will be vital to the region and will pass 10,964 total locations with an investment of \$28,545,000.00.

I feel all partners involved are dedicated to meet the goals of the VATI Program in the vital deployment of broadband. Again, I strongly support the application of the LENOWISCO Planning District and urge favorable consideration by DHCD. I sincerely appreciate your time and consideration of this much needed project for far Southwest Virginia. If you have any questions, please do not hesitate to contact my office.

Sincerely,

A handwritten signature in black ink that reads "Terry G. Kilgore".

Delegate Terry G. Kilgore  
First District



Office of the Town Manager

Stephen L. Lawson

September 13, 2021

Ms. Tammy L. Breski  
Telecommunications and Broadband Specialist  
Virginia Department of Housing and Community Development  
600 E Main Street, Suite 300  
Richmond, VA 23219

**RE: LENOWISCO District-Wide Broadband Project**

Dear Ms. Breski:

I am writing in support of the LENOWISCO Planning District Commission's application for a Virginia Telecommunications Initiative (VATI) grant through the Virginia Department of Housing and Community Development (DHCD). This District-Wide initiative, in cooperation with Scott County Telephone Cooperative (SCTC), will generate an immediate and self-sustaining benefit to southwest Virginia. I would like to offer my strong support of the project.

The goal is to construct a Fiber-to-the-Premise project that will provide a robust, reliable and affordable broadband G-PON connection to support up to ten (10) gigabit of bandwidth to each customer premise. If approved, the availability of broadband services will enhance Lee, Wise and Scott County's ability to operate more efficiently and attract new businesses. This project will promote economic development, improve the educational opportunities for all students, enhance telemedicine services, as well as improve the quality of life for each individual in the areas to be served. This VATI grant will be vital to the Region and will pass 10,982 total locations with an investment of \$28,545,000.00.

I feel all partners involved are dedicated to meet the goals of the VATI Program in the vital deployment of broadband. I strongly support the application of the LENOWISCO Planning District and urge favorable consideration by the DHCD. Please feel free to contact me anytime with questions.

Thank you for your time and consideration of this much needed project.

Sincerely,

A handwritten signature in black ink that reads "Stephen Lawson". The signature is fluid and cursive, with the first name being more prominent.

Stephen Lawson  
Town Manager

# LEE COUNTY ECONOMIC DEVELOPMENT AUTHORITY

P.O. Box 912  
Jonesville, VA 24263



Telephone: 276-346-7766  
Fax: 276-346-4016  
Richard Johnson II ● Executive Director

September 13<sup>th</sup>, 2021

Ms. Tammy L. Breski  
Telecommunications and Broadband Specialist  
Virginia Department of Housing and Community Development  
600 E Main Street, Suite 300  
Richmond, VA 23219

RE: LENOWISCO District-Wide Broadband Project

Dear Ms. Breski:

I am writing in support of the LENOWISCO Planning District Commission's application for a Virginia Telecommunications Initiative (VATI) grant through the Virginia Department of Housing and Community Development (DHCD). This District-Wide initiative, in cooperation with Scott County Telephone Cooperative (SCTC), will generate an immediate and self-sustaining benefit to southwest Virginia. I would like to offer my strong support of the project.

The goal is to construct a Fiber-to-the-Premise project that will provide a robust, reliable and affordable broadband G-PON connection to support up to ten (10) gigabit of bandwidth to each customer premise. If approved, the availability of broadband services will enhance Lee, Wise and Scott County's ability to operate more efficiently and attract new businesses. This project will promote economic development, improve the educational opportunities for all students, enhance telemedicine services, as well as improve the quality of life for each individual in the areas to be served. This VATI grant will be vital to the Region and will pass 10,982 total locations with an investment of \$28,545,000.00.

I feel all partners involved are dedicated to meet the goals of the VATI Program in the vital deployment of broadband. I strongly support the application of the LENOWISCO Planning District and urge favorable consideration by the DHCD. Please feel free to contact me anytime with questions.

Thank you for your time and consideration of this much needed project.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard Johnson II".

Richard Johnson.II  
Executive Director

CC: C.M. Callahan, EDA Attorney  
Greg Edwards, Chairman



**SCOTT COUNTY  
ECONOMIC DEVELOPMENT AUTHORITY**

190 BEECH STREET, SUITE 202  
GATE CITY, VA 24251

Phone: (276) 386-2525 Fax: (276) 386-6158  
E-mail: [jkilgore@scottcountyva.com](mailto:jkilgore@scottcountyva.com) [www.scottcountyva.org](http://www.scottcountyva.org)



September 13, 2021

Ms. Tammy L. Breski  
Telecommunications and Broadband Specialist  
Virginia Department of Housing and Community Development  
600 E Main Street, Suite 300  
Richmond, VA 23219

RE: LENOWISCO District-Wide Broadband Project

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Sincerely,

John H. Kilgore, Jr.  
Executive Director

City of Norton  
618 Virginia Avenue  
P. O. Box 618  
Norton, Virginia 24273-0618



(276) 679-1160  
fax: (276) 679-3510  
www.nortonva.gov  
email: cityhall@nortonva.gov

September 13, 2021

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Telecommunications and Broadband Specialist  
Virginia Department of Housing and Community Development  
600 E Main Street, Suite 300  
Richmond, VA 23219

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*Visit Mag Rock - Norton's Mountain Masterpiece*



Page - 2 -  
Ms. Tammy L. Breski  
September 13, 2021

Thank you for your consideration of this much needed project.

Sincerely,

A handwritten signature in green ink that reads "FRED". The letters are stylized and connected, with a prominent flourish on the top of the 'F'.

Fred L. Ramey, Jr.  
City Manager

CDBG Derivation of Cost

Product	Total	VATI	Non-VATI	Source of Estimate	Date
<b>EXAMPLE</b>					
<u>Construction</u>					
200 LF of fiber @\$150/LF	\$30,000	\$15,000	\$15,000	Company A	9/5/2016
Tower	\$100,000	\$80,000	\$20,000	Company B	9/5/2016
Engineering	\$20,000	\$0	\$20,000	ABC Engineering Firm	9/5/2016

Product	Total	VATI	Non-VATI	Source of Estimate	Date
Outside Plant	\$15,396,236.27	\$ 11,968,827.51	\$ 3,427,408.76	Matthew Hill/SCTC	9/10/2021
CPE Cost	\$5,075,645.75	\$ 3,945,738.90	\$ 1,129,906.85	Matthew Hill/SCTC	9/10/2021
Make Readies	\$4,032,000.00	\$ 3,134,422.70	\$ 897,577.30	Matthew Hill/SCTC	9/10/2021
Engineering	\$2,637,992.51	\$ 2,050,739.98	\$ 587,252.53	Matthew Hill/SCTC	9/10/2021
OLT EQ Cost	\$1,073,863.53	\$ 834,807.10	\$ 239,056.43	Matthew Hill/SCTC	9/10/2021
Railroad Crossings	\$ 329,261.94	\$ 255,963.81	\$ 73,298.13	Matthew Hill/SCTC	9/10/2021
<b>Total - Lee, Wise, &amp; Scott VATI Project</b>	<b>\$ 28,545,000.00</b>	<b>\$ 22,190,500.00</b>	<b>\$ 6,354,500.00</b>		
	\$ -	\$ -	\$ -		

\$28,545,000.00 \$ 22,190,500.00 \$ 6,354,500.00

VATI FY2022 LENOWISCO District-Wide Grant Project Cost Estimates

ENGR BY: MCH

Exchange: **Wise, Lee, Scott**

Route: Wise, Lee Scott

Project # **Wise, Lee, Scott**

Lee County

Wise County

Scott County

Take Rate

60% Take

60% Take

100% Take

Tax District:

Miles

Footage

1,797,674	340
0	0
5,343,450	1012
1,005,450	190

**Total Cost** \$28,545,000.00

Subscribers

6637

Per Sub \$4,300.89

\$20,431,342.34

\$8,113,657.66

\$28,545,000.00

Units/ Description	QTY	Labor	Material	Labor And Mat	Total Labor	Total Mat	TOTAL
CO-288-ADSS	199,331	\$1.39	\$1.75	\$3.14	\$277,070.09	\$348,829.25	\$625,899.34
CO-144-ADSS	1,123,630	\$1.39	\$1.25	\$2.64	\$1,561,845.70	\$1,404,537.50	\$2,966,383.20
CO-96-ADSS	68,000	\$1.39	\$0.75	\$2.14	\$94,520.00	\$51,000.00	\$145,520.00
CO-48-ADSS	148,000	\$1.39	\$0.47	\$1.86	\$205,720.00	\$69,560.00	\$275,280.00
CO-24-ADSS	258,713	\$1.39	\$0.42	\$1.81	\$359,611.07	\$108,659.46	\$468,270.53
Vaults 36X60X24	9	\$250.00	\$1,030.00	\$1,280.00	\$2,250.00	\$9,270.00	\$11,520.00
Coyote 9.5"X28" Enclosure	185	\$250.00	\$385.00	\$635.00	\$46,250.00	\$71,225.00	\$117,475.00
Coyote 6X22 Enclosures	3,825	\$175.00	\$275.00	\$450.00	\$669,375.00	\$1,051,875.00	\$1,721,250.00
Coyote 6X17 Enclosures	688	\$175.00	\$175.00	\$350.00	\$120,400.00	\$120,400.00	\$240,800.00
SEABF2	1,005,450	\$1.40	\$0.13	\$1.53	\$1,407,630.00	\$130,708.50	\$1,538,338.50
SEAF2	5,343,450	\$0.80	\$0.12	\$0.92	\$4,274,760.00	\$641,214.00	\$4,915,974.00
NETXTENDFLEX27 Cabinet	9	\$2,500.00	\$10,500.00	\$13,000.00	\$22,500.00	\$94,500.00	\$117,000.00
Template/Rectifier/Battery Kit	9	\$500.00	\$2,109.13	\$2,609.13	\$4,500.00	\$18,982.17	\$23,482.17
Clearfield 288 Panels	18	\$250.00	\$4,200.00	\$4,450.00	\$4,500.00	\$75,600.00	\$80,100.00
288 Pon Cabinet and Vault	26	\$1,200.00	\$5,645.00	\$6,845.00	\$31,200.00	\$146,770.00	\$177,970.00
144 Pon Cabinet and Vault	4	\$1,200.00	\$3,700.24	\$4,900.24	\$4,800.00	\$14,800.96	\$19,600.96
Calix E72 GPONR2	29	\$500.00	\$9,096.60	\$9,596.60	\$14,500.00	\$263,801.40	\$278,301.40
Gpon Optic	230	\$125.00	\$696.50	\$821.50	\$28,750.00	\$160,195.00	\$188,945.00
Chassis Kit with Fan Tray	19	\$250.00	\$796.00	\$1,046.00	\$4,750.00	\$15,124.00	\$19,874.00
Splitter 1X32 w/60" Tails	230	\$150.00	\$583.00	\$733.00	\$34,500.00	\$134,090.00	\$168,590.00
Gpon ONT	6,637	\$300.00	\$229.00	\$529.00	\$1,991,100.00	\$1,519,873.00	\$3,510,973.00
Splice Housing	6,637	\$23.50	\$25.00	\$48.50	\$155,969.50	\$165,925.00	\$321,894.50

Corning Unicam	6,637	\$0.00	\$14.00	\$14.00	\$0.00	\$92,918.00	\$92,918.00	\$92,918.00
Mast Clamps	6,637	\$5.25	\$5.00	\$5.00	\$34,844.25	\$33,185.00	\$68,029.25	\$68,029.25
Inside Fiber	6,637	\$100.00	\$50.00	\$50.00	\$663,700.00	\$331,850.00	\$995,550.00	\$995,550.00
BM21	5,760	\$23.00	\$0.00	\$0.00	\$132,480.00	\$0.00	\$132,480.00	\$132,480.00
Heat Shrinks /50 pak	1,145	\$0.00	\$12.50	\$12.50	\$0.00	\$14,312.50	\$14,312.50	\$14,312.50
Splicing	43,380	\$23.00	\$0.25	\$0.25	\$997,740.00	\$10,845.00	\$1,008,585.00	\$1,008,585.00
HO1D	6,637	\$23.00	\$0.25	\$0.25	\$152,651.00	\$1,659.25	\$154,310.25	\$154,310.25
VFP Shelter	2	\$15,000.00	\$115,000.00	\$115,000.00	\$30,000.00	\$230,000.00	\$260,000.00	\$260,000.00
Make Ready Lee County	76	\$6,000.00	\$0.00	\$0.00	\$456,000.00	\$0.00	\$456,000.00	\$456,000.00
Engineering Lee County	1	\$1,034,005.05	\$0.00	\$0.00	\$1,034,005.05	\$0.00	\$1,034,005.05	\$1,034,005.05
Make Ready Wise County	298	\$12,000.00	\$0.00	\$0.00	\$3,576,000.00	\$0.00	\$3,576,000.00	\$3,576,000.00
Engineering Wise County	1	\$1,603,987.46	\$0.00	\$0.00	\$1,603,987.46	\$0.00	\$1,603,987.46	\$1,603,987.46
Railroad Crossings	1	\$329,261.94	\$0.00	\$0.00	\$329,261.94	\$0.00	\$329,261.94	\$329,261.94
Pole Support Twisting in	3,352	\$19.89	\$75.00	\$75.00	\$66,671.28	\$251,400.00	\$318,071.28	\$318,071.28
35/4 Poles	125	\$300.00	\$241.78	\$241.78	\$37,500.00	\$30,222.50	\$67,722.50	\$67,722.50
PLP ADSS Dead End (2 per pole)	8,852	\$0.00	\$32.96	\$32.96	\$0.00	\$291,767.94	\$291,767.94	\$291,767.94
PLP ADSS tangent	2,125	\$0.00	\$25.42	\$25.42	\$0.00	\$54,027.49	\$54,027.49	\$54,027.49
PLP ADSS Swivel tangent w/ re-rod	598	\$0.00	\$34.21	\$34.21	\$0.00	\$20,469.74	\$20,469.74	\$20,469.74
Hardware P-Clamps/Ihooks, ETC	6,703	\$0.00	\$20.00	\$20.00	\$0.00	\$134,060.00	\$134,060.00	\$134,060.00
Total								\$28,545,000.00

NOTE \*Cost Estimates were taken from previous VATI & RUS Grants



1425 DAVE LYLE BLVD  
 ROCK HILL SC 29730-4247  
 Phone: 704-602-7022  
 Fax: 704-392-5596

To: Powell Valley Electric Cooperative  
 400 Straight Creek Road  
 NEW TAZEWELL TN 37825  
 Attn: Hoy Watson  
 Phone: XXX-XXX-XXXX  
 Fax:  
 Email: josh.hoyle@graybar.com

Date: 05/29/2020  
**Proj Name:**  
**GB Quote #:** 0235412566 Rev-2  
 Release Nbr:  
 Purchase Order Nbr:  
 Additional Ref#  
 Valid From: 05/20/2020  
 Valid To: 06/19/2020  
 Contact: JOSH HOYLE  
 Email: josh.hoyle@graybar.com

**Proposal**

We Appreciate Your Request and Take Pleasure in Responding As Follows

Item	Item/Type	Quantity	Supplier	Catalog Nbr	Description	Price	Unit	Ext.Price
100	500,000 EA	500,000	PRYSMIAN	F-ADLS1025-24-HB-144-E3		\$834.86	1000	\$417,430.00
<b>***Item Note:***</b> Long Span ADSS (SafeStrain), 1025 LB MRCL, Single Jacket 24F/Tube, 12F Binder Groups, Gel-Filled Tube(s) 144 Fiber Single Mode (ITU G.652.D) 0.35/0.35/0.25 dB/km at 1310/1383/1550 nm (1383 nm uncabled) GR-20; RUS CFR-1755-900; ANSI/ICEA S-87-640; IEEE1222  ****250k Late June, 250K July, 500k from there on out*****								
210	500 EA	500	PREFORMED LN	2872004C1E1	LTD TENSION DE W/CLEVIS & LINK	\$37.98	1	\$18,990.00
GB Part #: 25170993    UPC #:								
300	200 EA	200	PREFORMED LN	4450200S	FIBERLGN AL SUSP-SHACKL/EYENUT	\$37.23	1	\$7,446.00
GB Part #: 25414898    UPC #: <b>***Item Note:***</b> 5-6 WEEKS								
400	500 EA	500	PREFORMED LN	4450100	FIBERLIGN ALUM SUP. ASSEMBLY	\$30.31	1	\$15,155.00
GB Part #: 25062725    UPC #: <b>***Item Note:***</b> 5-6 WEEKS								

This equipment and associated installation charges may be financed for a low monthly payment through Graybar Financial Services (subject to credit approval). For more information call 1-800-241-7408 to speak with a leasing specialist.

To learn more about Graybar, visit our website at [www.graybar.com](http://www.graybar.com)      24-Hour Emergency Phone#: 1-800-GRAYBAR

Subject to the standard terms and conditions set forth in this document. Unless otherwise noted, freight terms are F.O.B. shipping point prepaid and bill. Unless noted the estimated ship date will be determined at the time of order placement.

To: Powell Valley Electric Cooperative  
400 Straight Creek Road  
NEW TAZEWELL TN 37825  
Attn: Hoy Watson

Date: 05/29/2020  
Proj Name:  
GB Quote #: 0235412566 Rev-2

## Proposal

We Appreciate Your Request and Take Pleasure in Responding As Follows

Total in USD (Tax not included): \$459,021.00

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24-Hour Emergency Phone#: 1-800-GRAYBAR

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To: Powell Valley Electric Cooperative  
400 Straight Creek Road  
NEW TAZEWELL TN 37825  
Attn: Hoy Watson

Date: 05/29/2020  
Proj Name:  
GB Quote #: 0235412566 Rev-2

## Proposal

We Appreciate Your Request and Take Pleasure in Responding As Follows

### GRAYBAR ELECTRIC COMPANY, INC. TERMS AND CONDITIONS OF SALE

1. ACCEPTANCE OF ORDER- TERMINATION - Acceptance of any order is subject to credit approval and acceptance of order by Graybar Electric Company, Inc. ("Graybar") and, when applicable, Graybar's suppliers. If credit of the buyer of the goods or services ("Buyer") becomes unsatisfactory to Graybar, Graybar reserves the right to terminate upon notice to Buyer and without liability to Graybar.
2. PRICES AND SHIPMENTS - Unless otherwise quoted, prices for goods shall be those in effect at time of shipment, which shall be made F.O.B. shipping point, prepaid and bill. Unless otherwise indicated in the applicable quotation or statement of work, prices for services shall be those in effect at the time of completion. The contract price for goods and/or services shall be increased by the amount of any applicable tariff, excise, fee, assessment, levy, charge or duty of any kind whatsoever, imposed, assessed or collected by any governmental body, whether or not reflected in the costs charged to Graybar, and Graybar may increase its cost for goods and/or services appropriately to take into account such increases in Graybar's costs.
3. RETURN OF GOODS - Credit may be allowed for goods returned with prior approval. A deduction may be made from credits issued to cover cost of handling. Returns will not be accepted for services or any material which has been modified at the request of or by Buyer. In addition, no custom orders may be returned.
4. TAXES - Prices shown do not include sales or other taxes imposed on the sale of goods or services. Taxes now or hereafter imposed upon sales, shipments or services will be added to the purchase price. Buyer agrees to reimburse Graybar for any such tax or provide Graybar with acceptable tax exemption certificate.
5. DELAY IN DELIVERY - Graybar is not to be accountable for delays in delivery of goods or services occasioned by acts of God, failure of its suppliers to ship or deliver on time, or other circumstances beyond Graybar's reasonable control, including, but not limited to, sourcing, shipment or delivery issues caused by, related to or resulting from COVID-19 or other similar national or global health situations. Factory shipment or delivery dates are best estimates, and in no case shall Graybar be liable for any consequential or special damages arising from any delay in provision of services, shipment or delivery.
6. LIMITED WARRANTIES - Graybar warrants that all goods sold are free of any security interest and will make available to Buyer all transferable warranties (including without limitation warranties with respect to intellectual property infringement) made by Graybar by the manufacturer of the goods. Buyer acknowledges that the performance of any service which alters the manufacturer provided goods as indicated in the statement of work may void the manufacturer's warranty. Graybar shall use the same care and skill a similarly situated provider of like services would exercise following commonly accepted industry practices in the performance of its duties under this agreement. GRAYBAR MAKES NO OTHER EXPRESS OR IMPLIED WARRANTIES, AND SPECIFICALLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PURPOSE, UNLESS OTHERWISE AGREED IN WRITING BY AN AUTHORIZED REPRESENTATIVE OF GRAYBAR. PRODUCTS SOLD HEREUNDER ARE NOT INTENDED FOR USE IN OR IN CONNECTION WITH (1) ANY SAFETY APPLICATION OR THE CONTAINMENT AREA OF A NUCLEAR FACILITY, OR (2) IN A HEALTHCARE APPLICATION, WHERE THE GOODS HAVE POTENTIAL FOR DIRECT PATIENT CONTACT OR WHERE A SIX (6) FOOT CLEARANCE FROM A PATIENT CANNOT BE MAINTAINED AT ALL TIMES.
7. LIMITATION OF LIABILITY - Buyer's remedies under this agreement are subject to any limitations contained in manufacturer's terms and conditions to Graybar, a copy of which will be furnished upon written request. Furthermore, Graybar's liability shall be limited to either repair or replacement of the goods, re-performance of the services, or refund of the purchase price, all at Graybar's option, and IN NO CASE SHALL GRAYBAR BE LIABLE FOR INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES. In addition, claims for shortages, other than loss in transit, must be made in writing not more than five (5) days after receipt of shipment. Unless otherwise agreed in the applicable statement of work, acceptance of services will occur not more than five (5) days after completion of performance.
8. WAIVER - The failure of Graybar to insist upon the performance of any of the terms or conditions of this agreement or to exercise any right hereunder shall not be deemed to be a waiver of such terms, conditions, or rights in the future, nor shall it be deemed to be a waiver of any other term, condition, or right under this agreement.
9. MODIFICATION OF TERMS AND CONDITIONS - These terms and conditions, and any associated statement of work, supersede all other communications, negotiations, and prior oral or written statements regarding the subject matter of these terms and conditions. No change, modification, rescission, discharge, abandonment, or waiver of these terms and conditions shall be binding upon Graybar unless made in writing and signed on its behalf by a duly authorized representative of Graybar. No conditions, usage of trade, course of dealing or performance, understanding or agreement, purporting to modify, vary, explain, or supplement these terms and conditions shall be binding unless hereafter made in writing and signed by the party to be bound. Any proposed modifications or additional terms are specifically rejected and deemed a material alteration hereof. If this document shall be deemed an acceptance of a prior offer by Buyer, such acceptance is expressly conditional upon Buyer's assent to any additional or different terms set forth herein.
10. REELS - When Graybar ships returnable reels, a reel deposit may be included in the invoice. The Buyer should contact the nearest Graybar service location to return reels.
11. CERTIFICATION - Graybar hereby certifies that these goods were produced in compliance with all applicable requirements of Sections 6, 7, and 12 of the Fair Labor Standards Act, as amended, and of regulations and orders of the United States Department of Labor issued under Section 14 thereof. This agreement is subject to Executive Order 11246, as amended, the Rehabilitation Act of 1973, as amended, the Vietnam Veterans' Readjustment Assistance Act of 1974, as amended, E.O. 13496, 29 CFR Part 471, Appendix A to Subpart A, and the corresponding regulations, to the extent required by law. 41 CFR 60-1.4, 60-741.5, and 60-250.5 are incorporated herein by reference, to the extent legally required.
12. FOREIGN CORRUPT PRACTICES ACT - Buyer shall comply with applicable laws and regulations relating to anti-corruption, including, without limitation, (i) the United States Foreign Corrupt Practices Act (FCPA) (15 U.S.C. §§78dd-1, et. seq.) irrespective of the place of performance, and (ii) laws and regulations implementing the Organization for Economic Cooperation and Development's Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, the U.N. Convention Against Corruption, and the Inter-American Convention Against Corruption in Buyer's country or any country where performance of this agreement or delivery of goods will occur.
13. ASSIGNMENT - Buyer shall not assign its rights or delegate its duties hereunder or any interest herein without the prior written consent of Graybar, and any such assignment, without such consent, shall be void.
14. GENERAL PROVISIONS - All typographical or clerical errors made by Graybar in any quotation, acknowledgment or publication are subject to correction. This agreement shall be governed by the laws of the State of Missouri applicable to contracts to be formed and fully performed within the State of Missouri, without giving effect to the choice or conflicts of law provisions thereof. All suits arising from or concerning this agreement shall be filed in the Circuit Court of St. Louis County, Missouri, or the United States District Court for the Eastern District of Missouri, and no other place unless otherwise determined in Graybar's sole discretion. Buyer hereby irrevocably consents to the jurisdiction of such court or courts and agrees to appear in any such action upon written notice thereof.
15. PAYMENT TERMS - Payment terms shall be as stated on Graybar's invoice or as otherwise mutually agreed. As a condition of the sales agreement, a monthly service charge of the lesser of 1-1/2% or the maximum permitted by law may be added to all accounts not paid by net due date. Visa, MasterCard, American Express, and Discover credit cards are accepted at point of purchase only.
16. EXPORTING - Buyer acknowledges that this order and the performance thereof are subject to compliance with any and all applicable United States laws, regulations, or orders. Buyer agrees to comply with all such laws, regulations, and orders, including, if applicable, all requirements of the International Traffic in Arms Regulations and/or the Export Administration Act, as may be amended. Buyer further agrees that if the export laws are applicable, it will not disclose or re-export any technical data received under this order to any countries for which the United States government requires an export license or other supporting documentation at the time of export or transfer, unless Buyer has obtained prior written authorization from the United States Office of Export Control or other authority responsible for such matters.
17. CANCELLATION; CHANGES FOR SERVICES - Buyer may cancel or make changes to a statement of work up to five (5) business days prior to commencement of the work. All changes and cancellations after such date are subject to Graybar's prior written approval in Graybar's sole and absolute discretion. Buyer shall pay to Graybar amounts necessary to cover cancellation, restocking fees and other charges applicable to the cancelled goods or services including those incurred or committed to by Graybar.

Signed: \_\_\_\_\_

This equipment and associated installation charges may be financed for a low monthly payment through Graybar Financial Services (subject to credit approval). For more information call 1-800-241-7408 to speak with a leasing specialist.

To learn more about Graybar, visit our website at [www.graybar.com](http://www.graybar.com)

24-Hour Emergency Phone#: 1-800-GRAYBAR

Subject to the standard terms and conditions set forth in this document. Unless otherwise noted, freight terms are F.O.B. shipping point prepaid and bill.  
Unless noted the estimated ship date will be determined at the time of order placement.

Contract No. 1125

**DRAFT CONSTRUCTION AGREEMENT**

**Between**

**SCOTT COUNTY TELEPHONE COOPERATIVE (SCTC)**

**And**

**POWELL VALLEY ELECTRIC COOPERATIVE, INC. (PVEC)**

**THIS CONSTRUCTION AGREEMENT** is entered into effective as of \_\_\_\_\_, 2021 (the "Effective Date") between Scott County Telephone Cooperative (the "Company") and Powell Valley Electric Cooperative (the "Contractor").

**W I T N E S S E T H:**

**WHEREAS**, the Company owns and operates a fiber optic broadband system in Tennessee and Virginia (the "System"); and has designed a project (called the Lenowisco 2021 VATI Project) for installing broadband facilities and providing broadband services in Lee County, Virginia (the "2021 Lenowisco 2021 VATI Project"); and

**WHEREAS**, Contractor is experienced in constructing fiber optic cable systems;

**NOW, THEREFORE**, in consideration of the mutual covenants and considerations hereinafter set forth, and other good and valuable consideration, the parties hereto agree as follows:

**1. AGREEMENT TO CONSTRUCT A FIBER SYSTEM**

Contractor will install fiber backbone (the "Work"), as directed by the Company within the Project area. The Company shall provide all engineering, and job and material specifications. The Company will be responsible for providing all rights-of-way required for accommodating the installations, including permission to attach to any third-party poles. The Contractor shall furnish qualified and experience personnel to perform the work.

**2. PAYMENT**

A. **Rates and Charges.** In consideration of Contractor's performance of the Work described herein, the Company shall pay Contractor in accordance with the rates and charges as set forth in **Appendix 1 – Bid Pricing**.



	Lee County 2021 VATI Project Unit Pricing			
ENGR BY: Charles "Bo" Goodin				
Exchange: Lee County				
Route: Lee County				
	Footage	Miles		
Main Line Aerial	386,135	73		
Main Line Buried	0	0		
Aerial Drop	339,500	64		
Buried Drop	0	0		
<b>Lee County</b>				
<b>Units/ Description</b>	<b>QTY</b>	<b>Labor</b>	<b>Total Labor</b>	<b>TOTAL</b>
CO-144-ADSS	216,382	\$1.13	\$244,511.66	\$244,512.79
CO-96-ADSS	152,981	\$1.13	\$172,868.53	\$172,869.66
CO-48-ADSS	16,772	\$1.13	\$18,952.36	\$18,953.49
Vaults 36X60X24	2	\$250.00	\$500.00	\$750.00
Coyote 9.5"X28" Enclosure	9	\$250.00	\$2,250.00	\$2,500.00
Coyote 6X22 Enclosures	679	\$175.00	\$118,825.00	\$119,000.00
SEABF2	14,369	\$1.40	\$20,116.60	\$20,118.00
SEAF2	339,500	\$0.45	\$152,775.00	\$152,775.45
NETXTENDFLEX27 Cabinet	2	\$2,500.00	\$5,000.00	\$7,500.00
Template/Rectifier/Battery Kit	2	\$500.00	\$1,000.00	\$1,500.00
Mast Clamps	679	\$5.25	\$3,564.75	\$3,570.00
Splicing	2,880	\$23.00	\$66,240.00	\$66,263.00
HO1D	679	\$23.00	\$15,617.00	\$15,640.00
			Total Labor	\$825,952.39

B. **Billing.** The Contractor will bill the Company for the Work that it performs under this agreement within ninety (90) days of the Work being performed. The Company will pay the invoices within thirty (30) days of the date it receives the invoice. If the Company does not pay Contractor within thirty (30) days, the

Contractor may assess a late payment penalties not to exceed 1.5% per month or 18% per annum.

### 3. TERM AND TERMINATION

- A. **Effective Date.** The term of this Agreement shall commence on the date first written above (the "Effective Date") and continue until March 01, 2023.
- B. **Termination for Convenience.** This Agreement may be terminated earlier by either party for any reason, at any time, in whole or in part, upon 30 days written notice to the other party.

### 4. EQUAL OPPORTUNITY EMPLOYER

The Contractor asserts that it is a Rural Utilities Services ("RUS") Borrower and that it is an equal opportunity employer.

### 5. SUBCONTRACTORS

The Contractor reserves the right, at its sole discretion, to employ qualified subcontractors in the performance of the Work. Such subcontractors must meet RUS requirements.

### 6. INDEMNIFICATION; INSURANCE

- A. **Indemnification:** Each party (Contractor or Company) agrees to indemnify and hold harmless the other party from and against any and all liability, costs, attorneys' fees incurred, expenses, claims and demands, including payment under any workman's compensation laws or under any plan for employee's disability and death benefits, for damage to property, and/or injury to or death of persons, including but not limited to, injuries to and death of its employees when such damage to property or injury to or death of persons arises out of, results from, or is caused by any of its acts or the acts of its employees.
- B. **Insurance:** Each party (Contractor or Company) agrees to carry insurance, with contractual endorsements necessary to protect the other party from and against any and all claims, demands, actions, judgments, costs, expenses, and liabilities of every name and nature which might arise or result, directly or indirectly, from its undertakings to the other party in the paragraphs written above. The amounts of such insurance against liability due to damage to property or liability due to any one accident shall be one million dollars (\$1,000,000.00). Each party also agrees to carry such insurance as required by laws in effect that may be applicable to it. All insurance required shall be procured prior to commencement of any of the services covered by this contract and shall remain in effect for the entire life of this agreement. The company(ies) issuing such insurance shall furnish copies of the policies issued under this agreement and a certificate that it will not cancel nor

change said policies except after 30 days written notice to the other party. Such policies shall be replaced by the applicable party prior to the expiration date or this contract will terminate on said expiration date of insurance coverage.

## 7. MISCELLANEOUS

- A. **Relationship of the Parties.** Nothing in this Agreement shall be deemed to create any relationship between Contractor and the Company other than that of independent parties contracting with each other solely for the purpose of carrying out the provisions of this Agreement.
- B. **Audit Rights.** Company will have the right to audit project related portions of the Contractor's work order system at any time to determine total accumulated costs. Contractor will have the right to audit Company collections of project related revenue pursuant to this Agreement.
- C. **Notices.** All notices, demands, requests, or other communications which may be or are required to be given, served, or sent by any party to any other party pursuant to this Agreement shall be in writing and shall be mailed by first-class, registered or certified mail, return receipt requested, postage prepaid, or transmitted by overnight courier, hand delivery (including delivery by courier), telegram, telex, or facsimile transmission, addressed as follows:

If to Contractor:

Powell Valley Electric Cooperative  
Attention: Mr. Randell W. Meyers  
P.O. Box 1528, New Tazewell, TN 37824  
Telephone No.: (423) 626.0702  
[rmeyers@pve.coop](mailto:rmeyers@pve.coop)

If to the Company:

Scott County Telephone Cooperative  
Attention: Mr. William J. Franklin  
149 Woodland Street  
Gate City, Virginia 24251  
[Billfranklin.sctc@gmail.com](mailto:Billfranklin.sctc@gmail.com)

**IN WITNESS WHEREOF**, the parties hereto have caused this Agreement to be duly executed on their behalf to be effective as of the date first above written.

THE COMPANY:

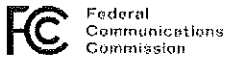
Scott County Telephone Cooperative

By: William J. Franklin  
Name: William J. Franklin  
Title: CEO

CONTRACTOR:

Powell Valley Electric Cooperative

By: Randell W. Meyers  
Name: Randell W. Meyers  
Title: General Manager/CEO



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Form 477 Filing Summary

FRN: 0002069862 | Data as of: Dec 31, 2020 | Operations: ILEC | Submission Status: Original - Submitted | Last Updated: Mar 15, 2021 14:01:46

**Filer Identification**

Section	Question	Response
<b>Filer Information</b>	Company Name	Scott County Telephone Cooperative
	Holding Company Name	Scott County Telephone Cooperative
	SAC ID	190248
	499 ID	804426
<b>Data Contact Information</b>	Data Contact Name	Roger Fraysier
	Data Contact Phone Number	(276) 452-7364
	Data Contact E-mail	rfraysier@sctc.org
<b>Emergency Operations Contact Information</b>	Emergency Operations Name	Roger Fraysier
	Emergency Operations Phone Number	(276) 452-7364
	Emergency Operations E-mail	rfraysier@sctc.org
<b>Certifying Official Contact Information</b>	Certifying Official Name	Roger Fraysier
	Certifying Official Phone Number	(276) 452-7364
	Certifying Official E-mail	rfraysier@sctc.org

**Data Submitted**

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	SCTC FBD.xlsx.csv	Mar 12, 2021 12:09:05	1868
Fixed Broadband Subscription	SCTC FBS.xlsx.csv	Mar 12, 2021 11:55:29	75
Fixed Voice Subscription	SCTC FVS.csv	Mar 10, 2021 14:45:29	15

**Fixed Broadband Deployment**

**Census Block Counts by State, DBA Name and Technology**

State	DBA Name	Technology	Blocks
Tennessee	Scott County Telephone Cooperative, Inc.	Asymmetric xDSL	1
		Optical Carrier/Fiber to the End User	34
Virginia	Scott County Telephone Cooperative, Inc.	Asymmetric xDSL	1022
		Optical Carrier/Fiber to the End User	811
<b>Total</b>			<b>1868</b>

**Fixed  
Broadband  
Subscription**

**Fixed Broadband Subscriptions by State, Technology and End-user Type**

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Tennessee	Optical Carrier/Fiber to the End User	4	39	0	39
Virginia	Asymmetric xDSL	11	2559	102	2661
	Optical Carrier/Fiber to the End User	60	2226	191	2417
<b>Total</b>		<b>75</b>	<b>4824</b>	<b>293</b>	<b>5117</b>

**Fixed Broadband Subscriptions by Bandwidths and End-user Type**

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
3.000	0.768	1920	95	2015
5.000	1.000	1184	59	1243
10.000	2.000	54	36	90
25.000	5.000	19	72	91
25.000	12.000	1415	4	1419
30.000	5.000	19	0	19
50.000	10.000	38	15	53
50.000	25.000	33	0	33
100.000	20.000	102	11	113
100.000	50.000	20	0	20
100.000	100.000	2	0	2
200.000	100.000	13	0	13
200.000	200.000	0	1	1
500.000	200.000	3	0	3
500.000	500.000	1	0	1
1000.000	500.000	1	0	1
<b>Total</b>		<b>4824</b>	<b>293</b>	<b>5117</b>

**Fixed Broadband Subscriptions by Technology, Bandwidths and End-user Type**

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Asymmetric xDSL	3.000	0.768	1522	65	1587
	5.000	1.000	1037	37	1074
Optical Carrier/Fiber to the End User	3.000	0.768	398	30	428
	5.000	1.000	147	22	169
	10.000	2.000	54	36	90

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Business /		Total
			Consumer	Govt	
	25.000	5.000	19	72	91
	25.000	12.000	1415	4	1419
	30.000	5.000	19	0	19
	50.000	10.000	38	15	53
	50.000	25.000	33	0	33
	100.000	20.000	102	11	113
	100.000	50.000	20	0	20
	100.000	100.000	2	0	2
	200.000	100.000	13	0	13
	200.000	200.000	0	1	1
	500.000	200.000	3	0	3
	500.000	500.000	1	0	1
	1000.000	500.000	1	0	1
<b>Total</b>			<b>4824</b>	<b>293</b>	<b>5117</b>

### Fixed Voice Subscription

#### VGE Lines and VoIP Subscriptions by State and End-user Type

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Tennessee	61	61	0	0
Virginia	4100	3599	2	0
<b>Total</b>	<b>4161</b>	<b>3660</b>	<b>2</b>	<b>0</b>

### Fixed Voice Subscription (VGE Lines)

#### VGE Lines Provided to Unaffiliated Providers by State

State	Wholesale	UNE-L
Tennessee		0
Virginia		0
<b>Total</b>		<b>0</b>

#### VGE Lines Provided to End Users by State, Bundle and Product Type

State	Total	by Bundle		by Product Type			
		Sold w/ Internet	Sold w/o Internet	Consumer		Bus-Govt	
				& No PIC	& PIC	& No PIC	& PIC
Tennessee	61	43	18	11	50	0	0
Virginia	4100	2165	1935	3158	441	240	261

State	Total	by Bundle		by Product Type			
		Sold w/ Internet	Sold w/o Internet	Consumer		Bus-Govt	
				& No PIC	& PIC	& No PIC	& PIC
<b>Total</b>	<b>4161</b>	<b>2208</b>	<b>1953</b>	<b>3169</b>	<b>491</b>	<b>240</b>	<b>261</b>

**VGE Lines Provided to End Users by State, Ownership and Last-mile Medium**

State	Total	by Ownership				by Last-mile Medium			
		Owned	UNE-L	Resale	FTTP	Coax	Fixed Wireless	Copper	
Tennessee	61	61	0	0	55	0	0	6	
Virginia	4100	4100	0	0	1232	0	0	2868	
<b>Total</b>	<b>4161</b>	<b>4161</b>	<b>0</b>	<b>0</b>	<b>1287</b>	<b>0</b>	<b>0</b>	<b>2874</b>	

**Fixed Voice  
Subscription  
(iVoIP)**

**Over-the-top VoIP Subscriptions by State and End-user Type**

State	Total	Consumer	Business / Govt
Virginia	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

**All other VoIP Subscriptions by State, End-user Type, Bundle and Last-mile Medium**

State	Total	by End-user Type		by Bundle		by Last-mile Medium			
		Consumer	Business / Government	Sold w/ Internet	Sold w/o Internet	FTTP	Coax	Fixed Wireless	Copper
Virginia	2	0	2	2	0	2	0	0	0
<b>Total</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>





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Form 477 Filing Summary

FRN: 0002069862 | Data as of: Jun 30, 2020 | Operations: ILEC | Submission Status: Revised - Submitted | Last Updated: Nov 13, 2020 10:26:37

Filer Identification	Section	Question	Response
	Filer Information	Company Name	Scott County Telephone Cooperative
		Holding Company Name	Scott County Telephone Cooperative
		SAC ID	190248
		499 ID	804426
	Data Contact Information	Data Contact Name	Roger Fraysier
		Data Contact Phone Number	(276) 452-7364
		Data Contact E-mail	rfraysier@sctc.org
	Emergency Operations Contact Information	Emergency Operations Name	Roger Fraysier
		Emergency Operations Phone Number	(276) 452-7364
		Emergency Operations E-mail	rfraysier@sctc.org
	Certifying Official Contact Information	Certifying Official Name	Roger Fraysier
		Certifying Official Phone Number	(276) 452-7364
		Certifying Official E-mail	rfraysier@sctc.org

Data Submitted	Form Section	File Name	Date & Time	Number of Rows
	Fixed Broadband Deployment	Fixed Broadband Deployment - Updated FCC Question.csv	Nov 13, 2020 10:24:04	1471
	Fixed Broadband Subscription	Fixed Broadband Subscriber.csv	Nov 13, 2020 10:19:06	187
	Fixed Voice Subscription	SCTC FVS.csv	Nov 13, 2020 10:19:06	16

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Tennessee	Scott County	Asymmetric xDSL	12
		Optical Carrier/Fiber to the End User	150
Virginia	Scott County	Asymmetric xDSL	614
		Optical Carrier/Fiber to the End User	695
<b>Total</b>			<b>1471</b>

**Fixed  
Broadband  
Subscription**

**Fixed Broadband Subscriptions by State, Technology and End-user Type**

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Tennessee	Optical Carrier/Fiber to the End User	30	454	19	473
Virginia	Asymmetric xDSL	18	2600	106	2706
	Optical Carrier/Fiber to the End User	139	4052	384	4436
<b>Total</b>		<b>187</b>	<b>7106</b>	<b>509</b>	<b>7615</b>

**Fixed Broadband Subscriptions by Bandwidths and End-user Type**

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
3.000	0.768	2563	139	2702
5.000	1.000	1367	96	1463
10.000	2.000	83	59	142
25.000	5.000	2357	140	2497
30.000	5.000	42	0	42
50.000	10.000	92	41	133
100.000	20.000	214	19	233
100.000	100.000	166	15	181
200.000	100.000	2	0	2
300.000	20.000	1	0	1
300.000	300.000	61	0	61
500.000	20.000	1	0	1
500.000	500.000	145	0	145
1000.000	500.000	1	0	1
1000.000	1000.000	11	0	11
<b>Total</b>		<b>7106</b>	<b>509</b>	<b>7615</b>

**Fixed Broadband Subscriptions by Technology, Bandwidths and End-user Type**

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Asymmetric xDSL	3.000	0.768	1614	71	1685
	5.000	1.000	986	35	1021
Optical Carrier/Fiber to the End User	3.000	0.768	949	68	1017
	5.000	1.000	381	61	442
	10.000	2.000	83	59	142
	25.000	5.000	2357	140	2497

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	30.000	5.000	42	0	42
	50.000	10.000	92	41	133
	100.000	20.000	214	19	233
	100.000	100.000	166	15	181
	200.000	100.000	2	0	2
	300.000	20.000	1	0	1
	300.000	300.000	61	0	61
	500.000	20.000	1	0	1
	500.000	500.000	145	0	145
	1000.000	500.000	1	0	1
	1000.000	1000.000	11	0	11
<b>Total</b>			<b>7106</b>	<b>509</b>	<b>7615</b>

### Fixed Voice Subscription

#### VGE Lines and VoIP Subscriptions by State and End-user Type

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Tennessee	60	60	0	0
Virginia	4220	3699	2	0
<b>Total</b>	<b>4280</b>	<b>3759</b>	<b>2</b>	<b>0</b>

### Fixed Voice Subscription (VGE Lines)

#### VGE Lines Provided to Unaffiliated Providers by State

State	Wholesale	UNE-L
Tennessee	0	0
Virginia	0	0
<b>Total</b>	<b>0</b>	<b>0</b>

#### VGE Lines Provided to End Users by State, Bundle and Product Type

State	Total	by Bundle		by Product Type			
		Sold w/ Internet	Sold w/o Internet	Consumer		Bus-Govt	
				& No PIC	& PIC	& No PIC	& PIC
Tennessee	60	43	17	10	50	0	0
Virginia	4220	2165	2055	3258	441	260	261
<b>Total</b>	<b>4280</b>	<b>2208</b>	<b>2072</b>	<b>3268</b>	<b>491</b>	<b>260</b>	<b>261</b>

#### VGE Lines Provided to End Users by State, Ownership and Last-mile Medium

State	Total	by Ownership				by Last-mile Medium			
		Owned	UNE-L	Resale	FTTP	Coax	Fixed Wireless	Copper	
Tennessee	60	60	0	0	54	0	0	6	
Virginia	4220	4220	0	0	1352	0	0	2868	
<b>Total</b>	<b>4280</b>	<b>4280</b>	<b>0</b>	<b>0</b>	<b>1406</b>	<b>0</b>	<b>0</b>	<b>2874</b>	

**Fixed Voice  
Subscription  
(iVoIP)**

**Over-the-top VoIP Subscriptions by State and End-user Type**

State	Total	Consumer	Business / Govt
Virginia	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>

**All other VoIP Subscriptions by State, End-user Type, Bundle and Last-mile Medium**

State	Total	by End-user Type		by Bundle		by Last-mile Medium			
		Consumer	Business / Government	Sold w/ Internet	Sold w/o Internet	FTTP	Coax	Fixed Wireless	Copper
Virginia	2	0	2	2	0	2	0	0	0
<b>Total</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>

### **Memorandum of Understanding (MOU)**

Whereas Powell Valley Electric Cooperative (PVEC) and Scott County Telephone Cooperative (SCTC) wish to cooperate to design, construct, and operate additions to the existing SCTC fiber optic network for purposes of providing Automated Meter Infrastructure (AMI) capability to every PVEC member.

Whereas PVEC is recognized as having extensive and longstanding experience in line construction and maintenance.

Whereas SCTC is recognized as a leader in rural fiber optic broadband deployment.

PVEC hereby coordinates with SCTC for the expansion of fiber lines to the homes and businesses of PVEC members to meet the goal of providing AMI to every PVEC member as appropriate and providing communications for PVEC's other electrical needs.

**PVEC RESPONSIBILITIES:** PVEC will be responsible for:

- Construction of backbone fiber, drop fiber, installation of member premise electronics, and splicing.
- PVEC will work with SCTC to verify materials are compatible to SCTC's existing network.
- Maintenance on all fiber in the PVEC footprint and this maintenance charge will be at PVEC cost and billed to SCTC monthly.

**FINANCIAL RESPONSIBILITIES:** PVEC will finance any or all of PVEC's costs (including both capital and construction) associated with its responsibilities listed above in PVEC RESPONSIBILITIES. These costs will be accrued through the PVEC work order system and a running total of its Project Costs will be maintained by PVEC. All PVEC work order costs, which are not offset by grant funding, will be reimbursed by SCTC at a monthly rate of \$40.00 per member connected and serviced on the broadband network. These member revenues will be tabulated monthly and the amounts paid to PVEC. All applicable payments will be deducted from the running Project total owed to PVEC by SCTC.

**AUDIT RIGHTS:** SCTC will have the right to audit project-related portions of PVEC's work order system at any time to determine total accumulated costs. PVEC will have the right to audit SCTC's collections of project-related revenue and all other SCTC expenditures pursuant to this initiative.

**SCTC RESPONSIBILITIES:** SCTC will be responsible for

- Providing light to the fiber,

- Provisioning services, monitoring equipment, engineering, material specifications,
- Identifying target areas in conjunction with PVEC,
- Quality control, training on installation of electronics, and training for splicing.

**NETWORK OWNERSHIP:** PVEC, at its sole discretion, may declare an area materially complete and, SCTC will then start paying Joint Use pole attachment rent to PVEC for poles in that area. The designated areas will be determined by PVEC. When 100% of the fiber network is paid in full, ownership of the fiber network will be transferred "AS IS" from PVEC to SCTC.

SCTC will provide, free of charge, network connectivity and communications to all installed PVEC Demarc equipment indefinitely, including downline devices, substations, radios, etc.

**DEFINITIVE AGREEMENT:** This Memorandum of Understanding sets forth the understanding of the parties regarding the transactions described herein. The parties shall exercise definitive agreements, including but not limited to, an operating agreement for Project by January 1, 2019, unless otherwise agreed by the parties.

If the foregoing is acceptable to you, please sign and date this Memorandum of Understanding in the space provided below.

**SCOTT COUNTY TELEPHONE COOPERATIVE**

BY: Bill Franklin  
Bill Franklin, General Manager/CEO

Date 1-14-19

**POWELL VALLEY ELECTRIC COOPERATIVE**

BY: Randell H. Meyers  
Randell Meyers, General Manager/CEO

Date 1/14/2019

**Fiber Lease Agreement  
between  
Scott County Telephone Cooperative  
and  
Powell Valley Electric Cooperative, Inc.**

This Agreement, made and entered into this the first day of January, 2019 between Scott County Telephone Cooperative of Gate City, Virginia (hereinafter called "SCTC"), and Powell Valley Electric Cooperative, Inc., with headquarters at New Tazewell, Tennessee (hereinafter called "PVEC") and collectively called "Parties."

**WITNESSETH:**

WHEREAS, the PVEC's service area includes all or parts of Claiborne, Hancock, Union, Grainger and Hawkins Counties in Tennessee, and parts of Lee, Scott and Wise Counties in Virginia (hereinafter called "Service Area") and, in an effort to modernize its electric grid, PVEC proposes to deploy fiber throughout its service area to meet the current and future needs of its electrical system; and

WHEREAS, in addition to improving communications with its offices, substations, down line devices, radios, and other equipment, PVEC plans to replace its existing antiquated metering system with real time metering (called AMI) by deploying fiber throughout its Service Area; and

WHEREAS, SCTC recognizes that Sunset Digital Communications, LLC currently provides PVEC with communications to its offices, substations, down line devices, radios, etc. under a long term agreement and

understands the need to coordinate its fiber deployment accordingly; and

WHEREAS, to ensure the success and timelines of PVEC's grid moderation project, PVEC plans to construct fiber and associated equipment to each home and business within its service area (hereinafter called "Buildout") and lease the excess fiber to SCTC, it being the objective of PVEC to provide the fiber deployment at zero net cost to its members.

NOW THEREFORE, for and in consideration of the premises and the mutual covenants set forth, the parties hereto covenant and agree to the following terms:

- I. Training: SCTC will provide, at SCTC's expense, adequate training for PVEC's personnel in all aspects of fiber installation and related equipment installation. SCTC will also provide, to PVEC at SCTC's expense, training in splicing, fiber allocation, and related training.
- II. Engineering and Design: PVEC will have full control of all design and construction of facilities it builds under this Agreement. SCTC may advise and consult but must, upon PVEC's request, provide all engineering. SCTC must determine, for PVEC and at no cost to PVEC, if materials that PVEC specifies are compatible with SCTC's network.
- III. Construction ("Buildout"):
  - A. Non-grant: PVEC will provide, install and splice dark fiber and provide and install associated hardware, enclosures, etc. (but will not provide or install pop sites or associated electronics) to every home and business without Broadband within PVEC's service area to meet



the PVEC's current and future electrical needs and will initially own the facilities that it constructs. SCTC may also construct (at its expense) and own facilities within PVEC's Service Area. To ensure compatibility, SCTC will purchase and provide all electronics.

B. Grant/Loan: SCTC and PVEC may jointly or individually apply for grants and/or loans to fund Broadband projects within PVEC's Service Area. The parties may negotiate separate unit prices and payment arrangements for such projects.

C. Fiber Lighting: In either case (Non-Grant or Grant/Loan), SCTC will light all fiber and incorporate it into SCTC's Network. SCTC shall offer Broadband Services to each prospective PVEC member.

IV. Maintenance: PVEC, at SCTC's expense, will, to the extent that it is able to do so, perform maintenance on the Buildout and SCTC's Network located within PVEC's service area. Said maintenance costs are not to be considered part of the Buildout Project costs.

V. Buildout Costs, Lease and Reimbursement:

A. Buildout costs incurred by the Cooperative will be accumulated utilizing the Cooperative's standard work order system and will include applicable overheads. In addition, Buildout costs will be increased to reflect PVEC's costs for any 3<sup>rd</sup> party joint-use pole rents paid for non-PVEC owned poles and for property taxes hereinafter described. All accumulated net buildout costs will be increased monthly by a 1/12 of 5% finance charge. All costs will be

accumulated and totaled on an ongoing basis to reflect PVEC's current Buildout Project costs.

B. SCTC will pay to PVEC a monthly lease fee equal to the following:

(a) For Residential Internet Service; 66.67% of SCTC's share of its revenue, and

(b) For Residential Dial Tone Service; 50.00% of SCTC's share of its net revenue, and

(c) For all services sold to businesses; 50.00% of SCTC's share of its net revenue, and

(d) For all video services, 0.00% of SCTC's share of its revenue.

These payments will be based on each customer connected and serviced from the Network (regardless of which party provided the construction), commencing January 1, 2019, and will continue until the sum of all monthly lease payments made hereunder equals PVEC's current total Buildout Project costs, including its finance charge, plus an accrued sum of 1/12 of 0.57% per month of PVEC's Gross Buildout Project Costs to cover its associated property taxes on the Buildout Project. Work performed by PVEC after this point is reached will be billed to and paid by SCTC on a "per job basis."

C. SCTC will promptly reimburse PVEC for any payments due it under any grant/loan projects. These reimbursements will be in addition to any monthly lease fee payments. Facility ownership will be in accordance with each applicable grant/loan.

VI. Communication Services Provided: SCTC will provide perpetually, at no cost to PVEC, all of the PVEC's communication requirements throughout its entire service area including but not limited to, its offices, substations, line equipment, radios and meters.

VII. The term of this agreement is perpetual and infinite. Either Party reserves the right to cancel this Agreement at any time subject to the following:

A. SCTC must continue making the monthly fiber lease payment, as provided above, until such time as the total fiber lease payments made hereunder equals PVEC's total Buildout Project costs, all 3<sup>rd</sup> party joint-use pole rents; all finance charges and all accrued property tax amounts, or pay all amounts due herein in full lump sum; and

B. SCTC must continue providing to PVEC the communication services set forth in VI above free of charge perpetually. In the event that SCTC or its successors assigns fail to adequately provide these free communications, SCTC (or its successors or assigns) herein grants PVEC an irrevocable right to use (IRU) 4 dark fibers within its entire network in Virginia and Tennessee to continue meeting its communication needs.

VIII. Customer Service/Payment Collections:  
Both Parties herein agree to mutually explore such means and methods by which PVEC may collect bill payments for and/or handle service requests for SCTC and negotiate a corresponding price per service/collection fee payable by SCTC to PVEC for such services rendered.

IX. Transfer of Ownership/Joint Use rents/Taxes:  
When the total lease payments made, (as provided in Article V.B above) equals PVEC's total Buildout Projects costs including the accrued property tax amount, accrued finance charges and any 3<sup>rd</sup> party joint-use pole rents, PVEC will sell its Buildout fiber facilities to SCTC for the sum of \$1.00 and other considerations as listed in Article VI and Article VII.B. Transfer of ownership will be "AS IS." PVEC, at its sole discretion, may also declare an area materially complete. SCTC must then start paying pole rent as provided under its current joint use pole agreement with PVEC for the additional attachments made to PVEC owned poles during the Buildout. Each party is responsible to the applicable taxing authority for the payment of taxes due on the fiber Buildout facilities that it owns. During the Buildout, SCTC is responsible for any joint use pole rents due PVEC for only SCTC owned facilities attached to PVEC owned poles.

X. 3<sup>rd</sup> Party: SCTC recognizes that some buildout facilities will be attached to 3<sup>rd</sup> party poles. For facilities constructed outside of PVEC's service area, PVEC will only serve as a subcontractor and SCTC will be responsible to PVEC for all of its costs. SCTC will own the facilities and be responsible for securing any 3<sup>rd</sup> party joint-use agreements. For facilities constructed within PVEC's service area, SCTC will be responsible for securing any applicable 3<sup>rd</sup> party joint-use agreements prior to the transfer of ownership from PVEC to SCTC.

XI. Audit Rights: SCTC will have the right to audit project related portions of PVEC's work order system at any time to determine total accumulated costs. PVEC will have the right to audit SCTC

collections of project related revenue pursuant to this Agreement.

XII. Power Space: SCTC recognizes that the Buildout facilities may include some fiber facilities being located in PVEC's power space and that such facilities require special qualifications and training for personnel working in such power space.

XIII. Assignment: This Agreement is not assignable by either party unless specifically approved by the other party.

XIV. Hold Harmless:

A. SCTC agrees to indemnify and hold harmless PVEC from and against any and all liability, costs, attorneys' fees incurred, expenses, claims and demands, including payment under any workman's compensation laws or under any plan for employee's disability and death benefits, for damage to property, and/or injury to or death of persons, including but not limited to, injuries to and death of employees of SCTC when such damage to property or injury to or death of persons arises out of, results from, or is caused by the negligence or intentional act of SCTC or its employees.

B. PVEC agrees to indemnify and hold harmless SCTC from and against any and all liability, costs, attorneys' fees incurred, expenses, claims and demands, including payment under any workman's compensation laws or under any plan for employee's disability and death benefits, for damage to property, and/or injury to or death of persons, including but not limited to, injuries to and death of employees of PVEC when such damage to property or injury to or death of

persons arises out of, results from, or is caused by the negligence or intentional act of PVEC or its employees.

XV. Relationship between the Parties: It is understood and agreed that the relationship between the Parties created by this Agreement is that of independent lessor and independent lessee. The Parties agree to comply with all state and federal laws regarding employment of their own employees (if any) including, but not limited to: (a) unemployment insurance, (b) worker compensation (c) withholding of taxes, (d) social security, (e) pension and retirement plans, and (f) medical insurance, and any and all other such regulations and laws, and to further forever save and hold harmless the other party from any and all liability resulting from their failure to so perform.

*(Signatures appear on following page.)*

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their respective officers thereunto duly authorized, as of the day and year first written above.

**SCOTT COUNTY TELEPHONE  
COOPERATIVE**

William J. Franklin  
William J. Franklin, CEO

ATTEST:

Charles "B" Good

**POWELL VALLEY ELECTRIC  
COOPERATIVE, INC.**

Randell W. Meyers  
Randell W. Meyers  
General Manager/CEO

ATTEST:

Charles "B" Good

Attachment 17

# 2

Pole Attachment Agreement

STE (SCTC's Subsidiary)

&

KUC/ODP



8-29-19

**POLE LICENSE AGREEMENT**

**between**

**KENTUCKY UTILITIES COMPANY d/b/a**

**OLD DOMINION POWER COMPANY**

**and**

**SCOTT TELECOM AND ELECTRONICS**

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## LICENSE AGREEMENT

This License Agreement (this "Agreement") is made as of the 10<sup>th</sup> day of December, 2019, ("Effective Date") by and between KENTUCKY UTILITIES COMPANY d/b/a OLD DOMINION POWER COMPANY, a corporation organized under the laws of the Commonwealth of Kentucky, having its principal office at 220 West Main Street, Louisville, Kentucky 40202 ("ODP" or "Company") and SCOTT TELECOM AND ELECTRONICS, a Virginia Corporation organized under the laws of the State of Virginia, having its principal place of business at 149 Woodland Street, Gate City, Virginia 24251 ("Licensee"), each a "Party" and together the "Parties."

## RECITALS

ODP is an electric utility company providing services in the Commonwealth of Virginia. ODP owns and maintains certain Structures (as defined below) to support electric service conductors. Such Structures also are useful for supporting Cables (as defined below) used in the provision of communications services.

Licensee is either a cable television system or a telecommunications carrier as those terms are used in 47 U.S.C. §224 (the "Pole Attachments Act").

Licensee desires to install and operate Cables on the Structures in the Service Area as described below, and ODP desires to make Structures available to Licensee, subject to the terms and conditions set forth below.

## AGREEMENT

NOW THEREFORE, in consideration of the promises and the mutual covenants herein, and for other good and valuable consideration, the receipt of which is hereby acknowledged, the Parties agree as follows:

1. Definitions. The following definitions shall apply for purposes of this Agreement. Capitalized terms used in this Agreement but not defined in this Section 1 shall have the meaning provided elsewhere in this Agreement. The meaning applied to all terms shall be equally applicable to both the singular and plural forms of the term defined.

"Affiliate" means, with respect to any Person, any other Person controlling, controlled by or under common control with, such Person. For purposes of this definition, the term "control" of a Person means direct or indirect ownership of more than fifty percent (50%) of the outstanding voting stock of a corporate person or voting interest in a non-corporate Person.

"Approved Contractor" means a contractor approved by ODP for a particular purpose.

"Attachment" means the Cable and all associated appliances including without limitation any overlashed cable, small splice panels and vertical overhead to underground risers but excluding power supplies, equipment cabinets, meter bases and other equipment that

impedes accessibility or otherwise conflicts with ODP's electric design and construction standards. This term also excludes any wireless facilities, other than as expressly set forth herein.

"Business Day" shall mean any Monday through Friday during which ODP is open for regular business.

"Cable" means the fiber optic and/or coaxial cable, as well as any messenger wire or support strand.

"Communication Space" shall mean the area below the Communication Worker Safety Zone to the limit of allowable NESC clearance, department of transportation or other governmental requirements, and ODP's internal construction standards.

"Communication Worker Safety Zone" is defined by the NESC and ODP's internal construction standards as that space between the facilities located in the Electric Space and facilities located in the Communications Space. Except for limited exceptions such as brackets, conduits, or drip loops of luminaires, no electric supply or communication facilities shall be located in the Communication Worker Safety Zone.

"Contractor" means any Person employed or engaged by Licensee to perform work or render services under this Agreement upon or in the immediate vicinity of ODP's Structures or associated facilities other than Licensee and Licensee's employees.

"Credit Rating" means, with respect to any entity, the rating then assigned to such entity's unsecured, senior long-term debt obligations (not supported by third party credit enhancements) by Standard and Poor's Rating Group or its successor ("S&P"), or Moody's Investor Services, Inc. or its successor ("Moody's"), or if such entity does not have a rating for its senior unsecured long-term debt, then the rating then assigned to such entity as its "corporate credit rating" assigned by S&P, or the "long-term issuer rating" assigned by Moody's.

"Distribution Pole" means a utility pole supporting electric supply facilities, all of which operate at less than 69 kV.

"Electric Space" shall mean the space above the Communications Worker Safety Zone reserved for the installation of electric supply lines. Specific clearances and exceptions are contained in the NESC and ODP's internal construction standards.

"FCC" means the Federal Communications Commission.

"Federal Laws" means applicable federal statutes, case law, orders, rules and regulations, and administrative decisions.

"Letter(s) of Credit means one or more irrevocable, transferable standby letters of credit issued by a U.S. commercial bank or a foreign bank with a U.S. branch in a form acceptable

to the Company. Costs of a Letter of Credit shall be borne by the applicant for such Letter of Credit.

“Licensee Event of Default” shall have the meaning provided in Section 15 of this Agreement.

“License Fee” shall have the meaning provided in Section 17 of this Agreement.

“Make Ready Survey” means a survey, in the form prescribed by ODP from time to time, prepared by ODP, Licensee or an Approved Contractor describing in reasonable detail the make-ready engineering requirements, and such other information as ODP may hereafter require, for the installation of an Attachment or group of Attachments on a Structure or group of Structures.

“National Electrical Safety Code” or “NESC” shall refer to the publication of the Institute of Electrical and Electronic Engineers, as modified, amended, and/or supplemented from time to time.

“Performance Assurance” means collateral in the form of cash, surety bond, Letter(s) of Credit, or other security acceptable to the Company.

“Person” means a corporation, limited liability company, partnership, association, organization, joint venture, company, governmental body or individual.

“SCC” means the Virginia State Corporation Commission, Division of Public Utility Regulation.

“Service Area” means the geographic area within Virginia in which ODP provides electrical service, as such area is defined by the SCC and as such area may be modified, expanded, contracted and/or redefined by the SCC or any successor agency from time to time. ODP’s current Service Area is described in Schedule 1, attached hereto.

“Service Drop” means a Cable, attached to a pole with a J-hook or other similar hardware, that connects the trunk line a customer’s premises. No service cable may extend more than one span along the trunk line to the Service Drop.

“State Laws” means applicable state statutes, case law, orders, rules and regulations, administrative decisions, including but not limited to those of the SCC.

“Structure” means any pole normally used by ODP to support its electric conductors but does not include either (1) any Transmission Pole, or (2) any pole used solely for street or outdoor lighting purposes.

“Transmission Pole” means any utility pole supporting electric supply facilities designed to operate at 69 kV or greater.

2. License. Subject to the terms and conditions set forth herein, including payment of fees and consideration as may be set forth herein, as of the Effective Date, ODP hereby grants to Licensee and Licensee hereby accepts from ODP a non-exclusive license to affix and install Attachments on Structures located in the Service Area.
3. Structures Subject to Agreement; Other Licensees.
  - a. All Structures used pursuant to this Agreement shall be and remain the property of ODP regardless of the nature or amount of any payment by Licensee, and Licensee shall not, except as specifically provided herein, acquire any right, title or interest in or to any such Structures except as provided herein.
  - b. Except as specifically provided herein, Licensee's license is non-delegable, non-transferable and non-assignable, and any delegation, transfer, or assignment of any interest in such license without prior written consent of ODP shall be voidable at ODP's option.
  - c. Nothing herein shall be construed as affecting the rights or privileges previously conferred by ODP, by contract or otherwise, to others not party to this Agreement, to use any Structure covered by this Agreement. The license herein granted shall at all times be subject to such previously conferred privileges. Furthermore, nothing herein shall be construed as affecting the rights or privileges that may be conferred by ODP in the future, by contract or otherwise, to others not party to this Agreement, to use any Structure covered by this Agreement, and ODP shall have the right to extend such rights and privileges.
  - d. The existing telephone companies with whom ODP has joint use agreements generally are assigned to the lowest relative position on any given pole. Licensee generally should occupy the next available space above the highest existing attachment (not including any of ODP's facilities); but in no event shall Licensee place its attachments within the space allocated to the telephone company pursuant to the joint use agreement without permission from the telephone company. If such permission is granted to Licensee by the telephone company, and at some later date the party to which the space is allocated needs to utilize the space occupied by Licensee's Attachment, Licensee shall either (1) remove it Attachment or (2) pay ODP's cost to replace the pole or make other required modifications.
  - e. Unless otherwise expressly stated in this Agreement, no reference to Federal Laws or State Laws or to any government agency in this Agreement shall be interpreted as either Party's agreement or acquiescence to the applicability of such laws or the jurisdiction of such agency.
  - f. In the event ODP determines that ODP will cease use of a Structure and abandon or remove such Structure, ODP shall provide Licensee with a minimum of sixty (60) days' notice before such abandonment unless ODP is required to complete such abandonment in a shorter time period due to state or municipal requirements,

easement provisions or contractual obligations to third parties, in which case ODP shall provide as much notice as possible under the circumstances.

4. Easements.

- a. Licensee shall secure any right-of-way, easement, license, franchise or permit from any Person which may be required for the construction or maintenance of Attachments by or for Licensee. ODP does not convey or guarantee any easements, rights-of-way or franchises for the construction or maintenance of said Attachments.
- b. Upon written request by Licensee, ODP may provide to Licensee such non-private information as ODP may have regarding the name of the record landowners from which ODP obtained easements for Structures. Such information will be provided without representation or warranty of any kind as to its accuracy or completeness. ODP shall have no obligation to correct or supplement any information so provided.
- c. In the event ODP provides assistance to Licensee in obtaining easements or other property rights, Licensee shall reimburse ODP's cost of providing such assistance within thirty (30) days of receipt of an invoice.

5. Approval for Attachments; Make-Ready Work.

- a. Except as set forth in Sections 5.h. and 5.i. below, Licensee shall make no Attachment to any Structure without ODP's prior written approval as set forth in this Agreement.
- b. Licensee shall make written application, in the form prescribed by ODP, for permission to install Attachments on any Structure. Each application shall include: (i) the number and location of all Structures for which license to attach is sought and the amount of space required thereon; (ii) the physical attributes of all proposed Attachments; (iii) a load bearing study for each Attachment, unless the Company finds such study is not necessary; (iv) the proposed start date for installation of the Attachments described in the application; (v) any issues then known to Licensee regarding space, engineering, access or other matters that might require resolution before installation of Attachments. Unless the Parties agree otherwise in writing, Licensee shall submit applications for no more than 300 Structures during any thirty (30) day period.
- c. Within forty-five (45) days after receipt of a completed application (such completeness to be determined in ODP's sole discretion), ODP shall notify Licensee in writing whether ODP will permit the use by Licensee of the Structures sought to be licensed and any conditions imposed on the installation or use of Attachments. If ODP denies access to any Structures, ODP's notice shall explain the basis of the denial. This forty-five (45) day period shall be primarily for the purpose of performing a Make-Ready Survey and engineering analysis in connection with the proposed Attachments. Licensee shall be responsible for all



costs associated with the Make-Ready Survey and engineering analysis, and shall reimburse ODP upon presentation of an invoice for same.

- d. If an application is approved, ODP shall provide Licensee a written estimate of the costs of any necessary ODP make-ready work (including but not limited to rearrangement of electric supply facilities and pole change out). Licensee shall indicate its approval of the make-ready estimate by submitting payment of the estimated amount within fifteen (15) days of receipt of the estimate. ODP will commence such work following receipt of payment of the invoice. If facilities of a third party are required to be rearranged or transferred, Licensee shall coordinate with the third party for such rearrangement or transfer and shall pay the costs related thereto.
- e. Where a new Structure is erected (including the replacement of an existing Structure) solely to provide adequate capacity for Licensee's proposed Attachments, the actual cost of the new Structure, as well as related appurtenances, plus the cost of removal of the existing Structure, minus the salvage value of the removed Structure, if any, shall be included within the make-ready estimate. The new Structure shall be the property of ODP regardless of any payments by Licensee toward its cost, and Licensee shall acquire no right, title or interest in or to such Structure.
- f. In the event ODP has failed to perform the Make-Ready Survey and engineering analysis within the forty-five (45) day period referenced in Section 5.c. above, Licensee may perform such work at Licensee's expense using Approved Contractors.
- g. In the event ODP has failed to perform the ODP make-ready work within ninety (90) days of receipt of Licensee's payment of the make-ready estimate, Licensee may perform such work at Licensee's expense using an Approved Contractor, provided that ODP shall provide a refund of any unexpended make-ready fees to Licensee within ten (10) days of Licensee notifying ODP that Licensee has performed the work. In the event make-ready work is performed by Licensee as described above in this Section 5.g., Licensee shall notify ODP upon completion of such make-ready work, and ODP may, at Licensee's expense, perform an inspection of such work prior to the construction of Attachments.
- h. Service Drops may be affixed and installed on a Structure without making written application if (1) it is affixed within six (6) inches of Licensee's existing Attachment, (2) it conforms to all ODP standards and all federal, state and local government laws, rules, regulations, ordinances, or other lawful directives applicable to construction and installation of Attachments, and (3) written notice of each such Service Drop is provided to ODP in the month following the month of its installation. A Service Drop shall be counted as an Attachment for purposes of billing and permitting if it (1) is attached to a pole without an existing Attachment, (2) extends more than one span along the trunk line (in which case each individual

pole to which such Service Drop is attached shall be treated as the site of an individual Attachment), or (3) is affixed to a pole at a point beyond six (6) inches of Licensee's existing Attachment.

- i. Licensee shall provide fifteen (15) days' prior notice of any proposed overlash of an existing Attachment. The notice shall include: (i) the date of the proposed work; (ii) the exact route of the proposed overlash; (iii) the specifics of the fiber, coaxial or other cable to be overlashed to the existing Attachment; (iv) a pole loading analysis performed by a qualified contractor that demonstrates the proposed overlash will not create a violation or exacerbate an existing violation; and (v) any other information reasonably required by ODP from time to time. In the event make-ready work is necessary to accommodate Licensee's proposed overlash Licensee may not proceed with the overlash until such make-ready work is completed in the normal course as set forth in Sections 5.b. though 5.g. above.
- j. Before deploying any strand-mounted wireless communications devices other than strand-mounted wi-fi access points, Licensee shall at least forty-five (45) days prior to planned deployment notify Company of the proposed deployment and provide sufficient information regarding the nature of the device to permit Company to assess the safety and loadbearing implications of the proposed deployment.

6. Construction and Maintenance Requirements and Specifications.

- a. Design, construction, or installation practices for Attachments and Licensee's installation thereof shall be approved by ODP in writing before any construction or installation of Attachments.
- b. All Attachments shall be constructed and installed in a manner reasonably satisfactory to ODP and so as not to interfere with the present or future use which ODP reasonably may desire to make of its Structures. At all times, Licensee shall maintain, operate and construct all Attachments in such manner as to insure that ODP has full and free access to all of its facilities. All Attachments shall, with respect to clearances and otherwise, conform to ODP's electric design and construction standards and applicable requirements of the NESC, the National Electrical Code, and all other applicable codes and laws. In the event of a conflict, the more stringent standard shall apply.
- c. Licensee shall identify each of its Attachments with a tag, approved in advance by ODP, that includes Licensee's name, twenty-four (24) hour contact telephone number, and such other information as ODP may require. Licensee shall tag new Attachments at the time of construction. Any Attachments existing as of the date of this Agreement shall be tagged within one hundred and eighty (180) days of the date of this Agreement.
- d. In the design, installation and maintenance of its Attachments, Licensee shall follow all ODP safety guidelines in addition to safety and design requirements promulgated by the United States Occupational Safety and Health Administration,

the Virginia Department of Labor, the SCC and any other regulatory body having jurisdiction over the work of constructing and installing the Attachments, all as may be changed from time to time. All work shall be performed in accordance with the applicable standards of the NESC and the National Electrical Code. Licensee shall take all necessary precautions, by the installation of protective equipment or other means, to protect all persons and property of all kinds against injury or damage caused by or occurring by reason of the construction, installation or existence of Attachments.

- e. Licensee shall make immediate report to ODP of (i) any damage caused to property of ODP or others in the course of installing or maintaining Attachments and (ii) any failure by Licensee to meet the requirements set forth herein for assuring the safety of persons and property and compliance with laws and regulations of public authorities and standard-setting bodies.
- f. Licensee shall complete installation of its Attachments within sixty (60) days of approval of any application or completion of make-ready work, whichever is later. Licensee shall notify ODP in writing upon completion of installation. ODP, at Licensee's expense, may conduct an inspection of such Attachments, and Licensee shall reimburse ODP within thirty (30) days of presentation of an invoice for such inspections.
- g. ODP may monitor Licensee's construction and installation of Attachments. If the need for a monitor is caused by Licensee's failure to comply with the terms of this Agreement, applicable laws or regulations, Licensee shall be responsible for the actual cost(s) of any such monitoring within thirty (30) days of receipt of an invoice.
- h. Licensee may use qualified contractors of its own choice to perform work below the Communication Worker Safety Zone. For any work in or above the Communication Worker Safety Zone (when expressly permitted by this Agreement), Licensee must use an Approved Contractor.
- i. Licensee shall comply with all applicable Federal Laws, State Laws, and local laws, rules and regulations with respect to environmental practices undertaken pursuant to its performance of this Agreement. Licensee shall not bring, store or utilize any hazardous materials on any ODP site without the prior express written consent of ODP. To the extent reasonably practicable, Licensee shall restore any property altered pursuant to its performance under this Agreement to its condition existing immediately prior to Licensee's alteration. ODP shall have no obligation to correct or restore any property altered by Licensee and shall bear no responsibility for Licensee's compliance with applicable environmental regulations.
- j. If Licensee has not installed Attachments in accordance with the design standards and terms of this Agreement, and ODP provides written notice to Licensee describing the defect, Licensee, at its own expense, shall make necessary adjustments within thirty (30) days. Subject to Section 10 below, if Licensee fails to make such adjustments within thirty (30) days, ODP, at its option, may make

such repairs or adjustments, and Licensee shall pay ODP for the actual cost thereof, plus liquidated damages in the amount of 50% of the actual cost, within thirty (30) days of receipt of an invoice.

- l. Licensee at all times warrants compliance with all requirements set out in this Section 6, assumes the continuing responsibility for such compliance in the future and assumes all responsibility for any damage, fines or penalties resulting from any noncompliance. ODP undertakes no duty to require any specific action by Licensee and assumes no responsibility by requiring such compliance or by requiring Licensee to meet any specifications or to make any corrections, modifications, additions or deletions to any work or planned work by Licensee.
  - m. Within 15 days of completion of the installation, Licensee shall provide ODP with complete "as-built" drawings in a computer-generated electronic format (or such other format as is agreeable to ODP). No hand drawings satisfy this requirement. Such "as-built" drawings of Licensee's facilities shall be considered confidential and proprietary and subject to the provisions of Section 22 of this Agreement.
7. [RESERVED].
8. Maintenance of Attachments; Vegetation Management; National Joint Utilities Notification System.
- a. At all times, Licensee shall, at its own expense, maintain Attachments in safe condition and in good repair, in a manner reasonably suitable to ODP and so as not to conflict with any use of ODP facilities (including Structures) by ODP or by any other Person using such facilities pursuant to any license or permit by ODP. Licensee shall also ensure that its Attachments are constructed in a manner so as to minimize aesthetic nuisance, and maintained in a manner so as to avoid unsightliness. Licensee agrees not to interfere with the working use of any other Person's property on such facilities or any such property, which may, from time to time, be placed on or near ODP's Structures and other facilities. Maintenance of the Attachments shall be performed only by qualified personnel as provided in Section 6.h. of this Agreement.
  - b. Licensee shall, at its own risk and expense, perform any tree trimming and/or vegetation management work necessary to keep its Attachments and Cables free from vegetation. In the event such work presents the risk of contact with energized electric facilities, Licensee shall so notify ODP and ODP will perform such work at Licensee's sole risk and expense.
  - c. The Parties recognize that improved coordination of activities under this Agreement is of mutual benefit to all parties, and that Licensee's and ODP's participation in the National Joint Utilities Notification System ("NJUNS"), a Web-based system developed for the purpose of improving the coordination of such activities, would improve their respective operations under this Agreement. Licensee will join NJUNS prior to making application for Attachment, or within

thirty (30) days of the execution of this Agreement (if it has not already), whichever is sooner, and, during the term of this Agreement or as long as Licensee has Attachments on ODP's poles, will actively participate by entering field information into the NJUNS system within the times required by the system. Should Licensee fail to actively participate in NJUNS and should such failure cause ODP to incur any expense or any liability to others, Licensee shall reimburse ODP its expense and indemnify and hold ODP harmless from any damages or liability arising out of such failure. ODP may, in its sole discretion, utilize a different web-based system for the purposes stated in this Section 8.c., but shall provide Licensee with at least sixty (60) days' notice of any such change.

9. Structure Inspection; Field Inspections.

- a. ODP undertakes no duty to inspect or ensure the repair of any facilities or Structures. ODP may make periodic inspections, as conditions may warrant, for the purpose of determining compliance with this Agreement. Neither ODP's right to make inspections nor any inspection made by ODP shall relieve Licensee of any responsibility, obligation or liability assumed under this Agreement.
- b. ODP may conduct a complete field inspection of its Structures at any time for the purpose of verifying the number, location and type of all Attachments of Licensee on ODP's Structures. ODP shall give Licensee at least thirty (30) days' notice of such inspection.
  - i. If the field inspection reveals that Licensee has more Attachments than shown in ODP's existing records, the additional Attachments shall be treated as Unauthorized Attachments pursuant to Section 18.
  - ii. Licensee shall reimburse ODP for the cost of such inspections (or a pro rata share of such inspections, if the facilities of other licensees are inspected at the same time).

10. Interference or Hazard. If ODP notifies Licensee in writing or orally with written confirmation that, in ODP's reasonable judgment, the Attachments or the condition of Attachments of Licensee on any Structures (i) interfere with the use of such Structures or the operation of ODP facilities or equipment, (ii) constitute a hazard to the service rendered by ODP or any other Persons licensed by ODP to use such Structures, (iii) cause a danger to employees of ODP or other persons, or (iv) fail to comply with applicable codes, specifications, laws or regulations, then Licensee shall, within a reasonable period, remove, rearrange, repair or change its Attachments as needed or as directed by ODP. In the case of any immediate hazard or danger, such period shall not exceed twenty-four (24) hours from receipt of such notice. In case of a hazardous condition or other emergency which in ODP's good faith and reasonable judgment requires ODP to immediately remove or relocate the Attachments of Licensee, ODP reserves the right, at Licensee's expense, without prior notice and with no liability therefor, to remove or relocate such Attachments as required (provided ODP shall provide Licensee with notice, which may be by telephone, of any such action as soon as reasonably possible thereafter).

11. Rearrangement; Relocation of Structures; New Structures.

- a. If Licensee's desired Attachments can be accommodated on existing Structures of ODP only by rearranging facilities of ODP, or if because of Licensee's proposed Attachments it is necessary for ODP to rearrange or transfer its facilities on any facility not owned by it, Licensee shall reimburse ODP for the actual expense incurred in making such rearrangement.
- b. Upon sixty (60) days prior written notice delivered to Licensee (except in emergency or dangerous situations, in which event ODP shall give only as much prior notice as practical under the circumstances), ODP shall have the right to replace, relocate, remove or abandon any Structure and to cause the alteration, relocation or removal of any Attachment, consistent with normal operating, maintenance and development procedures and prudent utility practices. ODP will bear all costs and expenses of any relocation of the Structures not attributable to or caused by Licensee or the Attachments, and Licensee will bear all costs and expenses of any relocation and removal of the Attachments and all costs and expenses attributable to or caused by Licensee or the Attachments. Licensee shall be solely responsible for, and hold ODP harmless from, any losses occasioned by the interruption of Licensee's business or operations.
- c. In the event ODP determines that any space occupied by the Attachments is required in connection with the services provided by ODP or any of its Affiliates, ODP shall be entitled to direct, by written notice to Licensee, that such Attachments be removed from the Structures. Licensee agrees to complete such removal within sixty (60) days of ODP's request.
- d. If Licensee fails to timely perform any work as instructed by ODP pursuant to this Section 11 or any other Section of this Agreement, ODP may either (i) perform such work at Licensee's sole risk and expense in which case Licensee shall pay ODP for the actual cost thereof, plus liquidated damages in the amount of 50% of the actual cost, within thirty (30) days of receipt of an invoice, or (ii) ODP may charge Licensee, as liquidated damages, \$50 per Structure on which Licensee has failed to timely perform such work and an additional \$50 per Structure for each thirty (30) day period until Licensee performs such work.

12. Licensee's Abandonment of Structures. Licensee may at any time abandon the use of a Structure hereunder by removing therefrom all of its Attachments and by giving written notice thereof to ODP. Licensee shall bear all cost of removal and any ODP costs incurred as a result of such removal within thirty (30) days of receipt of an invoice. ODP shall make no refund of any amount paid by Licensee for use of such Structure, nor shall any other obligation or liability of Licensee under this Agreement be affected by such abandonment.

13. Maintenance and Operation of ODP's Structures. ODP reserves to itself, its successors, Affiliates and assigns, the right to maintain Structures and other ODP property and to operate its business and maintain its property in such a manner as will, in its own judgment, best enable it to fulfill its own service requirements. ODP shall not be liable to Licensee

for any interference with the operation of Licensee's facilities, or loss of business arising in any manner out of the use of ODP's Structures or other property hereunder.

14. Indemnity; Limitation of Liability.

a. Indemnity.

- i. Licensee agrees to protect, defend, indemnify and save harmless ODP, its Affiliates, their officers, directors, employees and representatives (each an "Indemnitee" hereunder) from and against all damage, loss, claim, demand, suit, liability, penalty or forfeiture of every kind and nature, including but not limited to costs and expenses of defending against the same, payment of any settlement or judgment therefor and reasonable attorney's fees that are incurred by Indemnitee, by reason of any claims arising from Licensee's activities under this Agreement, or from Licensee's presence on the premises of ODP, or from or in connection with the construction, installation, operation, maintenance, presence, replacement, enlargement, use or removal of any facility of Licensee attached to, or in the process of being attached to or removed from, any Structure of ODP by Licensee, its employees, agents, or other representatives, including but not limited to (a) claims alleging injuries or deaths to persons; (b) claims alleging damage to or destruction of property including loss of use thereof; (c) power or communications outage, interruption or degradation; (d) pollution, contamination of or other adverse effects on the environment; (e) violation of governmental laws, regulations or orders; or (f) rearrangement transfer or removal of any third party attachment on, from or to any Structure of ODP. The indemnity set forth in this section shall include indemnity for ODP's own negligence, but shall not include indemnity to the extent of ODP's gross negligence or willful misconduct.
- ii. Licensee hereby expressly agrees to indemnify and save harmless ODP from any and all claims, including the expenses incurred by ODP to defend itself against such claims, resulting from or arising out of the failure of Licensee to secure any right of way, easement, license, franchise or permit as required in Section 4 above.

- b. Limitation of Liability. IN NO EVENT SHALL ODP OR ANY OF ITS REPRESENTATIVES BE LIABLE UNDER THIS AGREEMENT TO LICENSEE FOR CONSEQUENTIAL, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, PUNITIVE OR ENHANCED DAMAGES, LOST PROFITS OR REVENUES OR DIMINUTION IN VALUE, ARISING OUT OF, OR RELATING TO, OR IN CONNECTION WITH THIS AGREEMENT, REGARDLESS OF (A) WHETHER SUCH DAMAGES WERE FORESEEABLE, (B) WHETHER OR NOT ODP WAS ADVISED OF THE POSSIBILITY OF SUCH DAMAGES OR (C) THE LEGAL OR EQUITABLE THEORY (CONTRACT, TORT OR OTHERWISE) UPON WHICH THE CLAIM IS

BASED.

15. Default by Licensee.

- a. Each of the following shall constitute a Licensee Event of Default:
  - i. Failure by Licensee to pay any fee required, perform any material obligations undertaken or satisfy any warranty or representation made under this Agreement; and
  - ii. The occurrence of a sale, lease, license, mortgage, hypothecation, or other transfer of any kind, by instrument, judgment, operation of law or otherwise, of any interest in Attachments to any Person without the express written consent of ODP, which consent shall not be unreasonably conditioned, withheld or delayed; provided, however, that a contract for service to a customer of Licensee or the transfer of rights to use dark fiber within the Cable without a transfer of any interest in Attachments shall not alone constitute a transfer described in this paragraph.
- b. If, within thirty (30) days after receipt of ODP's written notice of the occurrence of a Licensee Event of Default, Licensee has not cured the default so notified, ODP may take any or all of the following actions:
  - i. Terminate the license granted herein to the extent of Structures to which such default or non-compliance is applicable;
  - ii. Remove, relocate, or rearrange Attachments of Licensee to which such default or non-compliance relates, all at Licensee's expense;
  - iii. Decline to permit additional Attachments hereunder until such failure or default is cured;
  - iv. Terminate this Agreement, and recover from Licensee all costs and expenses incurred as a result of or reasonably related to the Licensee Event or Events of Default and the termination of this Agreement;
  - v. To the extent permitted by applicable laws, in the event that Licensee shall have terminated business operations and shall be unable or unwilling to remove substantially all Attachments from the property of ODP, assume ownership and control of all Attachments and all related equipment of Licensee attached to ODP's Structures; and
  - vi. Pursue any and all remedies that may be available in law and equity, including specific performance.
- c. No liability shall be incurred by ODP upon its taking of any or all actions described in this Section 15 and Licensee shall be liable for all expense, including reasonable



attorney's fees and court costs incurred by ODP in pursuit of such remedies or as a result of the termination of this Agreement thereunder. The remedies provided herein are cumulative and in addition to any other remedies available to ODP under this Agreement or otherwise. No refund of any license fee will be due on account of termination.

16. Default by ODP. If ODP fails to comply with any provisions of this Agreement or defaults in the performance of any of its obligations under this Agreement and fails within thirty (30) calendar days, after written notice from Licensee, to cure the default (except that if such a failure is of a nature that cannot be reasonably cured within 30 days then ODP shall not be deemed in default hereunder and Licensee may not take any of the following actions so long as ODP commences good faith action to cure the default notified within such 30 day period and thereafter diligently pursues such action), then Licensee may terminate this Agreement and/or pursue any and all such remedies as may be available in law or in equity, including, without limitation, the remedy of specific performance. No liability shall be incurred by Licensee because of any or all such actions. The remedies provided herein are cumulative and in addition to any other remedies available to Licensee under this Agreement or otherwise.
17. License Fees.
  - a. All attachment charges for use of Structures will be billed semi-annually based upon the number of Licensee's Attachments reflected in ODP's records on December 1 and June 1. Payment of License Fees and other consideration provided in this Agreement shall not entitle Licensee to affix or install Attachments if other terms of this Agreement have not been met.
  - b. All invoices submitted by ODP under this Agreement are due when rendered. Any bill not paid in full within sixty (60) days of its issuance shall be assessed a late payment fee of 3 percent on the bill's current charges. If the Licensee fails to pay all charges and fees billed within six months of the bill's issuance, ODP may remove any or all of Licensee's Attachment's.
  - c. For all Attachments made under this Agreement, the annual License Fee shall be \$6.97/year per each Attachment, subject to annual adjustment as set forth in Section 17.d. below.
  - d. The License Fee may be adjusted annually based upon on the preceding year's data in accordance with the FCC's pole attachment rate formulas.
18. Unauthorized Attachments. If Licensee makes any Attachment that requires ODP approval and Licensee has not obtained such approval, such Attachment shall be deemed an "Unauthorized Attachment" and shall be presumed to have been affixed to OPD's Structure(s) for five (5) years or since completion of the most recent field inspection (whichever is less). Licensee shall be liable for License Fees for this time period, and shall pay additional liquidated damages in the amount of \$25.00 for each Unauthorized Attachment to offset indirect administrative costs reasonably anticipated in connection

with the Unauthorized Attachment. Licensee shall also submit to ODP an application for approval of the Unauthorized(s) Attachment within 30 days of discovery. If Licensee fails to submit the required applications or fails to timely remit any necessary payments to ODP in connection with the application process (including but not limited to any make-ready fees necessary to accommodate the Unauthorized Attachments), ODP may remove any or all such Unauthorized Attachments at Licensee's sole risk and expense.

19. Waivers. Failure by either Party to enforce or insist upon compliance with any of the terms or conditions of this Agreement shall not constitute a general waiver or relinquishment of any such terms or conditions, but the same shall be and remain at all times in full force and effect.
20. Term and Termination.
  - a. This Agreement shall become effective upon the Effective Date.
  - b. If not terminated in accordance with the provisions of this Section 20 or Sections 15 or 16 above or by mutual agreement of the Parties, this Agreement shall continue in effect for a term of five (5) years from the Effective Date, and shall thereafter automatically renew for successive one (1) year periods unless one Party gives the other Party written notice of termination at least sixty (60) days in advance of the next renewal date.
  - d. Upon termination of this Agreement, Licensee shall remove all Attachments from Structures and other ODP property within one hundred eighty (180) days. All costs of such removal shall be borne by Licensee. Licensee shall exercise precautions to avoid damage to all persons and to facilities of ODP and other parties in so removing Attachments and assumes all responsibility for any and all such damage caused by Licensee. If Licensee's Attachments and other property are not promptly removed upon termination of this Agreement, as herein provided, unless the time is extended by mutual agreement, ODP shall have the right to remove said Attachments without liability therefor, and Licensee shall pay ODP the cost of such removal within thirty (30) days of receipt of an invoice.
  - e. ODP may terminate this Agreement without liability to Licensee, upon giving sixty (60) days advance written notice to Licensee: (i) at such time as it is determined in the reasonable opinion of ODP's legal counsel that ODP's performance hereunder would be illegal under applicable law or regulation or under any order or ruling issued by the SCC, or any other federal, state or local agency having regulatory jurisdiction over ODP and same cannot be cured by ODP without unreasonable expense or without materially and substantially altering the terms and conditions of this Agreement; or (ii) if, in the reasonable opinion of ODP's legal counsel, termination is required to preserve ODP's rights under any franchise, right-of-way, permit, easement or other similar right which is material and substantial to ODP's business or operations. In the event of such termination, the Parties shall pay and perform obligations, which have arisen prior to the effective date of termination,

but shall not be obligated to pay and perform obligations, which arise after the effective date of termination.

21. Insurance.

- a. For the entire duration of this Agreement (and thereafter until the completion of this Agreement, including but not limited to any period of time during which Licensee's Attachments remain on ODP's Structures) on a per occurrence basis with respect to this Agreement, Licensee shall, at its own expense, maintain and carry in full force and effect, and shall require any of its Contractors and subcontractors to maintain and carry in full force and effect, the following insurance:
  - i. Workers' Compensation and Employer's Liability Policy, which shall include:
    - (a) Workers' Compensation (Coverage A), with statutory limits, and in accordance with the laws of all states where the Attachments are located;
    - (b) Employer's Liability (Coverage B) with minimum limits of One Million Dollars (\$1,000,000) Bodily Injury by Accident, each Accident, \$1,000,000 Bodily Injury by Disease, each Employee;
    - (c) Thirty (30) Day Cancellation Endorsement; and
    - (d) Broad Form All States Endorsement.
    - (e) with respect to any personnel of Licensee or any Subcontractor who perform work to which the U.S. Longshore and Harbor Workers Compensation Act is applicable, U.S. Longshore and Harbor Workers Compensation Act coverage (required if workers of Licensee or Subcontractor are performing work that falls under such Act; and
    - (f) with respect to any personnel of Licensee or any Subcontractor who perform work on commercial vessels, Maritime Employers Liability (MEL) including Jones Act coverage (required at all times workers of the Licensee or Subcontractor are working on commercial vessels) any time during the period of this Agreement.
  - ii. Commercial General Liability Policy, which shall have minimum limits of One Million Dollars (\$1,000,000) each occurrence; One Million Dollars (\$1,000,000) Products/Completed Operations Aggregate each occurrence; One Million Dollars (\$1,000,000) Personal and Advertising Injury each occurrence, in all cases subject to Two Million Dollars (\$2,000,000) in the General Aggregate for all such claims, and including:
    - (a) Thirty (30) Day Cancellation Endorsement;
    - (b) Blanket Written Contractual Liability to the extent covered by the policy against liability assumed by Licensee under this Agreement;
    - (c) Insurance for liability arising out of blasting, collapse, and underground

- damage (deletion of X, C, U exclusions);
  - (d) General Aggregate Limit – Per Project Endorsement (CG2503);
  - (e) Products/Completed Operations coverage shall be extended for five (5) years beyond the completion of all work;
  - (f) No exclusion for use of watercraft;
  - (g) Include Additional Insured Endorsement GC 2010 or CG2037, or its equivalent; and
  - (h) Sudden & accidental pollution liability.
- iii. Commercial Automobile Liability Insurance covering the use of all owned, non-owned, and hired automobiles, with a bodily injury, including death, and property damage combined single minimum limit of One Million Dollars (\$1,000,000) each occurrence.
- iv. Umbrella/Excess Liability Insurance with minimum limits of Five Million Dollars (\$5,000,000) per occurrence; Five Million Dollars (\$5,000,000) aggregate, to apply to employer's liability, commercial general liability and automobile liability, including:
  - (a) Products/Completed Operations coverage shall be extended for five (5) years beyond the completion of all work.
  - (b) Must include "follow form" provisions including any required marine coverage.
  - (c) Total limits can be met by any combination of the underlying primary coverage with umbrella/excess policies.
- v. If any fixed wing, rotor, or any aircraft will be used by Licensee in performing the work allowed or required under this Agreement, Aircraft Public Liability Insurance covering such aircraft whether owned, non-owned, leased, hired or assigned with a combined single minimum limit for bodily injury and property damage of Five Million Dollars (\$5,000,000) including passenger liability coverage.
- vi. If any Unmanned Aircraft Systems (UAS) will be used by Licensee in performing the work allowed or required under this Agreement, Drone Liability Insurance covering such aircraft whether owned, non-owned, leased, hired or assigned with a \$1,000,000 per occurrence combined single limit for bodily injury, property damage and personal injury.
- vii. With respect to any work with includes professional services that fall within a professional liability exclusion from the Commercial General Liability Policy provided under Section 21.a.ii above, Professional Liability Insurance with the following characteristics:
  - (a) Claims made basis;

- (b) Shall remain in force continuously for three (3) years or an extended discovery period will be exercised for a period of three (3) years beginning from the time the work is completed;
  - (c) Include coverage for a pollution event resulting from the professional services; and
  - (d) If the work includes engineering or architectural services, the minimum limits shall be \$3,000,000 per claim and \$3,000,000 in the aggregate.
- b. The above policies to be provided by Licensee shall be written by insurance companies which have an A.M. Best Rating of not less than "A-, VIII". These policies shall not be materially changed or canceled except with thirty (30) days written notice to ODP from Licensee and the insurance carrier. Evidence of coverage, notification of cancellation or other changes shall be mailed to: Attention: Manager, Supply Chain, LG&E and KU Services Company, P.O. Box 32020, Louisville, Kentucky 40232.
- c. Except with regard to workers' compensation and professional liability, Licensee shall name ODP as additional insured on each of the above referenced policies. All policies will be primary/non-contributory in favor of ODP. Licensee shall waive any rights of subrogation against ODP and its insurance carriers.
- d. For any of the foregoing policies that are issued on a claims made basis, after termination of this Agreement, Licensee shall maintain such policies in place (and/or provide comparable tail coverage) for at least five years after all of Licensee's obligations under this Agreement have been fulfilled. The retroactive date must be prior to the commencement of any work done on behalf of ODP.
- e. ODP reserves the right to request and receive a summary of coverage of any of the above policies or endorsements; however, ODP shall not be obligated to review any of Licensee's certificates of insurance, insurance policies, or endorsements, or to advise Licensee of any deficiencies in such documents. Any receipt of such documents or their review by ODP shall not relieve Licensee from or be deemed a waiver of ODP's rights to insist on strict fulfillment of Licensee's obligations under this Agreement.
- f. Licensee shall provide Certificates of Insurance to Company for each policy of insurance required above and evidence the items noted hereafter: (1) Each Certificate shall properly identify the certificate holder as Company; (2) Under no circumstances shall Licensee begin any work (or allow any Subcontractor to begin any work) prior to submitting Certificate(s) (evidencing the required insurance of the Licensee or Subcontractor, as applicable) acceptable to Company. Company retains the right to waive this requirement at its sole discretion; (3) Certificate shall evidence thirty (30) days prior notice of cancellation; (4) Certificate shall verify additional insured status on all coverage including the endorsements required by this Section 21; (5) Certificate shall verify Blanket Waiver of subrogation - All policies of insurance shall include waivers of subrogation against Company. Except

where not applicable by law; (6) Certificate shall verify Primary/Non-contributory wording in favor of Company; and (7) Certificate shall identify policies which are written on a Claims Made coverage form and state the retroactive date.

- g. Licensee shall provide notice of any accidents or claims involving Licensee's Attachment or Licensee's work under this Agreement to ODP's Manager, Risk Management at LG&E and KU Services Company, P.O. Box 32030, Louisville, Kentucky 40232 and ODP's site authorized representative. Additionally, Licensee shall notify ODP of any threatened, pending or paid off claims to third parties, individually or in the aggregate, which from time to time may affect the coverage inuring to the benefit of ODP as hereinafter specified.
  - h. Each policy of insurance required to be maintained by Licensee under this Section 21 (except the Workers' Compensation and Employer's Liability Policy) shall cover all losses and claims of Licensee regardless of whether they arise directly or indirectly. Section 21 only represents minimum insurance requirements; it does not mitigate or reduce liability required by the indemnity provisions in this Agreement. Licensee is responsible for ensuring that its contractors' insurance meets the requirements of Section 21.
  - i. Licensee shall have insurance coverage in place at Licensee's expense prior to performing any work under this Agreement. ODP retains the right to refuse to allow the performance of such work in the absence of such coverage.
  - j. Policy limits shall not be deemed to be limit of Licensee's liability to ODP under this Agreement.
  - k. Self-Insured retentions are not acceptable without ODP's consent, except for the \$10,000 maintenance retention on Umbrella coverage.
22. Confidentiality and Publicity. Each Party acknowledges that, in the course of the performance of this Agreement, it may have access to privileged and proprietary information claimed to be unique, secret and confidential and which constitutes the exclusive property or trade secrets of the other Party. This information may be presented in documents marked with a restrictive notice or otherwise tangibly designated as proprietary, or disclosed during oral discussions, at which time representatives of the disclosing Party will specify that the information is proprietary. Unless jointly agreed to in writing, neither Party shall knowingly disclose to third parties any proprietary information received from the other Party in connection with this Agreement, nor shall they disclose the terms of this Agreement to any other person or entity (other than to their respective Affiliates, directors, officers, employees, agents and contractors who have a need to know the same) unless required in order to prosecute or defend any claim in an action involving any of the Parties hereto, or unless required by any court, governmental agency or regulatory body having competent jurisdiction. In the case of disclosure for such prosecution or defense or as required by any such judicial or quasi-judicial body, the non-

disclosing Party shall be given sufficient notice so as to allow it to seek a protective order with respect to such disclosure. The Parties shall each protect proprietary information received from the other with the same degree of care that they would take to protect their own proprietary information, and each Party shall be responsible for ensuring that its directors, officers, employees, agents and contractors who have access to the confidential or proprietary information of the other, maintain the confidentiality of such information in accordance with this Section 22. However, the Parties shall have no obligation to keep confidential any information that is in or becomes part of the public domain through no fault of their own. No Party shall issue news releases, publicity statements or advertising which references the other Party, this Agreement, or any provision hereof, without first obtaining the prior written approval of the other Party; provided, that the foregoing restriction shall not prevent the disclosure by a Party of any proprietary information to the extent (i) in the opinion of that Party's legal counsel, such disclosure is required by any law, regulation or rule of any securities exchange; or (ii) such disclosure is made to a person or other entity that is itself bound to maintain the confidentiality of the same pursuant to a written confidentiality agreement with the disclosing Party consistent with the provisions in this Section 22. Notwithstanding the foregoing, ODP may disclose the existence and terms of this Agreement to federal, state and municipal bodies having jurisdiction over the operations of ODP. Further, nothing herein shall prevent ODP from disclosing information to others as necessary to facilitate the orderly administration of this Agreement.

23. Binding Effect; Assignment. All provisions of this Agreement shall inure to the benefit of and be binding upon each of the Parties hereto upon the Effective Date and upon their successors and assigns. Licensee shall not assign this Agreement or any of its rights or obligations hereunder without the prior written consent of ODP, which consent shall not be unreasonably withheld, conditioned or delayed.

24. Performance Assurance.

a. Licensee shall furnish Performance Assurance in the following amounts to guarantee the payment of any sums which may become due for attachment charges, inspections, or work performed by the Company under this Agreement, including the removal of attachments upon termination of the Agreement by any of its provisions:

<u>Number of Attachments</u>	<u>Amount per Attachment</u>	<u>Maximum Total</u>
1-5,000	\$20/Attachment	\$100,000
5,001-10,000	\$10/Attachment	\$150,000
10,001+	\$5/Attachment	\$1,000,000

The above-stated amounts are incremental. By way of example, 7,500 Attachments would require Performance Assurance in the amount of \$125,000 (\$20 per Attachment for the first 5000 Attachments; \$10 per Attachment for the next 2,500 Attachments); 15,000 Attachments would require Performance Assurance in the amount of \$175,000 (\$20 per

Attachment for the first 5000 Attachments; \$10 per Attachment the next 5,000 Attachments; and \$5 per Attachment for the last 5,000 Attachments).

The amount of the Performance Assurance shall be calculated by the Company annually based on the Licensee's then-existing number of Attachments. Licensee shall provide the Performance Assurance within 30 days of its request by the Company.

In the event the Customer provides Performance Assurance in the form of a surety bond or Letter of Credit, each bond or Letter of Credit shall contain the provision that it shall not be terminated prior to six (6) months after Company's receipt of written notice of the desire of the bonding or insurance company, or bank, to terminate such bond or Letter of Credit. Company may waive this requirement if an acceptable replacement is received before the six (6) months has ended. Upon termination of such surety bond or Letter of Credit, Company shall request Licensee to immediately remove its Cables, Attachments and all other facilities from Company Structures. If Licensee should fail to complete the removal of all of its facilities from Company's Structures within thirty (30) days after receipt of such request, then Company may remove Licensee's facilities at Licensee's expense and without liability for any damage to Licensee's facilities.

Each surety bond shall be issued by an entity having a minimum A.M. Best rating of A- and each Letter of Credit shall be issued by an entity having a minimum Credit Rating of A- by S& P or A3 by Moody's at the time of issuance and at all times the relevant instrument is outstanding.

25. Notice. Any notice or request required by this Agreement shall be deemed properly given if sent overnight by nationally recognized overnight courier, sent by certified U.S. mail, return receipt requested, postage prepaid, or sent by telecopier, if number provided below, with confirmed receipt, to:

In the case of ODP:

Vice President, Electric Distribution  
KENTUCKY UTILITIES COMPANY  
d/b/a OLD DOMINION POWER COMPANY  
220 W. Main Street  
Louisville, KY 40202  
Phone: (502) 627-4743  
Fax: (502) 627-4165

With a copy to:

Office of the General Counsel  
And Corporate Secretary  
KENTUCKY UTILITIES COMPANY  
d/b/a OLD DOMINION POWER COMPANY  
220 W. Main Street



Louisville, KY 40202

In the case of Licensee:

Chief Executive Officer  
SCOTT TELECOM AND ELECTRONICS  
PO Box 489  
149 Woodland Street  
Gate City, VA 24251  
Phone: (276) 452-9119  
Fax: (276) 452-2448

With a copy to:

Whiteford Taylor Preston  
Attn: Vernon E. Inge, Jr.  
One James Center  
901 E. Cary Street, Suite 500, Richmond, VA 23219

The designation of the person(s) to be notified, and his, her or their address(es) may be changed by ODP or Licensee at any time, or from time to time, by similar notice.

26. Force Majeure. In the event Licensee or ODP is delayed in or prevented from performing any of its respective obligations under this Agreement due to acts of God, war, riots, civil insurrection, acts of the public enemy, strikes, lockouts, acts of civil or military authority, government shutdown, fires, floods, earthquakes, fiber, cable or other material failures, shortages or unavailability, delay in delivery not resulting from the responsible Party's failure to timely place orders therefor, lack or delay in transportation, or failure of a third party to grant or recognize a right beyond the reasonable control of the Party delayed or due to any other causes beyond the reasonable control of the Party delayed, then such delay or nonperformance shall be excused.
27. Accounting Standards. In computing or estimating expenses, costs, or other charges to be paid or reimbursed by Licensee under this Agreement, ODP shall use the accounting principles, practices, and records commonly employed in its business and as permitted or required by State Law.
28. Liens. To the extent permitted by law, in the event any construction lien or other encumbrance shall be placed on the Attachments by the actions of Licensee or its Contractor, Licensee shall promptly, in accordance with applicable laws, discharge such lien or encumbrance without cost or expense to ODP, and Licensee hereby agrees to indemnify ODP for any and all actual damages that may be suffered or incurred by ODP in discharging or releasing said lien or encumbrance.
29. Relationship of Parties and Independent Contractor Status. Neither ODP nor Licensee shall be deemed to be a partner, agent or joint venturer with or of the other by reason of this

Agreement or the consummation of the transactions contemplated herein. ODP and Licensee shall perform their duties under this Agreement as independent contractors, and at their own risk. Neither ODP nor Licensee shall at any time hold itself out as being a partner, co-venturer or agent of the other.

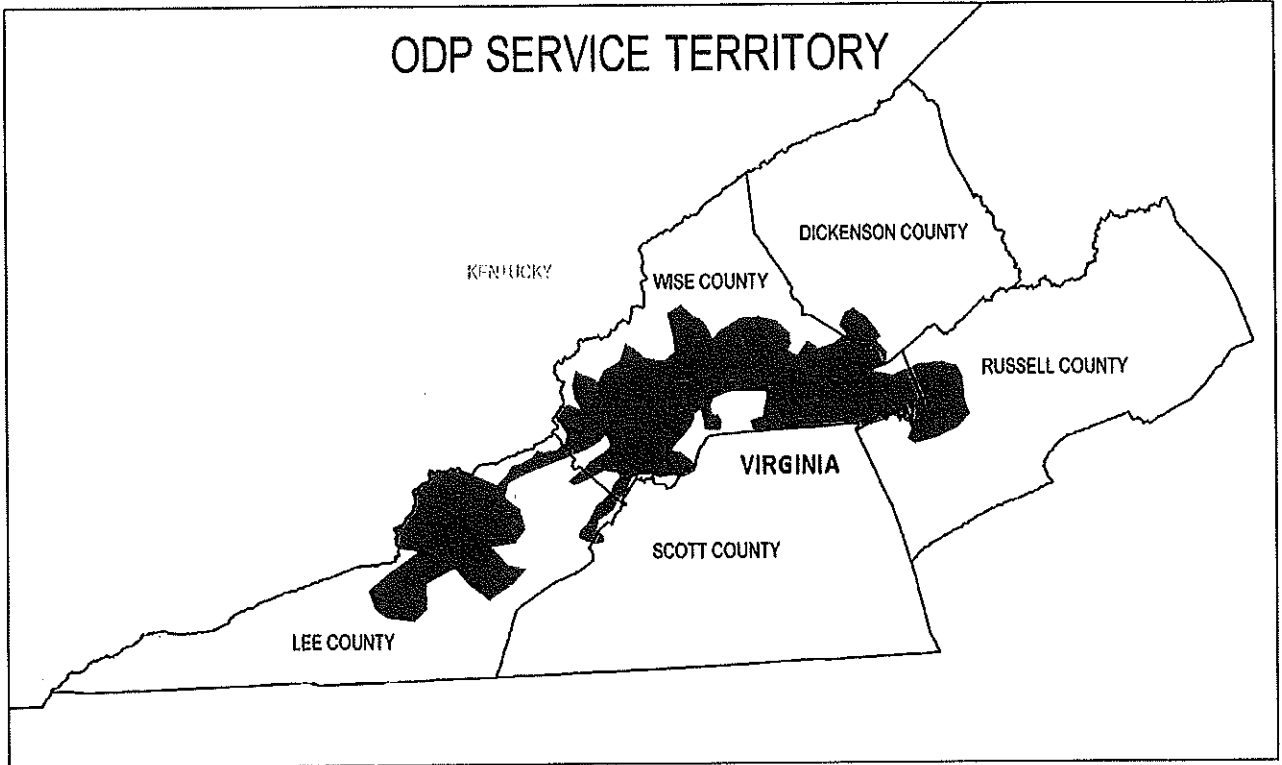
30. Execution. This Agreement may be executed in multiple counterparts, each being deemed an original and all together being deemed the same document.
31. Further Assurances. Each Party shall execute such assignments, endorsements and other instruments and give such further assurances and perform such acts as are or may become necessary and appropriate to effectuate and carry out the provisions of this Agreement.
32. Entire Agreement; Good Faith Negotiations. This Agreement constitutes the entire Agreement between ODP and Licensee regarding the Attachments, and all previous representations relative thereto, either written or oral, are hereby annulled and superseded, including but not limited to the license agreement between ODP and East Tennessee Management Company, dated February 19, 1990. No modification of this Agreement shall be binding on ODP or Licensee unless it shall be in writing and signed by both Parties. Nothing contained in this Agreement shall be construed as having any effect in any future agreement or contemplated future agreement between the Parties. The parties acknowledge that the terms and conditions set forth in this Agreement are fair, reasonable and just, and that they were agreed to voluntarily after extensive good faith negotiations at arm's length and contain concessions, valuable consideration, benefits and burdens for and from both parties.
33. Governing Law; Venue. The laws of the Commonwealth of Kentucky, without regard to the conflict of laws provisions thereof, shall apply to this Agreement and to its interpretation. All legal proceedings to enforce this Agreement shall be brought only in a state or federal court in Jefferson County, Kentucky.
34. Injunctive Relief. Each Party acknowledges that the other party may not be adequately compensated by money damages in the event of a breach of any covenant or agreement contained herein and that the other Party may be entitled to specific performance of such covenants and agreements, or other injunctive relief, in accordance with applicable laws, in addition to all other remedies.
35. Headings. Paragraph headings are for the convenience of the Parties only and are not to be construed as part of the terms of this Agreement.
36. Dispute Resolution. In the event any dispute arises between the Parties under this Agreement, the Party seeking resolution of the dispute must submit written notice to the other describing the dispute and such Party's desire to resolve the dispute in accordance with the provisions of this Section 36. If the Parties are then unable to resolve such dispute in the normal course of business within fifteen (15) days after delivery of the written notice as provided herein, each of the Parties shall promptly, but in no event later than twenty (20) days after delivery of such written notice, appoint a designated representative who has authority to settle the dispute. The designated representatives shall meet as often as they

reasonably deem necessary in order to discuss the dispute and negotiate in good faith in an effort to resolve such dispute. The specific format for such discussions will be left to the discretion of the designated representatives; however, all reasonable requests for relevant non-privileged information made by one Party to the other Party shall be honored. If the Parties are unable to resolve issues related to the dispute within forty-five (45) days after the Parties' appointment of the designated representatives, then either Party may pursue its rights and remedies under law or equity without further delay. Each Party shall bear its own costs and expenses in seeking resolution of any dispute under this Agreement pursuant to this Section 36.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed by their authorized officers as of the Effective Date.

KENTUCKY UTILITIES COMPANY d/b/a OLD DOMINION POWER COMPANY	SCOTT TELECOM AND ELECTRONICS
By: <u>Denise Simon</u>	By: <u>Roger Fraysier</u>
Name: <u>Denise Simon</u>	Name: <u>Roger Fraysier</u>
Title: <u>Director, Distribution Reliability, Analytics, and Administration</u>	Title: <u>Operations Manager</u>
Date: <u>12/19/2019</u>	Date: <u>December 10, 2019</u>

Schedule 1



Attachment 17

# 3

Pole Attachment Agreement  
SCTC  
&  
Appalachian Power Company

AGREEMENT

COVERING THE JOINT USE OF POLES

BETWEEN

APPALACHIAN POWER COMPANY

AND

SCOTT COUNTY TELEPHONE COOPERATIVE

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AGREEMENT  
COVERING THE JOINT USE OF POLES

THIS AGREEMENT, effective September 2, 1989, is made by and between APPALACHIAN POWER COMPANY, a corporation of the State of VIRGINIA (hereinafter called the "Electric Company") and the SCOTT COUNTY TELEPHONE COOPERATIVE, a corporation of the State of VIRGINIA (herein called the "Telephone Company").

WITNESSETH

WHEREAS, the Electric Company and the Telephone Company desire to promote the joint use of their respective poles when and where such joint use shall be mutually advantageous,

NOW, THEREFORE, in consideration of the promises and the mutual covenants herein contained, the parties hereto, for themselves, their successors and assigns, do hereby covenant and agree as follows:

ARTICLE 1

SCOPE OF AGREEMENT

1.01 This Agreement shall be in effect in such portions of the State of Virginia in which both parties to this Agreement now or hereafter operate and shall cover all poles of each of the parties now existing or hereafter erected or acquired in the above territory when said poles are brought hereunder in accordance with this Agreement.



1.02 Each party reserves the right to exclude from joint use:

- a. Poles which in Owner's judgment are necessary for its own sole use; or
- b. Poles which carry, or are intended by Owner to carry, circuits of such a character that in Owner's judgment the proper rendering of its service now or in the future makes joint use of such poles undesirable.

## ARTICLE 2

### EXPLANATION OF CERTAIN TERMS

For the purpose of this Agreement, certain terms shall have the meanings given in this article.

2.01 JOINT USE is the simultaneous use of any pole for the attachment of both parties.

2.02 NORMAL SPACE ALLOCATION on a joint pole is the following described basic space for the exclusive use of each party, respectively, with the associated mutual vertical clearance space for maintenance of separations, in accordance with the specifications referred to in Article 3.

- a. For the Electric Company, the uppermost seven (7) feet, measured from top of pole.
- b. For the Telephone Company, the lowest three (3) feet, measured upward from a point of attachment on the pole which will obtain basic clearances to

ground as required by the specifications referred to in Article 3 and permit practical horizontal grading of facilities.

- c. Mutual vertical clearance space on the pole between each company's attachments shall never be less than that which will obtain minimum separations as required by the specifications referred to in Article 3.

These specifications referred to in Article 3 do not preclude certain attachments of one party being located in and extending vertically through space reserved for the other party.

2.03 OWNER - The party owning the pole.

2.04 LICENSEE - The party having the right under this Agreement to make attachments to Owner's poles.

2.05 APPLICANT - The party making application to the Owner for permission to become a Licensee on Owner's poles.

2.06 SUBTRANSMISSION - Voltage below 138kV not otherwise designated as distribution.

2.07 COST IN PLACE - ADDITIONAL OR REPLACEMENT POLE - Cost In Place shall include the Total Cost to Owner for setting a bare pole. When replacing a pole and for additional poles, due solely to the Licensee's requirements, Cost In Place shall include the Total Cost to Owner for setting a pole including the cost of transferring facilities and removal of old pole with credit for any salvageable material.

2.08 TOTAL COST - Total Cost shall include all material, labor and overheads.

2.09 EMBEDDED POLE COST - The average original installed cost of a bare pole based on the original cost of all poles including all sizes and vintage years; in the case of the Electric Company, distribution poles plus any subtransmission and transmission poles actually occupied shall be included.

2.10 THIRD PARTY - Any additional licensees other than the Electric Company and Telephone Company.

2.11 BARE POLE - A pole exclusive of any type of attachments.

2.12 PROPOSALS - A standardized form used by the parties to communicate either their needs, requirements or intentions regarding attachments.

2.13 ATTACHMENT - Any device now or hereafter fastened to a joint use pole by the parties hereto.

2.14 ELECTRIC COMPANY - Includes APPALACHIAN POWER COMPANY and its subsidiary companies to the extent that such companies are not covered under separate agreements with SCOTT COUNTY TELEPHONE COOPERATIVE.

2.15 TELEPHONE COMPANY - Includes SCOTT COUNTY TELEPHONE COOPERATIVE and its subsidiary companies to the extent that such companies are not covered under separate agreements with APPALACHIAN POWER COMPANY.

2.16 FIELD SUPERVISOR - The Owner's representative responsible for scheduling construction work.

### ARTICLE 3

#### SPECIFICATIONS

3.01 Each party shall be responsible for maintaining its own facilities on joint use poles covered by this Agreement,

and each party shall maintain its facilities in conformity with good industry practice and with the terms and provisions of The National Electrical Safety Code, and the rules of THE STATE CORPORATION COMMISSION OF VIRGINIA and any other applicable binding orders, statutes, ordinances, rules and regulations of any other governmental body.

3.02 Each party has the right, but not the obligation to inspect facilities on joint use poles. If either party places or maintains its facilities not in conformance with Article 3.01, then the other party may give written notice to the nonconforming party to bring its facilities into compliance with this Agreement subject to the limitations contained in Article 3.04. The nonconforming party must bring its facilities into compliance within ninety (90) days of notification. If facilities are not brought into compliance within ninety (90) days of notification, the party giving notice shall have the right to rearrange the nonconforming party's attachments, including pole replacement, to result in such attachments conforming to the requirements of Article 3.01. The nonconforming party shall reimburse the other party for the Total Cost incurred by that party in rearranging any attachments, including expenses associated with pole replacement. Where pole replacement is required, the new pole shall be the property of the party performing the work unless the nonconforming party wishes to retain ownership by paying the Cost In Place of the new pole.

3.03 Wood poles shall comply with American Standards Association specifications and have a preservative treatment, full length, in accordance with good modern practice at the time of installation.

3.04 It is the intent of this Agreement, that poles having attachments prior to this Agreement, providing that their installation conformed to the specifications referred to in Article 3 herein at the time original attachment was made, will not be replaced or attachments rearranged solely to meet the requirements of 2.02 a., and 2.02 b., under NORMAL SPACE ALLOCATION or the current specifications referred to in Article 3.01.

The foregoing does not prohibit the replacement of a pole if Licensee compensates Owner in accordance with Article 8.01.

#### ARTICLE 4

##### ESTABLISHING JOINT USE OF EXISTING POLES

4.01 Whenever either party desires to reserve space on any pole owned by the other party, either as initial space or additional space on said pole, it shall submit a proposal therefore, specifying the location of the pole in question, the amount of space desired and the number and character of circuits to be placed thereon. Within ten (10) days after the receipt of such application, Owner shall notify the Applicant in writing whether or not said pole is among those excluded from joint use under the provisions of Article 1.02. If for any reason the Owner cannot respond in writing within ten (10) days, an oral request for an extension shall be made. Failure of response

within such ten (10) day period shall create a presumption that permission has been granted and Applicant may proceed accordingly. Upon receipt of Owner's notice that the said pole is not among those excluded from joint use and after the completion by Owner of any transferring or rearranging which in Owner's judgment is then required with respect to attachments on said poles, including any necessary pole replacements, the Applicant shall have the right as Licensee hereunder to use said space for attachments and circuits of the character specified in said notice in accordance with the terms of the notice and of this Agreement.

4.02 Whenever any jointly used pole or any existing pole about to be so used under the provisions of this Agreement is insufficient in height or strength for the existing attachments and for the proposed immediate additional attachments thereon, Owner shall replace such pole with a new pole of the necessary height and strength and shall make such other changes in the existing pole line in which such pole is included as the conditions may then require, and bill Licensee in accordance with Article 8.

Whenever Licensee requests any existing jointly used pole be replaced and Owner cannot complete replacement and/or rearrangements within the time required by Licensee, Licensee may replace the subject pole and shall be the Owner of the new pole, and shall be reimbursed by the Owner of the original pole for the cost of transferring its facilities to the new pole and removing said original pole.

4.03 Except as herein otherwise expressly provided, on jointly used poles each party shall at its own expense, place, maintain, transfer, rearrange and remove its own attachments, including any tree trimming or cutting incidental thereto, place guys to sustain unbalanced loads due to its attachments, and shall perform such work promptly and in such manner as not to interfere with the service of the other party.

#### ARTICLE 5

##### ESTABLISHING JOINT USE OF ADDITIONAL POLES

5.01 Whenever either party hereto requires new poles within the territory covered by this Agreement, either as an additional pole line, as an extension of an existing pole line, or in connection with the reconstruction of an existing pole line, and such pole facilities are not to be excluded from joint use under the provisions of Article 1, it shall promptly notify the other party by submitting a proposal (oral notice subsequently confirmed in writing may be given in cases of emergency) stating the location and size of the new poles and the character of circuits it proposes to use thereon. Within ten (10) days after the receipt of such notice, the other party shall reply in writing, stating whether it does, or does not, desire space on the said poles and, if it does, the character of the circuits it desires to use and the amount of space it wishes to reserve. Failure of response within ten (10) days shall create a presumption that no joint use is desired and the proposing party may proceed accordingly. Should the party to whom the proposal was made express interest in joint use after the ten (10) day

period referred to above, any and all additional expenses incurred by the party having given notice in order to then make joint use available, including, but not limited to, labor costs and other expenses associated with rearrangement of facilities, shall be borne by the party to whom notice was originally given. Failure of either party to provide ten (10) days written notice to the other party of its' intention to install pole line facilities as described above and by so doing installs pole line facilities not adequate in the judgment of the other party for the joint use needs of the other party, the party installing the pole line facilities shall, upon receiving written notice within ninety (90) days from the date the poles were set, replace the poles at no cost to the other party except for the extra height or strength (as specified in Article 8) for which the other party would have been billed if notified initially.

5.02 In any case where the parties hereto shall conclude arrangements for the joint use of any new pole to be erected, and the party proposing to construct the new pole facilities already owns more than its Ownership Objective of joint poles, (55% for the Electric Company and 45% for the Telephone Company) the parties shall take into consideration the desirability of having the new pole facilities owned by the party owning less than its Ownership Objective of joint poles so as to work toward such a division of ownership of the joint poles that both parties shall equitably share in the benefits of joint use.

5.03 Each party shall, at its own expense, place and maintain its own attachments on the new joint poles, including any tree



trimming or cutting incidental thereto, place guys to sustain unbalanced loads due to its attachments, and shall perform such work promptly and in such manner as not to interfere with the service of the other party.

#### ARTICLE 6

##### RIGHTS-OF-WAY FOR LICENSEE'S ATTACHMENTS

6.01 Owner shall not be required to secure any right, license or permit from any governmental body, authority or other person or persons which may be required for the construction or maintenance of attachments of Licensee, and Owner does not grant, guarantee nor convey any easements, rights-of-way or franchises for the construction and maintenance of said attachments, and if objection is made thereto and Licensee is unable to satisfactorily adjust the matter within a reasonable time, Owner may at any time, upon notice in writing to Licensee, require Licensee to remove its attachments from the poles involved, and Licensee shall, within sixty (60) days after receipt of said notice, remove its attachments from such poles at its sole expense.

#### ARTICLE 7

##### MAINTENANCE OF POLES AND ATTACHMENTS

7.01 Owner shall maintain its jointly used poles in a safe and serviceable condition in accordance with Owner's standards and in accordance with the specifications referred to in Article 3, and shall replace, reinforce or repair poles as they become defective.

7.02 When replacing a jointly used pole carrying terminals of aerial cable, underground connections, or other special equipment,

the new pole shall be set in a manner which will minimize the transfer cost of both parties. Should special conditions warrant setting the new pole in the old pole hole, written notice on the standard Proposal form shall be provided to the Owner prior to construction.

7.03 Whenever it is necessary to replace or relocate a jointly used pole, Owner shall, before making the change, give notice thereof in a proposal (except in cases of emergency, when oral notice may be given and subsequently confirmed in writing) to Licensee, specifying in such notice the time of such proposed replacement or relocation. Licensee shall transfer its attachments to the new or relocated pole at the time specified by Owner's Field Supervisor. If Licensee does not transfer its attachments, Licensee shall remove and dispose of the old pole unless Owner specifically instructs otherwise. If Licensee fails to transfer its attachments and remove the pole within ten (10) working days of receipt of Owner's notification of completion of work, Licensee shall reimburse Owner for all additional expenses incurred including costs associated with the transfer of Licensee's attachments and pole removal, because of Licensee's noncompliance.

7.04 Each party shall maintain all of its attachments on jointly used poles in accordance with the specifications referred to in Article 3 and shall keep them clear of trees, in safe condition and in thorough repair in accordance with each party's standards.

7.05 The Telephone Company, when operating either as Owner or Licensee, without any charge other than normal joint use rental, may install electrical bonding from communication cables or equipment to Electric Company's pole grounds on jointly used poles in accordance with Article 3.

7.06 The Licensee may replace Owner's pole during emergency conditions when Owner is not able to replace such pole in a timely manner. In this event, the Owner shall pay the Licensee's costs in accordance with Article 8.05.

#### ARTICLE 8

##### DIVISION OF COSTS

8.01 The Cost In Place of new poles jointly used under this Agreement, either in new pole lines, or in extensions of existing pole lines, or to replace existing poles, shall be borne by the parties as follows:

- a. The Cost In Place of a pole sufficient to provide the NORMAL SPACE ALLOCATION for Owner's requirements shall be borne by Owner except as provided in b., c., and d., herein.
- b. Licensee shall pay to Owner a sum equal to the difference between the Cost In Place of a new pole adequate to accommodate Licensee's attachments and the current Cost In Place of a pole considered by Owner to be adequate to accommodate the attachments of Owner and its other licensees under the following conditions:

- (1) Where the extra height or strength of an additional pole proposed for joint use is necessary solely to adequately accommodate the attachments of Licensee; or
- (2) Where the new pole is installed to replace an existing damaged or deteriorated jointly used pole hereunder and the extra height or strength of the new pole is provided to adequately accommodate the attachments of Licensee.
- c. Licensee shall pay Owner a sum equal to the Cost In Place of a new pole, where such new pole is erected hereunder to replace an existing pole solely to adequately provide for the attachments Licensee proposes to place on the new pole.
- d. In the case of a pole taller or stronger than a pole suitable for joint use, the extra height or strength of which is due to the requirements of public authorities (other than requirements with regard to keeping the wires of either party clear of trees), Licensee shall pay to Owner a sum equal to one-half the difference between the Cost In Place of such pole and the Cost In Place of a pole considered by Owner to be adequate to accommodate the attachments of Owner and its other licensees, unless the Owner is reimbursed by the public authority requesting replacement.

- e. The cost in excess height or strength provided for the attachments of third parties shall be billed to and reimbursed by the third party according to the agreement between the Owner and the third party.
- f. Any such new pole shall be the property of Owner regardless of any payments by Licensee toward the cost of such new pole and Licensee shall acquire no right, title or interest in and to such pole.
- g. Each party shall place, maintain, rearrange, transfer and remove its own attachments at its own expense, except as otherwise expressly provided elsewhere in this Agreement.

8.02 Placement and Replacement of Fifty (50) foot and Higher Poles. The Electric Company shall own all new poles having a length of fifty (50) feet or more. Proposals by third parties for the replacement of existing poles with fifty (50) foot or higher poles are to be submitted to the Owner in all cases and where Owner is the Telephone Company, it will then propose the Electric Company install a fifty (50) foot or higher pole. Costs incurred as a result of such a request from a third party shall be billed to and reimbursed by the third party according to the agreement between the parties involved.

8.03 Cost of Pole Replacement and Transfer of Attachments. Except as otherwise herein expressly provided, in situations requiring either (a) the replacement of a joint use pole in kind, i.e., the same height and class, or (b) where replacement pole must be taller or stronger due to Owner's requirements, the costs

of replacement of the pole shall be borne by the Owner, and the costs of transferring shall be borne by each party for its own facilities. Failure of Licensee to transfer its facilities thereby requiring Owner to perform Licensee's work shall be billed to Licensee at Total Cost.

8.04 Assistance Required. If Owner cannot install a new pole or replace a pole for joint use, as required in Article 4.02 without the assistance of the Licensee, then Owner shall reimburse Licensee the Total Cost incurred in rendering the required assistance.

8.05 Emergency Conditions. Where Licensee must replace Owner's pole under emergency conditions, Owner shall pay Licensee for all costs incurred in placing the pole and, if the Licensee removes the old pole, the cost of removing the old pole. Title to the pole will remain with the Owner. Licensee will transfer its own facilities at no cost to the owner.

8.06 Cost of Rearrangements on Existing Poles. Whenever joint use is requested by the Licensee on an existing pole, and space can be provided by rearrangement of the Owner's attachments, the Total Cost of such rearrangements shall be borne by the Licensee.

8.07 Sharing of Space. Each party shall, upon request of the other party, share with such other party any assigned or reserved space not presently being used, so long as the requirements of Article 3 are satisfied. Upon written notice from the sharing party that any such shared space is required for such party's

operations, the other party shall within sixty (60) days relocate or rearrange its facilities at its expense. If replacement of any poles is necessary, the cost thereof shall be allocated as otherwise provided in this Article 8.

8.08 Anchors. All anchors and guys with the exception of jointly used anchors as provided in Article 8.09 below, shall be placed by and at the expense of the party whose attachments make such work necessary. Such anchors and guys shall remain the sole property of the party placing them and shall not be considered a part of the supporting structure.

8.09 Jointly Used Anchors. Normally each company will place separate anchors; however, when it is advantageous to both companies, an anchor rod suitable for joint attachment shall be placed by the Owner of the pole with the Total Cost of the anchor and anchor rod to be shared equally by the parties. If one anchor is inadequate for the combined requirements of both parties, then the Licensee shall place the additional anchorage required.

#### ARTICLE 9

##### PROCEDURE WHEN CHARACTER OF CIRCUITS IS CHANGED

9.01 When either party desires to change the character of its circuits on jointly used poles, such party shall give ninety (90) days' written notice to the other party of such contemplated change.

The parties shall then cooperate in determining, (1) the conditions under which joint use may be continued on a mutually satisfactory basis, or (2) if in the judgment of both parties

continued joint use is not feasible, the most practical and economical method of providing for separate lines.

In the latter event, the party whose circuits are to be removed from the jointly used poles shall promptly carry out the necessary work.

The cost of establishing such circuits in the new location shall be borne by each party under the provisions of this paragraph. In the event one party owns all the poles, the Licensee shall relocate its facilities at no expense to the Owner. If the parties agree that it is more practical for the Licensee to remain on the existing centerline and Owner's facilities should be relocated, Licensee shall reimburse Owner for the cost of relocation based upon the reestablishment of similar facilities. In the event neither party is the Owner of all the poles involved, the cost of reestablishing equivalent facilities in a new location shall be divided between the parties in proportion to the percent ownership of the existing poles. Where the ownership is divided the party owning a majority of the poles shall have the right to remain on an existing centerline unless it is mutually agreed otherwise. The cost of relocation shall be divided according to ownership with the party who retains the centerline paying a portion of the relocating party's cost equal to the percent of poles involved which are owned by the relocating party. For example, if one party owns 60% of the poles and the second party owns 40%, the second party would relocate and receive payment equal to 40% of its cost from the first party. Where the



ownership of the poles involved is equal, the parties shall decide which facilities are more practical to relocate and the relocating party will be reimbursed 50% of its relocation costs. If the party owning less than 50% of the poles prefers to remain on the existing centerline and the other party is agreeable, the entire cost of the relocating party's expense shall be paid by the party retaining its facilities on the existing centerline.

9.02 Attachments may be permitted on subtransmission and transmission poles of the Electric Company with the understanding that should the characteristics of the Electric Company facilities (circuits) change resulting in either the Electric Company or the Telephone Company deciding joint use is no longer feasible, the Telephone Company shall remove its facilities with no cost or obligation to the Electric Company.

#### ARTICLE 10

##### TERMINATION OF JOINT USE

10.01 If Owner desires at any time to abandon any jointly used pole, it shall give Licensee notice in writing to that effect at least sixty (60) days prior to the date on which it intends to remove its attachments from such pole. If, at the expiration of said period, Owner shall have no attachments on such pole but Licensee shall not have removed all of its attachments therefrom, such pole shall thereupon become the property of Licensee, and Owner shall transfer title to said pole and Licensee shall accept title to said pole in the manner provided for under Article 11. Licensee shall indemnify, protect and hold harmless the Owner from

all obligations, liabilities, damages, costs, expenses, or charges incurred after the expiration of the above mentioned sixty (60) day period, and not arising out of anything theretofore occurring, because of, or arising out of, the presence or condition of such pole or of any attachment thereon; and shall pay Owner a sum equal to the Seller's Embedded Pole Cost based on height and type of such abandoned pole. In the event the Telephone Company is the Seller and its' Embedded Pole Cost is not readily available, it has the option of using the Electric Company's Embedded Pole Cost to determine its' selling price.

10.02 Licensee may at any time abandon the use of a jointly used pole by giving due notice thereof in writing to Owner and by removing therefrom any and all attachments it may have thereon.

#### ARTICLE 11

##### TRANSFERS OF TITLE

11.01 Anytime it is determined that either party owns more or less than its objective percentage of jointly used poles as stated in Section 5.02, both parties shall have the right to request permission from the other party to either sell or purchase poles so as to progress towards achieving the objective percentage of ownership. If both parties are agreeable to the proposed sale, the number and location of the poles to be sold shall be determined by mutual agreement.

11.02 Each party shall obtain, at its expense, the approval of any governmental agency having jurisdiction over such party's

part of the transaction. When ownership of poles is to be transferred, a mutually approved Proposal in accordance with the Owner's standard selling policy shall be prepared to cover such transfer. Payments for such poles by the Licensee will be made at the time of purchase. The price of such poles shall be the Seller's Embedded Pole Cost at the time of sale for the height and type of poles involved. In the event the Telephone Company is the Seller and its' Embedded Pole Cost is not readily available, it has the option of using the Electric Company's Embedded Pole Cost to determine its' selling price.

11.03 A formal Bill of Sale will be required for the transfer of ownership of all poles. The transferring party shall also obtain any necessary mortgage releases if the poles to be transferred are subject to any mortgages, and shall submit such releases to the other party.

## ARTICLE 12

### RENTALS

12.01 For purposes of this Agreement, a Rental Year shall be the period between successive anniversary dates of this agreement. Any space occupied or reserved by Licensee during any portion of any such Rental Year shall be deemed to have been so occupied or reserved during the entire year. The amount of rent shall be computed, billed, and paid in accordance with the following sections of this Article 12.

12.02 Licensee shall pay rent annually to Owner for those poles on which space is occupied or reserved by Licensee and for which rent is payable, in an amount per pole as follows:

<u>Rental Rate</u>	<u>Rental Year</u>	<u>Year Rent to be Paid</u>
\$2.40	1989	1990
\$3.80	1990	1991
\$5.20	1991	1992
\$6.60	1992	1993
\$8.00	1993	1994

12.03 Each party shall submit to the other, on or before each September 15, a determination of the number of poles subject to this Agreement on which space was occupied or reserved by such other party as of the preceding anniversary date of this agreement. Each such determination shall be deemed correct unless written exception is taken within thirty (30) days of receipt. If any such exception cannot be otherwise resolved, a joint inspection of the poles in dispute and records pertaining thereto shall be made. If the parties are not able to resolve any such exception by the next billing date, the number originally proposed shall be used until such resolution is accomplished, at which time a retroactive adjustment shall be made if necessary.

12.04 The Bills for the annual rental shall be rendered each year on or about October 2 and shall contain the total rental due for the current Rental Year based on a formal recapitulation of the poles actually occupied or reserved during such Rental Year. All bills shall be paid within thirty (30) days of receipt.

12.05 In order to make the transition between this Agreement, and any prior agreement, rentals for the period September 2, 1988

to September 2, 1989 shall be based on the number of poles, and the annual rental rate specified in the Joint Use Agreement superseded by this Agreement.

#### ARTICLE 13

##### UNAUTHORIZED USE: JOINT FIELD CHECKS

13.01 If unauthorized occupancy of poles is found, a Proposal shall be prepared to establish a record of this occupancy on the next annual billing. The party responsible for unauthorized occupancy shall owe the Owner the rental for the entire period dating back to the last joint field check including interest compounded annually. The annual rate of interest shall be equal to the Rate of Return for Short Term Debts of the party owning more than its objective ownership of poles. If no Short Term Debt is available for any portion of the billing period, the Rate of Return for Long Term Debt shall be used for such periods.

If the only attachment on a pole is unused hardware it shall not be considered a rental attachment; however, provisions will be made to have such hardware promptly removed. If not removed within thirty (30) days after formal notification, the current annual rental will apply.

13.02 The parties shall participate in a joint field check no less often than every five (5) years. Should one party elect not to participate, that party shall pay one-half (1/2) the cost of the field check performed by the other party. The non-participating party has sixty (60) days in which to verify the findings after which the results of the inventory will become final.

## ARTICLE 14

### LIABILITY AND DAMAGES

14.01 Whenever any liability is incurred by either or both of the parties hereto for damages for injury to persons (including death) or damage to property, arising out of the joint use of poles under this Agreement, which joint use is understood to include the wires and fixtures of the parties hereto, attached to the jointly used poles covered by this Agreement, the liability for such damages, as between the parties hereto, shall be as follows:

- a. Each party shall be liable for all damages for such injuries to persons or property caused solely by its negligence or solely by its failure to comply at any time with the specifications referred to in Article 3, and will indemnify, protect and hold harmless the other party in any such instance.
- b. Each party shall be liable for one-half (1/2) of all damages for such injuries to persons and for one-half (1/2) of all damages for such injuries to property that are caused by the concurrent negligence of both parties hereto or that are due to causes which cannot be traced to the sole negligence of either party.
- c. All claims for damages arising hereunder that are asserted against or affect both parties hereto shall be dealt with by the parties hereto jointly; provided, however, that in any case under the

provisions of paragraph b., of this Article and where the claimant desires to settle such claim upon terms acceptable to one of the parties hereto but not to the other, the party to which said terms are acceptable may, at its election, pay to the other party one-half (1/2) of the amount which such settlement would involve, and thereupon said other party shall be bound to protect the party making such payment from all further liability and expense on account of such claim.

- d. In the adjustment between the parties hereto of any claim for damages arising hereunder, the liability assumed hereunder by the parties shall include, in addition to the amounts paid to the claimant, all expenses incurred by the parties in connection therewith, which shall include costs, attorneys' fees, disbursements and other proper charges and expenditures.
- e. It is further understood and agreed between the parties hereto that at all times during the term of this Agreement and particularly during the time of any construction, repair or new attachments to poles covered by this Agreement that the parties shall consider the electric wires of the Electric Company to be energized.
- f. It is further agreed between the parties hereto, that to the extent any of the provisions of this

Article 14 should be determined to be contrary to law or held to be invalid by any court of competent jurisdiction, this Article shall be construed and applied as if such invalid provisions were not contained herein, attempting at all times to conform, to the extent possible, to the intent of the parties as herein stated.

#### ARTICLE 15

##### DEFAULTS

15.01 If either party shall default in any of its obligations under this Agreement and such default continues thirty (30) days after notice thereof in writing by the other party, the party not in default may suspend the rights of the party in default insofar as concerns the granting of further joint use. If such default shall continue for a period of sixty (60) days after such suspension, the party not in default may forthwith terminate this Agreement as far as it concerns the further granting of joint use, and shall be under no further obligation to permit additions to or changes in attachments of the defaulting party upon poles in joint use on the date of such termination.

15.02 If either party shall default in the performance of any work which it is obligated to do under this Agreement at its expense, the other party may elect to do such work, and the party in default shall reimburse the other party for the cost thereof. Failure on the part of the defaulting party to make such payment



within thirty (30) days after presentation of bills therefor shall, at the election of the other party, constitute a default under Section 15.01 of this Article.

## ARTICLE 16

### ATTACHMENTS OF OTHER PARTIES

16.01 Nothing herein contained shall be construed as prohibiting the granting by Owner to others, not parties to this agreement, by contract or otherwise, rights or privileges to use any poles covered by this Agreement. The attachments of any such outside party shall be treated as attachments belonging to the Owner, who shall have the entire right to any payments from such party.

16.02 Attachments of other parties shall at all times be in conformity with Article 3.

16.03 If space is shared by the Owner or Licensee with a third party in order to minimize such third party's costs, the sharing party retains its right to use the shared portion of its space. If Owner or Licensee thereafter requires the full use of its space, it is the duty of the Owner to provide that all costs of making that space available shall be borne by the third party.

16.04 If there is insufficient space on a joint use pole to accommodate a third party's attachments, the third party shall be required to reimburse Owner and Licensee for all costs incurred by them in making such space available.

ARTICLE 17

WAIVER OF TERMS OR CONDITIONS

17.01 The failure of either party to enforce or insist upon compliance with any of the terms or conditions of this Agreement shall not constitute a general waiver or relinquishment of any such terms or conditions, and the same shall be and remain at all times in full force and effect.

ARTICLE 18

PAYMENT OF TAXES

18.01 Each party shall pay all taxes and assessments levied on its own property upon said jointly used poles, and the taxes and the assessments which are levied on said jointly used poles shall be paid by the Owner.

ARTICLE 19

BILLS AND PAYMENT FOR WORK

19.01 Upon the completion of work performed hereunder by either party, the expense of which is to be borne wholly or in part by the other party, the party performing the work shall present to the other party within sixty (60) days after the completion of such work a statement of the costs in accordance with the provisions of this Agreement and such other party shall within thirty (30) days after such statement is presented, pay to the party doing the work such other party's portion of the cost of said work.

ARTICLE 20

EXISTING AGREEMENTS

20.01 All existing Agreements, written or oral, between the parties hereto for the joint use of poles within the territory covered by this Agreement are by mutual consent hereby terminated, and poles covered by such agreements are brought under this Agreement as of the effective date hereof, but such termination shall not extinguish any obligation arising prior to the effective date of this Agreement.

ARTICLE 21

TERM OF AGREEMENT

21.01 Subject to the provisions of Article 15, Defaults, herein, this Agreement may be terminated by either party after the second day of September, 1994 upon one (1) year's notice in writing to the other party. If not so terminated, it shall continue in force until terminated by either party at any time upon one (1) year's notice in writing to the other party as aforesaid. Despite any termination under this Article, this Agreement shall remain in full force and effect with respect to all poles jointly used by the parties at the time of such termination until a new Agreement is entered into by the parties. Following such termination until a new Agreement is entered into between the parties, neither party shall be under an obligation to permit additions to or changes in attachments of the other on poles in joint use on the date of such termination.

## ARTICLE 22

### OPERATING ROUTINE

22.01 An Operating Routine may be jointly prepared by the parties hereto, and shall be approved respectively by the Manager of the Telephone Company and by the T & D Manager for the Electric Company. This routine shall be based on this Joint Use Agreement and shall give the detailed methods and procedures which will be followed in establishing, maintaining and discontinuing the joint use of poles. In case of any ambiguity or conflict between the provisions of this Agreement, and those of the "Operating Routine" the provisions of this Agreement shall be controlling. This Operating Routine may be changed at any time upon the approval of the Manager of the Telephone Company and the T & D Manager of the Electric Company, provided such changes do not conflict with the terms of this Joint Use Agreement.

## ARTICLE 23

### MISCELLANEOUS

23.01 Force Majeure. Neither party shall be considered in default in the performance of its obligations herein, or any of them, to the extent that performance is delayed or prevented due to causes beyond the control of said party, including but not limited to, Acts of God or the public enemy, war, revolution, terrorism, civil commotion, blockade or embargo, acts of government, any law, order, proclamation, regulation, ordinance, demand, or requirement of any government, fires, explosions,

cyclones, floods, unavoidable casualties, quarantine, restrictions, strikes, labor disputes, lockouts and other causes beyond the reasonable control of either of the parties.

23.02 Modifications of Agreement. No amendments or modifications to this Agreement and no waiver of any of its provisions or conditions shall be valid unless in writing and signed by duly authorized representatives of the parties.

23.03 Invalidity. If any provision of this Agreement shall for any reason be held to be invalid, illegal or unenforceable under any laws, rules or regulations of any governmental body or agency having jurisdiction thereof, any such invalidity, illegality or unenforceability shall not effect any other provision of this Agreement, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been incorporated herein.

23.04 Execution. This Agreement may be executed in two counterparts each of which so executed shall be deemed to be an original.

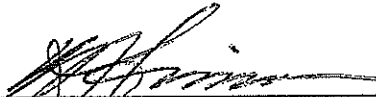
23.05 Headings. Headings used in this Agreement are inserted only for the convenience of the parties and shall not affect the interpretation or construction of this Agreement.

23.06 Applicable Law. This contract shall be governed by and interpreted under laws of the State of Virginia.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the day and year first above written.

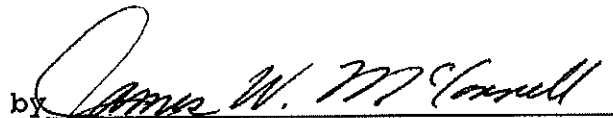
APPALACHIAN POWER COMPANY

Attest:

Shirley F. Bowers by   
C. A. Simmons, Vice President

SCOTT COUNTY TELEPHONE COOPERATIVE

Attest:

Lyla B. McCarty by   
J. W. McConnell, Manager



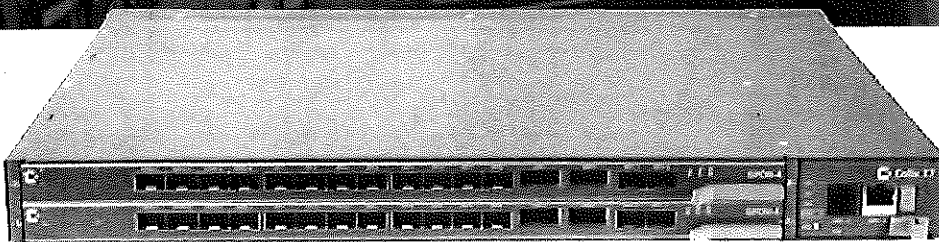
# Calix E7-2 Ethernet Service Access Platform

## DESCRIPTION

What could unparalleled flexibility and network convergence mean to you?

The E7 is a highly extensible, standards-based Ethernet service access platform that offers service providers a modular chassis-based option to address the emerging bandwidth challenges of today's world. As next-generation Ethernet services gain momentum in the marketplace and begin to extend out from the metropolitan area networks, they will drive demand for versatile, cost-effective aggregation out at the network edge.

By adding the AXOS platform, the E7-2 is now even more of a disruptive and compelling enabler to next generation networks that connect the world. The Calix AXOS E7-2 Intelligent Modular System is a breakthrough evolutionary system that provides a transformational path to next generation networks, fiber technologies, and Software Defined Access. The E7-2 is the industry's benchmark for a modular, small form factor, environmentally hardened access solution for service providers. The AXOS E7-2 leads a rapidly expanding family of AXOES E-Series systems capable of supporting both centralized and decentralized network architectures that range from the data center edge, central office, or headend, to the remote cabinet, or MDU.



## **FUNCTIONAL DESCRIPTION**

### **ETHERNET SERVICE**

#### **ACCESS PLATFORM:**

Residential and business services are converging as more subscribers work from home offices and internet "over the top" video services consume an increasing percentage of both enterprise and service provider network capacity. IP and Ethernet are the dominant network and transport protocols, and all services – voice, data, and video – are rapidly migrating to a packet-based architecture. High performance applications demand high performance solutions; the Calix E7-2 Ethernet Service Access Platform meets the demanding requirements of Ethernet services access networks.

The Calix E7 delivers a wide array of high performance applications, including 10GE Ethernet transport, delivery of high density residential triple play services over copper pairs (VDSL2/ADSL2+), GPON and point-to-point Ethernet, Metro Ethernet Forum (MEF) compliant business services, mobile backhaul, and protected GE aggregation of Calix E7, C7, B6 and E5 platforms.

### **HIGH DENSITY SUBSCRIBER ACCESS**

With two cards per system, the E7-2 provides flexible, high density subscriber access options in a 1RU shelf:

- 96 VDSL2/ADSL2+ & POTS Combo (48 Overlay)
- 16 GPON and 8 GE ports (1024 ONTs)
- 48 point-to-point GE ports (48 ONTs)
- 8 XGS-PON/NG-PON2 ports

With Multi-dwelling unit (MDU) ONTs, the subscribers per 1RU system can exceed several thousand.

### **MODULAR CHASSIS ARCHITECTURE**

The Calix E7-2 modular chassis enables a pay-as-you-grow architecture, combining the most advantageous attributes of a small form factor product with a large chassis-based system.

- 1RU design can expand from a single slot, for very low first install cost, to multiple chassis, to add subscriber growth yielding a near linear cost curve
- Twenty line cards are managed as a single chassis for operational efficiency
- Mix and match line cards in a common chassis – no common control equipment required
- Line cards can be added or replaced without uninstalling/installing power, alarms, or cables – reducing MTR from hours to minutes
- Subscribers are easily aggregated and network resources efficiently shared across protected trunk facilities
- Hardened 1RU system delivers GPON and Ethernet with 10GE transport from CO, cabinet or pole mount
- Resilient, hot-swappable line cards and fan tray

With the E7-2, service providers no longer need to decide between a single service product and a high growth chassis solution. E7-2 provides low first install cost, operational efficiency and near linear incremental cost per subscriber, enabling Calix customers to maximize their business return.

### **FULL SPECTRUM OF SERVICES**

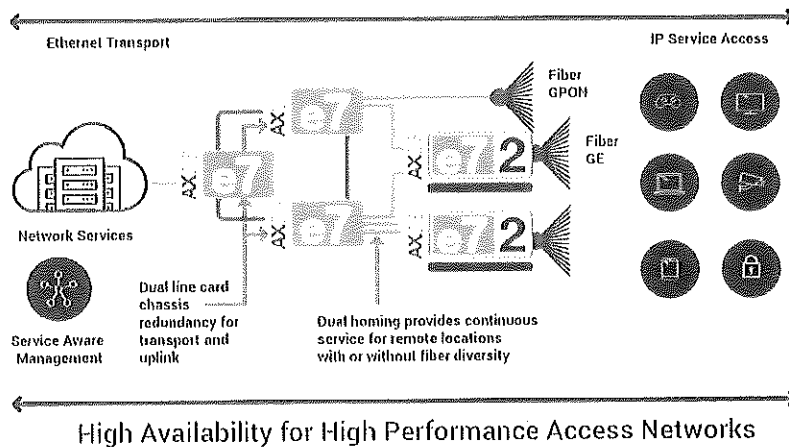
The E7 delivers a full spectrum of access services over GPON and Point-to-Point Ethernet using the family of Calix ONTs, including Single Family Unit (SFU), Small Business Unit (SBU), Multi-Dwelling Unit (MDU), and rack-mount models.

- IPTV – broadcast and Video on Demand (VoD)
- MEF compliant business services
- High-Speed Internet (HSI) access
- Voice – Native SIP/VoIP and TDM Gateway support
- T1 services
- CATV video: RF video overlay with RF return

Calix ONTs support auto sensing GPON and GE network interfaces, allowing service providers to manage service changes without subscriber onsite technical support.



## NETWORK CONVERGENCE



### DELIVERING "QUALITY OF EXPERIENCE"

The E7 provides per-subscriber and per-service hierarchical QoS to deliver uncompromised triple play and business services. A powerful collection of classification, policing, queuing and scheduling algorithms let operators manage per-subscriber and per-service traffic flows to maintain priority/delay/loss service differentiation within the E7 network.

### SCALABLE IPTV SUPPORT

IPTV services are by far the most demanding in terms of quality, and user expectations are very high. The E7 supports industry standard IGMP snooping to identify and replicate multicast video sent between the set-top box and the video distribution network, providing efficient, scalable, high-quality IPTV distribution on both GPON and Ethernet interfaces.

### INTEGRATED HIGH-CAPACITY AGGREGATION

The E7 is built on a core Layer 2 and Layer 3 switch capable of full-duplex, line rate forwarding at all frame sizes and traffic types across all interfaces. This capacity makes the E7 ideal for aggregation and transport of IP/Ethernet services across the access network. The E7 platform supports industry standard pluggable modules for all service and network interfaces, including ITU G.984 compliant GPON, Small Form-Factor Pluggable (SFP) Gigabit Ethernet, XFP 10GE ports, and SFP+ 10GE ports.

### NETWORK RESILIENCY

The Calix E7 supports a flexible set of standards-based network topology protocols for use in aggregation, ring-based transport, and uplink applications.

- ITU G.8032 Ethernet Ring Protection Switching (ERPS)
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.3ad/802.1AX Link Aggregation

### SERVICE AWARE MANAGEMENT

The E7, along with the Calix Management System (CMS), allows operators to manage services while understanding their relationship to the network infrastructure. Service-oriented management includes rapid service provisioning, service templates and policies, and service assurance. Comprehensive network management tools let operators create physical and logical topology maps, engineer traffic flows, and manage network commissioning and software upgrades. Network inventory, alarm surveillance and PM collection are enabled by the E7 system. The E7 provides locally hosted Web GUI, CLI, and SNMP interfaces

#### BACKPLANE BANDWIDTH

100 Gbps between slots

#### SLOTS

2 universal line card slots

1 Fan Tray slot

#### DIMENSIONS (W x H x D)

17.5 x 1.7 x 11.45 inches

44.5 x 4.3 x 29.1 cm

Height is 1 RU

#### WEIGHT

5.9 lb (2.7 kg) E7 shelf

7.4 lb (3.4 kg) shelf with Fan Tray

#### OPERATING ENVIRONMENT

Temperature: -40 to +65° C

(-40° F to +149° F)

Humidity: 10 to 95%

(non-condensing)

Operating altitude: 10,000 ft

(3,049 m)

#### STORAGE ENVIRONMENT

Temperature: -40 to +85° C

(-40° F to +185° F)

Humidity: 5 to 95%

#### MANAGEMENT SUPPORT

Calix CMS network management

Calix CLI and Web GUI for local

management interface

SNMP v2c and v3 performance

and fault monitoring

#### MANAGEMENT INTERFACES

Ethernet 10/100 (RJ-45

connector on Calix E7-2 Fan

Tray)

Ethernet 10/100 (RJ-45

connector on back of Calix E7-2)

RS-232 (RJ-11 connector on

Calix E7-2 Fan Tray)

#### SYNCHRONIZATION

Synchronization is enabled by

the E7-2 line cards as

required

External reference timing

Built-in Stratum-3 clock

Hardware-ready to support

Synchronous Ethernet

#### ALARM I/O INTERFACES

Wire wrap pin access on E7 back

User definable alarm inputs:

7; outputs: 1

#### FIBER INTERFACES

All optical ports use pluggable

optics (SFP, XFP, SFP+)

LC or SC connectors on modules

#### ANALOG/METALLIC

##### INTERFACES

Two standard 25-pair RJ-21

connectors per slot

#### TIMING I/O INTERFACES

Access through wire wrap pins

on the back of the Calix E7

BITS clock (sink and source)

STANDARDS COMPLIANCE

NEBS Level 3 compliance

(GR-63-CORE, GR-1089-

CORE, GR-3028)

UL 60950

FCC Part 15 Class A

#### POWER FEEDS

Integrated power management

on Calix E7-2 line cards

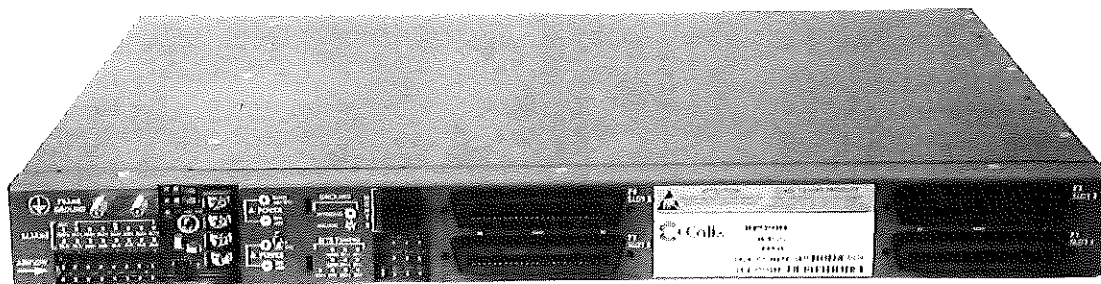
Redundant -48/60 VDC battery

feeds (A and B)

Input Range: -42.5VDC to

-72VDC

Fuse: 7.5 Amps (A and B)



### FAN TRAY ASSEMBLY (100-01451)

#### FANS

4 fans housed in fan tray  
Resilient design maintains  
system cooling with one fan  
failure

#### MANAGEMENT INTERFACES

Ethernet 10/100 (RJ-45  
connector)  
RS-232 (RJ-11 connector)

#### SYSTEM INFORMATION

7-segment LCD display  
System Controller (MGT) –  
GREEN

#### SHELF ALARM INDICATOR

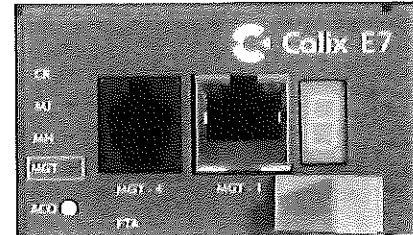
Critical (CR) - RED  
Major (MJ) - RED  
Minor (MN) - AMBER  
Alarm Cut-Off (ACO) button

#### POWER SPECIFICATIONS

Min Input Power:  
22 Watts @ -48V  
Max Input Power:  
65 Watts @ -48V

#### MAINTENANCE

Field-replaceable air filter (not  
used in RT locations)  
Hot-swappable fan tray  
assembly



### FAN TRAY ASSEMBLY-2 (100-03590)

#### FANS

4 fans housed in fan tray  
Resilient design maintains  
system cooling with one fan  
failure

Variable speed operation  
depending on operating  
temperature\*

#### MANAGEMENT INTERFACES

Ethernet 10/100 (RJ-45  
connector)  
RS-232 (RJ-11 connector)

#### SYSTEM INFORMATION

7-segment LCD display  
System Controller (MGT) –  
GREEN

#### SHELF ALARM INDICATOR

Critical (CR) - RED  
Major (MJ) - RED  
Minor (MN) - AMBER  
Alarm Cut-Off (ACO) button

#### POWER SPECIFICATIONS

Min Input Power:  
8.5 Watts @ -48V  
Max Input Power:  
48 Watts @ -48V

#### MAINTENANCE

Field-replaceable air filter  
(not used in RT locations)  
Hot-swappable fan tray  
assembly





## NOTES

For GPON OIM, 10GE XFP, 10GE SFP+ pluggable transceivers, Direct Attach cables, and all transceivers used in CSFP Option 2 sockets, only products purchased directly from Calix are supported. The use of GPON OIM, Active Ethernet CSFPs, 10GE XFP, 10GE SFP+ pluggable transceivers and Direct Attach cables not purchased directly from Calix is not supported and will void all product warranties covering the Calix equipment to which such third-party materials are connected.

- SFP modules may also be used in CSFP Option 2 sockets, and in SFP+ sockets at 1GE rate.
- Copper Direct Attach cables can operate in SFP, CSFP Option 2, and SFP+ sockets at 1GE, 2.5GE, and 10GE data rates as supported by the card type.

## CALIX E7-2 ETHERNET SERVICE ACCESS PLATFORM

000-00372..... E7-2 Chassis with Fan Tray Assembly and Installation Kit

100-01451..... E7-2 Fan Tray Assembly

000-00228..... E7-2 Fan Tray Assembly Filter, Package of 10 units

100-03590..... E7-2 Fan Tray Assembly 2 (FTA2)\*

000-00760..... E7-2 Fan Tray Assembly 2 (FTA2) Filter, Package of 10 units

\* Variable speed operation under software control requires a minimum of E7 Release 2.2 software. In releases prior to 2.2, the FTA2 fan speeds are identical to the original FTA.

## CALIX PLUGGABLE TRANSCEIVER MODULES

The E7-2 supports pluggable modules for all service and network interfaces. Refer to the Calix Optical Transceiver Modules Datasheet (#250-00191) for a complete list of modules and specifications.

CSFP Option 2..... 1GE optical dual-port Compact Small Form-factor Pluggable (CSFP) Option 2 modules

SFP..... 1GE and 2.5GE optical and copper Small Form-factor Pluggable (SFP) modules

SFP+..... 10GE optical Enhanced Small Form-factor Pluggable (SFP+) modules

Direct Attach..... Multi-rate copper Small Form-factor Pluggable (SFP/SFP+) cables

XFP..... 10GE optical Small Form-factor Pluggable (XFP) modules

GPON OIM..... 2.5Gbps GPON (Class B+ ODN with minimum 28dB link budget, up to 1:64 splits)

ER-GPON OIM..... 2.5Gbps Extended Reach GPON (up to 58 km with 1:4 split)

## CALIX MOUNT KIT

100-03382..... E7-2 ETSI Rack Mount Kit



AXOS

# Calix E7-2 AXOS GPON-8 r2

## DESCRIPTION

Looking to future-proof your next-generation GPON network in preparation for launching advanced services?

As North America's most widely deployed access system, the Calix AXOS E7-2 Intelligent Modular System is a breakthrough evolutionary system that provides a transformational path to next generation networks, fiber technologies, and Software Defined Access. The E7-2 is the industry's benchmark for a modular, small form factor, environmentally hardened access solution for service providers. By adding the AXOS platform, the E7-2 is now even more of a disruptive and compelling enabler to next generation networks that connect the world. The AXOS E7-2 leads a rapidly expanding family of AXOS E-Series systems capable of supporting both centralized and decentralized network architectures that range from the data center edge, central office, or headend, to the remote cabinet, or MDU.



## **FUNCTIONAL DESCRIPTION**

### **GPON AND POINT-TO- POINT ETHERNET:**

The Calix E7-2 AXOS GPON-8 r2 card provides multiservice capability over IP/Ethernet-based networks. Each GPON-8 r2 provides eight GPON OLT ports that subtend up to 128 ONTs each, for a card capacity of 1024 GPON ONTs, or 2048 per E7-2 1RU chassis. An additional four SFP/CSFP sockets per card can provide high-bandwidth, point-to-point Ethernet services to individual subscribers or be used to aggregate other Ethernet devices. The Calix E7-2 GPON-8 r2 card can co-exist with other Calix E7-2 AXOS line cards in a shelf.

## **KEY FEATURES AND CAPABILITIES**

GPON-8 r2 card features and capabilities include:

- Based on ITU G.984 GPON family of standards—including G.988
- GPON: 2.488 Gbps downstream, 1.244 Gbps upstream
- GEM (Ethernet) based GPON
- Interoperable with Calix ONTs, including the GigaFamily
- Integrated 10GE and GE/2.5GE aggregation and transport
- Class B+ ODN, +28 dB link budget, up to 20 km at 32-way splits
- Class C+ ODN, +32 dB link budget with Forward Error Correction (FEC), up to 35 km at 32-way split, up to 60 km at 2-way split
- Hardened for central office and remote terminals

## **INTEGRATED HIGH-CAPACITY AGGREGATION**

The E7-2 AXOS GPON-8 r2 card is built on a core Layer 2 and Layer 3 switch capable of full-duplex, line rate forwarding at all frame sizes and traffic types across all interfaces. Each GPON OLT port has a dedicated 2.5Gbps switch interface. Industry standard pluggable modules are used for all interfaces, including ITU G.984 compliant GPON, GE and 2.5GE optical SFP, 10GE XFP, and 10GE SFP+. The GPON-8r2 supports (4) CSFP (Compact SFP) modules that are mechanically compatible with the industry-ubiquitous SFP module. Each CSFP module supports two independent bidirectional transceivers (1490nm Tx / 1310nm Rx), each capable of operating at a 1 Gbps bi-directional rate. The SFP+ ports also support SFP modules and Direct Attach copper cables.

## **IP SERVICES DELIVERY**

The Calix E7-2 AXOS GPON-8 r2 card delivers a full spectrum of IP access services over GPON and Point-to-Point Ethernet networks.

- Secure AES encryption on the PON
- IPTV – broadcast and Video on Demand (VoD)
- MEF compliant business services
- High-Speed Internet (HSI) access
- Voice – Native SIP/VoIP and TDM Gateway support
- T1 services
- CATV: 1550nm RF video overlay; 1610nm RF return

## **NETWORK RESILIENCY**

All Calix E7-2 AXOS GPON-8 r2 cards support a flexible set of standards-based network topology protocols for use in aggregation, ring-based transport, and uplink.

- ITU G.8032 Ethernet Ring Protection Switching (ERPS)
- ITU G.8032v2 Ethernet Ring Protection Switching (ERPS)
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.3ad/802.1AX Link Aggregation
- ITU G.983.5 – Type B Protection and enhanced survivability for GPON OLTs

## **MOBILE BACKHAUL**

With integrated network synchronization, hierarchical QoS and support for T1 services, the E7-2 AXOS GPON-8 r2 card transport uncompromised mobile broadband traffic while also supporting triple play residential and MEF certified business services from a single platform. A powerful collection of classification, policing, and scheduling algorithms let operators manage per-subscriber and per-service traffic flows to maintain priority/delay/loss service differentiation within the E7 network.

## **SCALABLE IPTV SUPPORT**

The E7 supports industry standard IGMP snooping to identify and replicate multicast video sent between the set-top box and the video distribution network, providing efficient, scalable, high-quality IPTV distribution on both GPON and Ethernet interfaces.

## MINIMUM SYSTEM

### REQUIREMENTS

Calix AXOS Software Release  
3.1.3

### DIMENSIONS (W x H x L)

14 x 10.1 x 0.78 inches  
35.6 x 25.7 x 2 cm

### WEIGHT

2.08 lbs. (0.94 kg)

### PORTS

8 GPON OLT ports  
8 CSFP 1GE ports (4 CSFP  
sockets, also support SFP  
modules)  
2 SFP+ ports supporting 10GE  
and GE optical modules  
2 XFP ports supporting 10GE  
optical modules

### PACKET SWITCHING

#### CAPACITY

Wire speed forwarding across all  
Ethernet and GPON OLT ports  
64,000 MAC addresses per  
system  
9,000 byte jumbo frames  
2,000 byte frames over GPON  
4,096 VLANs  
4,000 IGMP Multicast channels

## QUALITY OF SERVICE

Service classification based on  
port, SVLAN-ID, CVLAN-ID,  
P-Bit

Port and flow-based policing to  
1Mbps increments

8 CoS queues per port  
Strict priority scheduling with  
minimum bandwidth  
guarantee

Congestion avoidance: Tail Drop

## STANDARDS AND RFC

### SUPPORT

TR101 VLAN Service models  
IEEE802.1ag Connectivity Fault  
Management (G.8032  
support)

IEEE 802.1D Rapid Spanning  
Tree

IEEE 802.1p CoS Prioritization

IEEE 802.1 MAC Bridges

IEEE 802.1Q VLAN tagging

IEEE 802.1ad VLAN stacking

(Q-in-Q) support

IEEE 802.1w RSTP

IEEE 802.3ad/802.1AX Link  
Aggregation

RFC 2236 IGMP v2

RFC 3376 IGMP v3

RFC 3046 DHCP Relay Agent  
Information Option ("Option  
82")

RFC 4541 IGMP snooping

RFC 4553 Structure-Agnostic  
Time Division Multiplexing  
(TDM) over Packet (SAToP)

ITU-T G.8032 Ethernet Ring  
Protection Switching (ERPS)/

Enhanced EAPS

ITU-T G.8032v2 Ethernet Ring  
Protection Switching (ERPS)

ITU-T G.984 GPON

ITU G.984.1 Type B Protection  
Dynamic Bandwidth Assignment  
(DBA)

NIST Advanced Encryption  
Standard (AES)

## SYNCHRONIZATION

Synchronization enabled by E7  
line cards

External reference timing

Built-in Stratum-3 clock

Hardware-ready to support  
Synchronous Ethernet, IEEE  
1588v2

## COMPLIANCE

NEBS Level 3 compliance  
(GR-63-CORE, GR-1089-  
CORE, GR-3028)

UL 60950

FCC Part 15 Class A  
CE Mark

## POWER SPECIFICATIONS

GPON-8 r2 power/heat  
dissipation: 85 Watts  
(Maximum) 75 Watts  
(Typical)

## OPERATING ENVIRONMENT

Temperature: -40° to +65° C  
(-40° F to +149° F)

Humidity: 10 to 95% (non-  
condensing)

## STORAGE ENVIRONMENT

Temperature: -40° to +85° C  
(-40° F to +185° F)

Humidity: 5 to 95%



#### NOTES

For AXOS GPON OIM, 10GE XFP, 10GE SFP+ pluggable transceivers and Direct Attach cables, and all transceivers used in CSFP Option 2 sockets only products purchased directly from Calix are supported. The use of GPON OIM, 10GE XFP, 10GE SFP+ pluggable transceivers and Direct Attach cables not purchased directly from Calix is not supported and will void all product warranties covering the Calix equipment to which such third-party materials are connected.

- Only AXOS GPON OIMs are supported by the E7-2 AXOS GPON-8 r2 card
- SFP modules may also be used in SFP+ sockets at 1GE rate.
- Copper Direct Attach cables can operate in SFP and SFP+ sockets at 1GE, 2.5GE, and 10GE data rates as supported by the card type.

#### CALIX ONTs

The E7-2 AXOS GPON-8 r2 card supports the Calix family of ONTs, including 700GX, 700GE, 836GE, and 800G GigaFamily. Calix ONTs support auto sensing GPON and GE network interfaces, allowing service providers to manage service changes without subscriber onsite technical support.

#### CALIX E7-2 AXOS LINE CARDS

100-04665..... E7-2 AXOS GPON-8 r2 (8x GPON OIM, 4x GE SFP, 2x 10GE SFP+, 2x 10GE XFP)

#### CALIX PLUGGABLE TRANSCEIVER MODULES

The E7-2 supports pluggable modules for all service and network interfaces. Refer to the Calix Optical Transceiver Modules Datasheet (#250-00191) for a complete list of modules and specifications.

**SFP** ..... 1GE and 2.5GE optical and copper Small Form-factor Pluggable (SFP) modules

**SFP+** ..... 10GE optical Enhanced Small Form-factor Pluggable (SFP+) modules

**CSFP Option 2** ... 1GE optical dual-port Compact Small Form-factor Pluggable (CSFP) Option 2 modules

**XFP** ..... 10GE optical Small Form-factor Pluggable (XFP) modules

**Direct Attach** ..... Multi-rate copper Small Form-factor Pluggable (SFP/SFP+) cables

#### AXOS GPON

**B+ OIM** ..... 2.5Gbps GPON (Class B+, 20km, C-Temp, AXOS) 2.5Gbps GPON (Class B+, 20km, I-Temp, AXOS)

#### AXOS GPON

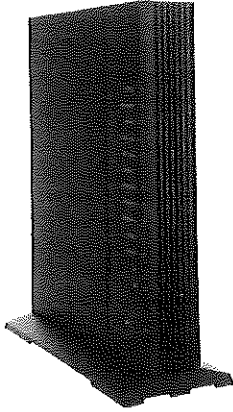
**C+ OIM** ..... 2.5Gbps GPON (Class C+, 60Km, I-Temp, AXOS)



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## PRODUCT DATASHEET

# 844G and 854G GigaCenters | ANSI



### DESCRIPTION

The Calix 844G and 854G GigaCenters are next generation residential premises service delivery platforms that extend the access network into the home and act as a strategic location for control of the gigabit experience. Supporting broadband connectivity within the home and managing subscriber voice, data and video services, this intelligent, high-performance service platform integrates a 2.5 GPON optical interface with switching and routing functions that manage premises network traffic at speeds up to 1 Gbps. The GigaCenter service interfaces include: carrier class wireless networking with 802.11ac Wi-Fi and four Gigabit Ethernet (GE) ports for IPTV video and data services, two integrated voice lines supporting carrier grade VoIP and network-based TDM voice circuits, a USB port for home networking services, and an option for RF video.

**GIGABIT SUBSCRIBER EXPERIENCE:** The 844G and 854G GigaCenters are integrated access and gateway solutions that deliver advanced network management and software features to unleash the gigabit experience throughout a subscriber's home. The GigaCenter service delivery platform terminates a GPON fiber optic link at the subscriber's premises and provides carrier class Wi-Fi and Gigabit Ethernet interfaces for customer multi-media devices. The 844G and 854G GigaCenters enable residential subscribers to receive gigabit broadband data, IP video, and VoIP or TDM based voice on a single fiber. Using the latest 802.11ac 5GHz technology incorporating 4x4 multi-user multiple-input and multiple-output (MU-MIMO) and beamforming, the 844G and 854G GigaCenters allow service providers to extend the access network inside the home and establish a strategic location for the delivery and control of broadband services. A USB port is available for home networking with other Ethernet appliances. The GigaCenter family also includes the option of RF signaling for broadcast video services over existing Hybrid Fiber Coax (HFC) networks.

Calix engineered the 844G and 854G GigaCenters for optimal whole-home coverage with simultaneous dual-band 2.4GHz and 5GHz operation and dynamic beamforming at 5GHz. For maximum performance, the GigaCenter supports high-power 2x2 MIMO spatial diversity at 2.4GHz and 4x4 MU-MIMO at 5GHz. The 844G and 854G GigaCenters support the entire 5GHz band including DFS channels and can be provisioned to support 80MHz bandwidth at 5GHz. The GigaCenter solution delivers HD video and data throughout a subscriber's home with control and management of an increasingly video-rich and mobile broadband environment.

**EASY TO INSTALL, ACTIVATE, AND MAINTAIN:** With the 844G and 854G GigaCenters, Calix has redefined how to install and activate residential services at a subscriber's premises. Using the Calix Smart Activate feature and a phone or laptop, a field technician can install and apply the subscriber's service profile without special equipment or assistance from the central office. Calix also provides the innovative Compass software portfolio, including Consumer Connect, which allows the service provider to configure, activate and upgrade the GigaCenter quickly from a remote location using in-band management or TR-069. Extensive troubleshooting capabilities, remote software downloads, and easy-to-use service activation ensure that services are delivered and maintained without needless truck rolls and hardware upgrades. Employing GigaCenters allows service providers to reduce their operational expenses while effectively delivering the gigabit experience to their subscribers.

**TRUE CARRIER GRADE VOICE SOLUTION:** The 844G and 854G GigaCenters deliver a truly agile and responsive service platform with lifeline voice in the event of local AC power loss. A carrier grade 120-240 VAC, 50-60 Hz AC to 12 VDC Uninterruptible Power Supply (UPS) provides battery backup of voice services compliant to Telcordia GR-909. The 844G and 854G GigaCenters can monitor battery status, battery charge and battery life, and report results through the Calix Management System (CMS).

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## PRODUCT DATASHEET

# 844G and 854G GigaCenters | ANSI

### KEY ATTRIBUTES

- Standards-based Full Service Access Network (FSAN), ITU-T GPON compliant
- Home Gateway:
  - Layer 2 bridge and Layer 3 routing for High Speed Internet (HSI) data and IPTV video services
  - DHCP server options
  - DHCP (IPoE) and PPPoE network connections
  - Network Access Translation (NAT), public to private IP addressing
  - Configurable IP address schemes, subnets, static-IP addresses
  - DNS server
  - Bridge port assignment and data traffic mappings
  - Port forwarding
  - Firewall and security
  - Application and website filtering
  - Selectable forwarding and blocking policies
  - DMZ hosting
  - Parental controls, time of day usage
  - Denial of service
  - MAC filtering
  - Time/Zone support
  - Universal Plug-and-Play (UPnP)
- Wireless:
  - 2.4GHz and 5GHz, simultaneous dual-band
  - 5GHz 802.11ac certified, 802.11a/g/n compatible
  - 2.4GHz 802.11n certified, 802.11b/g compatible
  - WPA/WPA2
  - WPS push-button
  - WEP 64/128 bit encryption
  - Eight SSIDs per band with factory default SSIDs
  - MAC filtering
- Two voice lines:
  - FXS ports, ANSI
  - Carrier grade SIP, H.248, MGCP VoIP
  - TDM GR-303/TR-08 Mode II/GR-57, GR-08 (TR-08 Mode I) voice services
- Four Gigabit Ethernet (GE) interfaces:
  - Symmetrical 1 Gbps bandwidth for residential IPTV and data services
  - Multi-rate 10/100/1000 BaseT Ethernet, auto-negotiating
- USB port:
  - USB 2.0 - Type A configured as a host interface
- RF video bandwidth to 1 GHz for extended digital programming
- Supports multiple data service profiles
- Traffic management and Quality of Service (QOS):
  - 802.1Q VLANs
  - 802.1p service prioritization
  - Q-in-Q tagging
  - Multiple VLANs
  - Rate limiting
  - DiffServ
  - Pre-defined QOS on service type
- IPTV, IGMPv2, IGMPv3:
  - IGMP Snooping and Proxy
  - IGMP Fast Leaves
- Complete OAM&P support via Calix Management System (CMS)
- Gateway Management:
  - TR-069
  - Local Home Gateway GUI, access provisionable
  - Remote WAN side GUI access
  - Default username/password
  - Set-up persistence, factory reboot support
- Indoor mounting:
  - Wall and Structured Wiring Enclosure (SWE) mount with fiber management
  - Desktop mounting stand
- Optional voice lifeline service power source with in-home battery backup and alarm monitoring
- AC to 12 VDC power adapter available for non-lifeline services.

## SPECIFICATIONS

# 844G and 854G GigaCenters | ANSI

### DIMENSIONS

Width: 7.9 in (20.0 cm)  
Height: 10.6 in (26.9 cm)  
Depth: 1.8 in (4.6 cm)  
Weight: 28 oz. (.8 kg)

### PON CHARACTERISTICS

Max. split: 64 GPON  
Max. reach: 58 km (36 miles) with C+/FEC  
Maximum Optical Distribution Network  
(ODN) Attenuation:  
GPON Class B+, 28 dB  
GPON Class C+, 32 dB  
1490 ± 10 nm optical receiver:  
-27.0 to -8.0 dBm  
1310 ± 20 nm optical transmitter:  
0.5 to 5.0 dBm

### INTERFACES

Wireless: 2.4GHz 2x2 and 5Hz 4x4 internal antennas  
Telephony: Two RJ-11 connectors  
Data/IPTV: Four 10/100/1000 BaseT Ethernet ports, RJ-45 connectors  
USB: USB 2.0 Type A  
RF Video: F-connector, 75 Ohms  
PON: Single 9/125 μm (single mode) fiber, SC/APC connector, minimum 50 dB return loss  
Power: 8-pin connector

### TELEPHONY

General: SIP, H.248, MGCP or TDM  
Gateway (GR-303, GR-57, TR-08 Mode I, TR-08 Mode II)  
Number of lines: 2  
RENs per line: 5 maximum  
RENs per unit: 10 maximum  
Drop length: Maximum 500 feet (152.4 m)  
DSO Output: 23.5 mA

### DATA

Drop length: 328 feet (100 m) maximum using CAT5 cable  
Auto MDI/MDIX crossover for 1000BASE-TX, 100BASE-TX, and 10BASE-T ports  
Traffic Management and QOS: 802.11Q VLAN; 802.11p voice, video, data and management priorities; Q-in-Q tagging; Rate limiting

### WIRELESS

2.4GHz 802.11 b/g/n  
2x2 MIMO, high-power  
5GHz 802.11 a/g/n/ac  
4x4 MU-MIMO, implicit/explicit dynamic beamforming  
2.4GHz and 5GHz simultaneous  
8 SSIDs per band (2 SSID subscriber default)  
Auto channel selecting and interference detection  
WPS, WPS push button  
Wireless Security: Wi-Fi protected access (WPA/WPA2) WEP, MAC address filtering  
Wi-Fi multimedia (WMM)

### VIDEO-ANALOG RF OUTPUT

Bandwidth: 54 to 550 MHz  
Return loss: 10 dB minimum  
Signal strength (within AGC range):  
18 ± 2 dBmV  
Flatness: ± 1.0 dB  
Tilt: 1.0 dB ± 1.0 dB from 54 to 550 MHz

### VIDEO-DIGITAL RF OUTPUT

Bandwidth: 550 to 1003 MHz  
Return loss: 8 dB minimum  
Signal strength (within AGC range):  
12 ± 2 dBmV  
Flatness: ± 1.5 dB  
Tilt: 4.0 dB ± 1.0 dB from 550 to 1003 MHz  
Modulation Error Ratio (MER): 33 dB

### VIDEO-DIGITAL RF INPUT

Optical Input (GPON)  
Wavelength: 1555 ± 5 nm  
Signal strength at 3.5% OMI (within AGC range):  
-6.0 to 2.0 dBm

### REMOTE MANAGEMENT

OAM&P via CMS  
TR-069 remote management  
TR-064 CPE management  
TR-098 Internet Gateway Device Data Model

### ENVIRONMENTAL

Operating temperature: Indoor ambient temperature, 0° to 40°C (32° to 104° F)  
Operating/storage relative humidity: 8 to 95 % non-condensing  
Altitude: -200 to 10,000 feet (-61 to 3,048 m) above sea level

### CERTIFICATION AND COMPLIANCE

Emissions:  
FCC Part 15 Class B, IC ICES-003 Class B  
CISPR-22  
Safety:  
UL 60950 and UL 1697 approved  
IEEE: 802.3, 802.3AB, 802.3U, 802.11p, 802.11Q  
Wi-Fi Alliance Certified  
802.11ac and 802.11n



USB-IF Compliance  
USB 2.0



### POWERING AND ALARMS

8-pin connector with 7-conductor power and alarm cable  
Input voltage: 12 VDC (nominal), 10 VDC (min.), 15 VDC (max)  
External Power Adapter: 12 VDC, 2.5 A  
Residential battery backup source: UPS mounted at subscriber's residence  
Battery backup time rated capacity: 8 hours based on Telcordia GR-909 calculation methods using recommended UPS.

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ORDERING INFORMATION

## 844G and 854G GigaCenters | ANSI

### Calix 844G and 854G GigaCenters

100-04011.....844G-1 GigaCenter, 2 POTS, 4 GE, Dual Wi-Fi, 1 USB -UPS Power Interface

100-04013.....854G-1 GigaCenter, 2 POTS, 4 GE, Dual Wi-Fi, 1 USB, 1 RF -UPS Power Interface

### Calix 844G and 854G UPS and UPS Cords

100-04068.....Indoor UPS, 12V 7.2AH 36W, Black - AM Type B Grounded

100-03893.....Indoor UPS Power Cord, 7 pin UPS to 8 pin ONT Male, 1M Black

100-03894.....Indoor UPS Power Cord, 7 pin UPS to 8 pin ONT Male, 3M Black

100-03895.....Indoor UPS Power Cord, Un-terminated to 8 pin ONT Male, 6M Black



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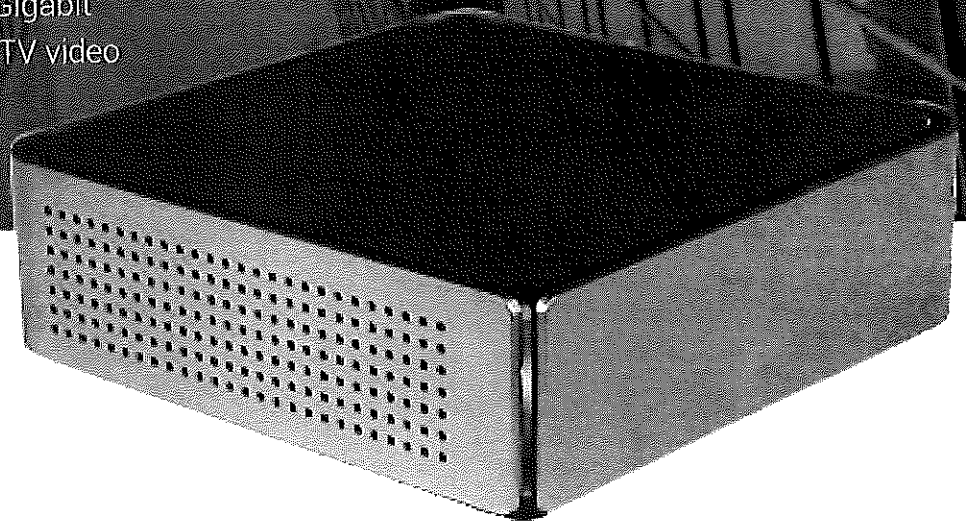
# GigaPoint<sup>®</sup> (GP1000X)

POWERED BY EXOS

## DESCRIPTION

The Calix GP1000X GigaPoint<sup>®</sup> is a small form factor service delivery terminal that delivers broadband connectivity to the subscriber using the XGS-PON standard.

This high-performance terminal integrates a XGS-PON optical WAN interface that enables residential and symmetrical business network traffic at speeds up to 10 Gbps. The GP1000X GigaPoint includes one 10 Gigabit Ethernet (10 GE) port for IPTV video and data services.



### 10 GIGABIT SUBSCRIBER EXPERIENCE

The GP1000X GigaPoint is an integrated access device that delivers advanced network management and software features to enable the 10 Gigabit experience. The GP1000X GigaPoint terminates an XGS-PON fiber-optic link at the subscriber's premises and provides an industry-standard 100/1000/10G BASE-T interface for the customer premises equipment. The GP1000X GigaPoint enables residential subscribers to receive 10 Gigabit broadband data and IP video on a single fiber.

### EASY TO INSTALL, ACTIVATE, AND MAINTAIN

With the GP1000X GigaPoint, Calix has redefined how to install and activate residential and business services at a subscriber's premises. Using the Calix Smart Activate feature and laptop, a field technician can install and apply the subscriber's service profile without special equipment or assistance from the central office. Employing the GP1000X GigaPoint allows service providers to reduce their operational expenses while effectively delivering the 10 Gigabit experience to their subscribers.

### POWER OPTIONS

The GP1000X GigaPoint power options include a 120-240 V AC, 50-60 Hz to 12 V DC power adapter.

## KEY ATTRIBUTES

- Standards-based Full Service Access Network (FSAN), XGS (G.9807.1) compliant
- One 10G BASE-T Gigabit Ethernet (GE) interface
  - Symmetrical 10 Gbps bandwidth for residential IPTV and data services
  - Multi-rate 100/1000/10G BASE-T Ethernet, auto-negotiating
- Supports multiple data service profiles
- Traffic management and Quality of Service (QoS):
  - 802.1Q VLANs
  - 802.1p service prioritization
  - Q-in-Q tagging
  - Multiple VLANs
  - Rate limiting
  - DiffServ
  - Pre-defined QoS on service type
- IPTV, IGMPv2, IGMPv3 ASM:
  - IGMP Snooping
  - IGMP Fast Leaves
- Complete Calix Smart Activation
- Indoor mounting options:
  - Wall mount
  - Desktop mount: horizontal or vertical
- AC to 12 V DC power adapter



## SPECIFICATIONS

### DIMENSIONS

Height: 2.38 in (6.0 cm)  
Width (square): 6.88 in (17.5 cm)  
Height: 2.3 in (5.8 cm)  
Weight: 20 oz (0.58 kg)

### PON CHARACTERISTICS

Max. split\*: 128 XGS-PON  
Max. reach\*: 20 km (12.4 miles), N1 Class  
Maximum Optical Distribution Network  
(ODN) Attenuation: XGS, 29 dB  
Optical receiver 1577nm: -28dBm  
Optical transmitter 1270nm: +4 to +9 dBm

### INTERFACES

Data/IPTV:  
One 10G BASE-T 10G Ethernet port  
PON: Single 9/125  $\mu$ m (single mode) fiber,  
SC/APC connector, minimum 50 dB  
return loss  
Power: 8-pin connector

### DATA

Drop length: 180 feet (55m) maximum,  
using CAT6 cable; 328 feet (100m)  
maximum, using CAT6A or CAT7 cable  
Auto MDI/MDIX crossover for  
100/1000/10G BASE-T ports  
IEEE 802.3an and IEEE802.3-2012  
Traffic Management and QoS: 802.1Q  
VLAN, 802.1 video data and  
management priorities; Q-in-Q tagging;  
rate limiting

### ACTIVATION MANAGEMENT

Calix Smart Activation

### CERTIFICATION AND COMPLIANCE

Emissions:  
FCC Part 15 Class B  
CISPR-22  
Safety:  
UL 60950 and UL 1697 approved  
IEEE: 802.3, 802.3AB, 802.3U, 802.11p,  
802.11Q

### ENVIRONMENTAL

Operating temperature:  
Indoor ambient temperature,  
0° to 40°C (32° to 104° F)  
Relative humidity (non-condensing):  
Operating/Storage: 5%-90%  
Shipment/Storage: 5%-95%

### POWERING AND ALARMS

8-pin connector  
Input voltage: 12 V DC (nominal),  
10 V DC (min), 21 V DC (maximum)  
External Power Adapter: External Power  
Adapter: 12 V DC, 2.5 A  
Maximum power consumption: 13.6 W

\*Not necessarily simultaneously

## ORDERING INFORMATION

### Calix GP1000X GigaPoint

100-04647..... GP1000X 10G GigaPoint, 10 GE and 12 V DC US Power Adapter  
100-04992..... GP1000X GigaPoint, 1 10GE – UPS Power Interface  
100-04141 ..... Power Adapter CPA5 12 V 2.5 A – EU Type C w/ 8-pin connector  
000-01057 ..... GP1000X GigaPoint, 1 10GE -UPS Power Interface and 12 V DC EU Power Adapter

Note: Calix believes the information in this publication to be accurate as of publication date, and is not responsible for error. Product Specifications are subject to change without notice.



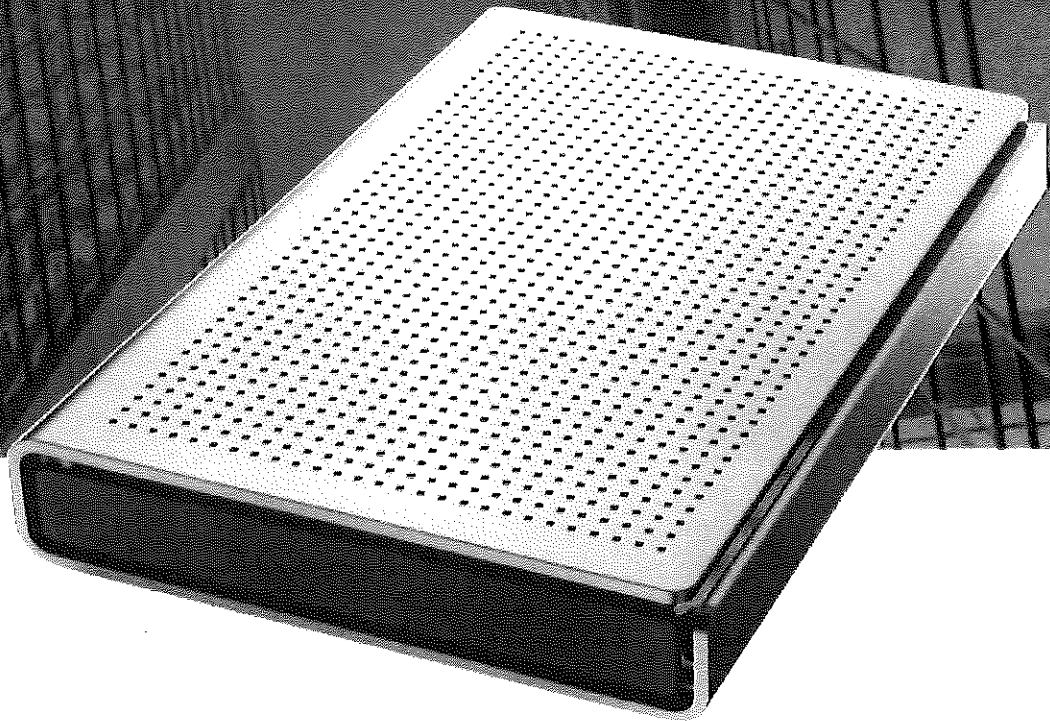


# GigaPro (GPR3000X)

POWERED BY EXOS

## DESCRIPTION

The GPR3000X GigaPro business Ethernet services edge device delivers 10 Gigabit broadband connectivity using the XGS standard to the enterprise environment. This high-performance device delivers IP and Carrier Ethernet services in compliance with MEF CE 2.0. Flexible SFP+ XGS optical WAN interface assures traffic speeds up to 10 Gbps. The GPR3000X service interfaces include: one 10G SFP+ Ethernet port and two 10/100/1000 BASE-T Ethernet ports for business and data services.



### **10 GIGABIT BUSINESS EXPERIENCE**

The Calix GPR3000X GigaPro delivers advanced network management and software features with MEF CE 2.0 E-LINE support. The GigaPro business Ethernet platform has an SFP+ optical WAN interface to terminate an XGS fiber-optic wavelength link at the business premises, providing one 10 Gigabit and two Gigabit Ethernet interfaces for customer multi-media devices. Both the 10 Gigabit and two Gigabit Ethernet interfaces have the flexibility to be configured for UNI or I-NNI applications. Multiple services of the same or different types can be multiplexed on the same Ethernet interface to create a multiservice, multi-subscriber demarcation. The GPR3000X enables business and enterprise subscribers to receive 10 gigabit broadband data on a single fiber.

### **ETHERNET SWITCHING**

The GPR3000X GigaPro supports multiple EVCs per UNI with policing to provide CE 2.0-compliant multi-Class of Service (CoS) capabilities. You can apply bandwidth profiles on the GPR3000X on a per-CoS basis in an EVC. Each GPR3000X GigaPro can support up to 80 EVCs. Scheduling options include Strict Priority Queuing (SP) and Deficit Weighted Round Robin (DWRR). The Ethernet interfaces support 8 CoS egress queues with scheduling, marking of DEI based on classifiers, and minimum/maximum rate controls. The GPR3000X supports an MTU of 9,600 Bytes.

### **PERFORMANCE ASSURANCE**

The Calix GPR3000X GigaPro is compliant with MEF CE 2.0 manageability requirements through support for IEEE 802.1ag and ITU Y.1731 standards. The GPR3000X also supports Service Activation Testing (SAT) based on ITU Y.1564, and MEF 48, where the GigaPro acts as reflector or load generator/collector for single ended measurements.

### **EASY TO INSTALL, ACTIVATE, AND MAINTAIN**

The GPR3000X GigaPro supports zero-touch commissioning. A field technician can install without a configuration file, command line interface, special equipment, or central office assistance. Calix also provides the innovative Operations Cloud software portfolio that includes management via Activate and birth, allowing Calix to configure, activate, upgrade and meet MEF CE 2.0 compliance quickly from a remote location. Extensive troubleshooting capabilities and easy-to-use service activation ensure that broadband services are delivered and maintained without needless truck rolls and hardware upgrades.

### **CARRIER-GRADE BUSINESS ETHERNET SOLUTION**

The GPR3000X GigaPro delivers a truly agile and responsive business Ethernet service platform with high availability. The GPR3000X supports carrier grade 120-240 V AC, 50-60 Hz AC to +12 V DC power adapter.

## KEY ATTRIBUTES

- Standards-based Full Service Access Network (FSAN), XGS (G.9807.1) compliant
- Two Gigabit Ethernet (GE) interfaces:
  - Symmetrical 1 Gbps bandwidth for business services
  - Multi-rate 10/100/1000 BASE-T Ethernet, auto-negotiating
- SFP+ XGS uplink port
- One 10 GigaBit Ethernet SFP+ interface
- Access, traffic management and Quality of Service (QoS):
  - 2r3c policing
  - 802.1Q VLANs
  - 802.1p service prioritization
  - Q-in-Q tagging
  - Multiple EVCs, Multiple VLANs
  - DiffServ
  - Pre-defined QoS on service type
  - Broadcast, Multicast and Destination Lookup Failure (DLF) Storm Control
- Network timing:
  - G.987.3 time of day (TOD) distribution
- Indoor mounting options:
  - Wall mount
  - 19" horizontal rack mounting in 1 RU with mounting bracket
  - Desktop mount; horizontal or vertical
- AC to +12 V DC power adapter

## SPECIFICATIONS

### DIMENSIONS

Height: 9.0 in (22.8 cm)  
Width: 6.5 in (16.5 cm)  
Depth: 1.66 in (4.2 cm)  
Weight: 23 oz (0.7 kg)

### PON CHARACTERISTICS

Max. split\*\*: 128 GPON  
Max. reach\*\*: 20 km (12.4 miles), N1 Class  
Maximum Optical Distribution Network (ODN) Attenuation: XGS, 29 dB  
Optical receiver 1577nm: -28dBm  
Optical transmitter 1270nm: +2.0 to +7 dBm

### INTERFACES

Data/Business Ethernet:  
Two 10/100/1000 BASE-T Ethernet port RJ 45 connectors  
One SFP+ 10G Ethernet port  
SFP+ XGS uplink port  
PON: Single 9/125  $\mu$ m (single mode) fiber, SC/APC connector, minimum 50 dB return loss  
Power: 8-pin connector

### DATA

Drop length: 328 feet (100 m) maximum, using CAT6 or CAT6A cable  
Auto MDI/MDIX crossover for 10/100/1000 BASE-T ports  
Traffic Management and QoS: 802.1Q VLAN, data and management priorities; Q-in-Q tagging; ingress port policing at LAN and WAN

### STANDARDS SUPPORT

IEEE Bridging  
IEEE 802.3 Ethernet  
VLAN Cross-Connect – based on Outer, Outer and Inner VLAN tags  
IEEE 802.1p Prioritization  
IEEE 802.1Q VLAN tagging  
IEEE 802.1ad VLAN stacking (Q-in-Q) support  
IEEE 802.1ag Connectivity Fault Management  
Y.1731 OAM functions and mechanisms for Ethernet based networks  
Y.1564 Ethernet service activation test methodology  
MEF 6.1.1 – L2CP aspects Amendment to 6.1

### MEF 10.3 Service Attributes

MEF 11/13/20 UNI type 1 and 2  
MEF 23.1 Class of Service Phase 2 Implementation Agreement  
MEF 30 Service OAM Fault Management Implementation Agreement  
MEF 35 Service OAM Performance Monitoring Implementation Agreement  
MEF 45 Multi-GEN L2CP  
MEF 48 Service Activation Testing  
MEF 49 Service Activation Testing Protocol and PDU Formats

### CERTIFICATION AND COMPLIANCE

#### Emissions:

FCC Part 15 Class B  
CISPR-22

#### Safety:

UL 60950 and UL 1697 approved  
IEEE: 802.3, 802.3AB, 802.3U, 802.11p, 802.11q

## SPECIFICATIONS (... CONTINUED)

### TIMING

ITU G.987.3 10-Gigabit-capable passive optical networks  
SyncE SSM per ITU-T G.781  
Synchronization Layer Function

### ENVIRONMENTAL

Operating temperature:  
Indoor ambient temperature,  
0° to 40°C (32° to 104° F)  
Relative humidity (non-condensing):  
Operating/Storage: 5% to 90%

### POWERING AND ALARMS

8-pin connector  
Input voltage: 12 V DC (nominal),  
10 V DC (min), 15 V DC (max)  
External Power Adapter: External Power  
Adapter: 12 V DC, 2.5 A

### QUALITY OF SERVICE

Classification based on Ethernet and IP header  
Priority bit (Pbit) and DSCP mapping capability at the subscriber edge  
Priority bit based CoS queuing: 8 queues per egress interface and 4 CoS queues per shaped service  
MEF-compliant single level policing  
Ingress Policing per service, per classified traffic  
Egress Policing per service, per classified traffic  
Color blind policers  
Burst size  
Weighted Random Early Detection (WRED) per queue  
Advanced Scheduling options: Strict Priority, and Deficit Weighted Round Robin. A combination of these scheduling options can be used on an egress interface.

### SERVICE ACTIVATION TESTING (SAT)

Support Generator/Collector for Two-Way SAT, frame delivery, SCT (cir, eir+cir, policing), SPT (cir)  
Keeps up to 5 of the last test results which can be referenced via the "transaction\_id", i.e tid (persists across reboot)  
Supports both tagged (FL-PDU) and untagged (IPV4) subscriber test frames  
Support testing multiple EVCs and CoS on a single interface simultaneously (up to 64 frame-sets) (only one active SAT test per interface)  
Frame Delivery (unicast, multicast, and broadcast)  
Bad frame testing supported, CVLAN preservation testing  
Delay measurement for SCT (cir, cir+eir, policing), and SPT  
Supports both fixed packet and emix profile testing for SCT/SPT (bandwidth profile testing and performance testing)  
Supports testing DSCP/filtering setting for untagged frames  
Supports blocking of EVC traffic from subscriber ports for both generator and reflector  
Auto configure parameters from traffic management configuration system  
Support Per EVC (up to 64 simultaneous) latching loopback interface  
Supports packet lengths up to full ethernet frame sizes of 9,600+ bytes.  
Supports auto-configuration required by SAT YANG model, as well as specific user-defined test settings such as:

- CIR/EIR
- CVID+CPBIT settings (auto-selects lowest values when un-specified)
- DSCP value to use (auto-selects lowest value when un-specified)

### ETHERNET OAM

802.1ag & Y.1731  
Supports CFM, SOAM and Maintenance End Points  
Peer to Peer Delay Measurements  
2-way Delay Measurement  
Y.1564 based Service Activation Testing  
Service Activation Testing: Multi-Gigabit Load generation, Multi-Gigabit Loop back  
Interoperable with systems supporting 802.1ag and Y.1731  
RFC2544 based Service Activation Testing  
Continuity Check Message at 100 milliseconds interval

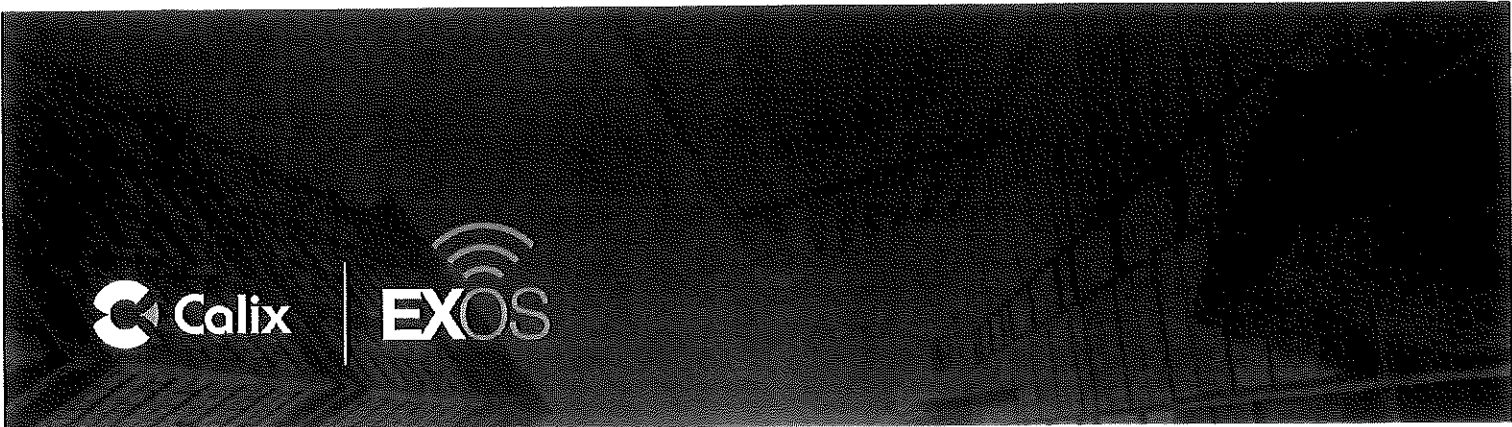
### MANAGEMENT SUPPORT

Performance monitoring and statistics  
Network Configuration Protocol (NETCONF)  
MEF 31 YANG equivalent Service OAM Fault Management Definition of Managed Objects  
MEF 38 YANG equivalent Service OAM Fault Management YANG Modules

### PERFORMANCE MANAGEMENT

Internet Protocol Flow Information Export (IPFIX)

\*\*Not necessarily simultaneously



**ORDERING INFORMATION**

**Calix GPR3000X GigaPro**

- 000-01101 ..... GPR3000X (100-04811) and XGS-PON SFP+ optical module  
1270/1577nm, single fiber transceiver, I-Temp (100-04531)
- 100-04811 ..... GPR3000X 10G GigaPro, 2 GE, 1 SFP+10GE, AM Power Adapter
- 100-04994..... GPR3000X 10G GigaPro, 2 GE, 1 SFP+10GE, UPS Power Interface
- 100-05088 ..... GPR3000X 19 inch rack mount bracket and accessories

Note: Calix believes the information in this publication to be accurate as of publication date, and is not responsible for error. Product Specifications are subject to change without notice.

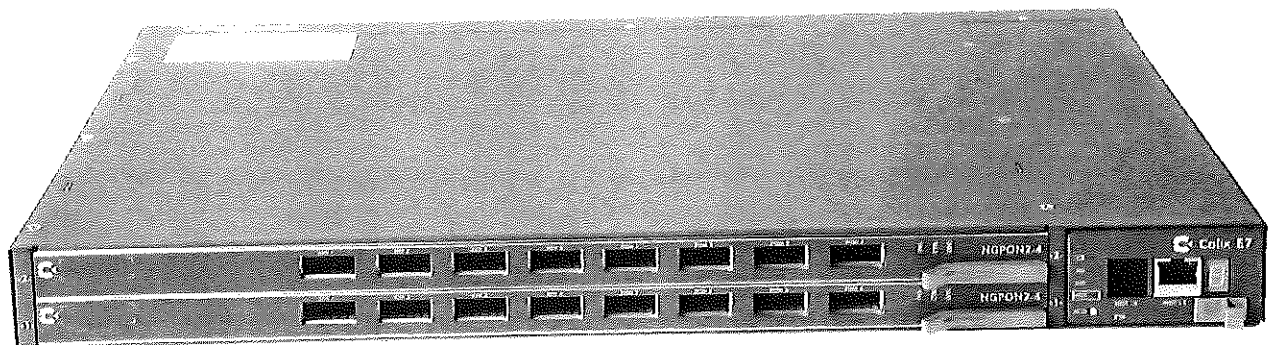


# Calix E7-2 A AXOS NGPON2-4

## DESCRIPTION

Looking to future-proof your next-generation GPON network in preparation for launching advanced services?

As North America's most widely deployed access system, the Calix AXOS E7-2 Intelligent Modular System is a breakthrough evolutionary system that provides a transformational path to next generation networks, fiber technologies, and Software Defined Access. The E7-2 is the industry's benchmark for a modular, small form factor, environmentally hardened access solution for service providers. By adding the AXOS platform, the E7-2 is now even more of a disruptive and compelling enabler to next generation networks that connect the world. The AXOS E7-2 leads a rapidly expanding family of AXOS E-Series systems capable of supporting both centralized and decentralized network architectures that range from the data center edge, central office, or headend, to the remote cabinet, or MDU.



## FUNCTIONAL DESCRIPTION

### 10 GIGABIT PON:

The Calix AXOS E7-2 NGPON2-4 line card provides all the benefits of Calix AXOS while bringing both NG-PON2 and XGS-PON technology to the access network. Each card provides 4 XGS-PON or NG-PON2 OLT channel termination ports that subtend up to 128 ONTs each, for a capacity of 512 ONTs per card and 1024 ONTs per E7-2 1RU chassis. Each port can be independently provisioned to support NG-PON2 or XGS-PON.

## KEY FEATURES AND CAPABILITIES

The NGPON2-4 card features and capabilities include:

- Based on ITU G.989 NG-PON2 and XGS-PON family of standards
- 9.953 Gbps downstream, 9.953 Gbps upstream
- Supports up to 4 TWDM wavelengths (one per physical port, upgradeable to 8 wavelengths in future) and the XGS-PON wavelength
- Supports NG-PON2 wavelength mobility
- Leveraging OMCI and GEM (Ethernet) based provisioning model as GPON
- Interoperable with Calix Next Generation 10G PON Residential SFUs and MDUs as well as Business ONTs
- Class N1 +29 dB link budget, up to 1:128 splits
- Integrated 10GE aggregation and transport
- Hardened for central office and remote terminals

## IP SERVICES DELIVERY

The Calix AXOS E7-2 NGPON2-4 line card delivers a full spectrum of IP access services over PON fiber networks.

- 4K IPTV – broadcast and Video on Demand (VoD)
- MEF CE 2.0 compliant business services
- Ultra-fast High-Speed Internet (HSI) access
- Voice – Native SIP/VoIP and TDM Gateway support

## INTEGRATED HIGH-CAPACITY TRANSPORT

Built on a core Layer 2 and Layer 3 switch, the AXOS E7-2 NGPON2-4 line card is capable of full-duplex, line rate forwarding at all frame sizes and traffic types across all interfaces. Each PON port has a dedicated 10 Gbps switch interface. Four 10 GE XFP uplinks provide support for backhaul of all traffic.

## NETWORK RESILIENCY

The Calix AXOS E7-2 NGPON2-4 line card supports a flexible set of standards-based network topology protocols for use in point to point or ring based transport.

- ITU G.8032v2 Ethernet Ring Protection Switching (ERPS)
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.3ad/802.1AX Link Aggregation

## MOBILE BACKHAUL & FRONTHAUL

With integrated network synchronization, Ethernet OAM and advanced timing capabilities, the AXOS E7-2 NGPON2-4 line card can be used to transport mobile front haul as well as backhaul traffic while also supporting triple play residential and MEF certified business services from a single platform.

## UNIFIED ACCESS INFRASTRUCTURE

With advanced QoS and intelligent NG-PON2 card architecture, operators have a cost-effective way to start with XGS-PON for high density MDU residential services such as Gfast. Then, operators can seamlessly migrate to TWDM optics and further monetize their investment by offering SLA-driven business and mobile hauling capabilities. The AXOS E7-2 NGPON2-4 line card will thus offer ultra-high bandwidth residential IPTV services, mobile and business services over a single unified access infrastructure.

**MINIMUM SOFTWARE  
RELEASE**

Calix E7 AXOS Release 3.0

**DIMENSIONS (W x H x L)**

14 x 10.1 x 0.78 Inches  
35.6 x 25.7 x 2 cm

**WEIGHT**

2 lbs. (1 Kg)

**PORTS**

4 XFP interfaces for 10G/10G,  
10G/2.5G PON Access  
Links (4 TWDM channels  
per card)  
4 XFP interfaces for  
10GE network uplink

**WAVELENGTH SUPPORT**

XGS-PON: 1577nm Down,  
1270  
nm Up  
NG-PON2: Up to 4  
TWDM wavelengths:  
1596-  
1599 Down, 1532-1535 Up [one  
wavelength pair per OLT  
port]

**SPLIT RATIO\***

XGS-PON: 1:128  
NG-PON2: 1:128  
(\*Refer to Calix PPG  
for engineering  
design guidelines)

**QUALITY OF SERVICE**

Service classification based  
on port, SVLAN-ID,  
CVLAN-ID,  
p-bit  
Strict priority and Weighted  
Round Robin (WRR)  
based scheduling with  
minimum bandwidth  
guarantees  
Congestion avoidance: Tail  
Drop

**STANDARDS AND RFC  
SUPPORT**

ITU-T G.989.2 a1 NG-PON2  
ITU-T XGS-PON  
ITU-T G.8032v2 Ethernet Ring  
Protection Switching  
(ERPS)  
TR-101 VLAN Service models  
IEEE 802.1p CoS  
Prioritization IEEE 802.1 MAC  
Bridges  
IEEE 802.1Q VLAN tagging  
IEEE 802.1ad VLAN  
stacking  
(Q-In-Q)  
support RFC 2236  
IGMP v2 RFC  
3376 IGMP v3  
RFC 3810 MLDv2  
RFC 3046 DHCP Relay Agent  
Information Option ("Option  
82")  
RFC 4541 IGMP Proxy  
RFC 4553 Structure-Agnostic  
Time Division Multiplexing  
(TDM) over Packet  
(SAToP)  
Dynamic Bandwidth Allocation  
(DBA)  
Advanced Encryption  
Standard (AES)  
Forward Error Correction (FEC)

**PACKET SWITCHING**

**CAPACITY**

9216 byte frames over NGPON2/  
XGS-PON  
4,096 VLANs per system  
4,096 IGMP Multicast channels

**SYNCHRONIZATION**

Integrated Stratum-3 reference  
Timing Options: BITs, Synch,  
1588v2 (TC, OC, BC)

**COMPLIANCE**

NEBS Level 3 compliance  
(GR-63-CORE, GR-  
1089- CORE, GR-  
3028)  
UL 60950  
FCC Part 15 Class  
A CE Mark

**POWER AND**

**HEAT**

**DISSIPATION**

NGPON2-4 power consumption:  
125 Watts (typical with  
optics)

**OPERATING ENVIRONMENT**

Temperature: -40° to +65° C  
(-40° F to +149° F)  
Humidity: 10 to 95%  
(non- condensing)

**STORAGE ENVIRONMENT**

Temperature: -40° to +85° C  
(-40° F to +185° F)  
Humidity: 5 to 95%





**NOTES**

For XGS-PON XFP, NG-PON2 XFP, and 10GE XFP, only products purchased directly from Calix are supported. The use of XGS-PON XFP, NG-PON2 XFP, and 10GE XFP pluggable transceivers not purchased directly from Calix is not supported and will void all product warranties covering the Calix equipment to which such third-party materials are connected.

**CALIX ONTs**

The AXOS E7-2 NGPON2-4 line cards support operation with the Next Generation GigaFamily of ONTs using fixed (XGS- PON) and tunable TWDM wavelengths.

**CALIX E7 LINE CARDS**

100-04636..... E7-2 NGPON2-4 (4x XGS-PON/NG-PON2 XFP, 4x 10GE XFP)

**CALIX PLUGGABLE TRANSCEIVER MODULES**

The E7-2 supports pluggable modules for all service and network interfaces. Refer to the Calix Optical Transceiver Modules Datasheet (#250-00191) for a complete list of modules and specifications.

XFP.....10GE optical Small Form-factor Pluggable (XFP) modules

XGS-GPON XFP .....10Gbps XGS-PON optical Small Form-factor Pluggable (XFP) modules

NG-PON2 XFP .....10Gbps NG-PON2 optical Small Form-factor Pluggable (XFP) modules (CO use only)



Looking to future-proof your next-generation XGS-PON / GPON network in preparation for launching advanced broadband services? As North America's most widely deployed access system, the Calix AXOS E7-2 Intelligent Modular System is a breakthrough evolutionary system that provides a transformational path to next generation networks, fiber technologies, and Software Defined Access. The E7-2 is the industry's benchmark for a modular, small form factor, environmentally hardened access solution for communications service providers (CSPs). Powered by the AXOS platform, the E7-2 is now even more of a disruptive and compelling enabler to next generation networks that connects everyone and everything. The AXOS E7-2 leads a rapidly expanding family of Intelligent Access EDGE systems capable of supporting both centralized and decentralized network architectures that range from the data center edge, central office, or headend, to the remote cabinet, or MDU.

### Functional Description

#### XGS-PON / GPON AND POINT-TO-POINT ETHERNET:

The Calix E7-2 AXOS XG801 card provides multi-service capability over IP/Ethernet based networks. Each XG801 provides eight selectable XGS-PON / GPON OLT ports that subtend up to 128 ONTs each, for a card capacity of 1,024 PON ONTs, or 2048 per E7-2 1RU chassis. An additional four 10GE SFP+ sockets per card can provide high-bandwidth, point-to-point Ethernet services to individual subscribers or be used to aggregate other Ethernet devices. Each port can be independently provisioned to support XGS-PON, GPON, or Ethernet connections. The Calix E7-2 XG801 card can co-exist with other Calix E7-2 AXOS line cards in a shelf.

## KEY ATTRIBUTES

XG801 card features and capabilities include:

- Based on ITU G.989 XGS-PON family of standards
- XGS-PON: 9.953 Gbps downstream, 9.953 Gbps upstream
- GPON: 2.488 Gbps downstream, 1.244 Gbps upstream
- GEM (Ethernet) based GPON
- Interoperable with Calix ONTs, including GigaFamily and Calix Next Generation 10GPON Residential SFUs, MDUs, and Business ONTs
- Class N1 +29 dB link budget, up to 1:128splits

- Class N2 +31 dB link budget, up to 1:128splits
- Class B+ ODN, +28 dB link budget, up to 20 km at 32-way splits
- Class C+ ODN, +32 dB link budget with Forward Error Correction (FEC), up to 35km at 32-way split, up to 60 km at 2-way split
- Integrated 100GE and 10GE aggregation and transport
- Hardened for central office and remote terminals

## INTEGRATED HIGH-CAPACITY AGGREGATION

The E7-2 AXOS XG801 card is built on a core Layer 2 and Layer 3 switch capable of full-duplex, line rate forwarding at all frame sizes and traffic types across all interfaces. Each XGS-PON OLT port has a dedicated 10Gbps switch interface. Industry standard pluggable modules are used for all interfaces, including ITU G.989 XGS-PON and G.984 compliant GPON, GE, 10GE SFP+, and QSFP-DD 100GE. The XG801 supports (2) QSFPDD sockets supporting QSFP28 100GE optical modules and QSFP-DD Point-to-Point and Point-to-Multipoint Direct Attach cables. The XG801 also provides (4) SFP+ modules that are mechanically compatible with the industry-ubiquitous SFP module. Each SFP+ interface supports 10GE/1GE modules as well as Direct Attach copper cables.

## IP SERVICES DELIVERY

The Calix E7-2 AXOS XG801 card delivers a full spectrum of IP access services over XGSPON, GPON and Point-to-Point Ethernet networks.

- Secure AES encryption on the PON
- IPTV – broadcast and Video on Demand (VoD)

- MEF compliant business services
- High-Speed Internet (HSI) access
- Voice – Native SIP/VoIP and TDM Gateway support
- T1 services
- CATV: 1550nm RF video overlay; 1610nmRF return

## NETWORK RESILIENCY

All Calix E7-2 AXOS XG801 cards support a flexible set of standards-based network topology protocols for use in aggregation, ring-based transport, and uplink.

- ITU G.8032 Ethernet Ring Protection Switching (ERPS)
- ITU G.8032v2 Ethernet Ring Protection Switching (ERPS)
- IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE 802.3ad/802.1AX Link Aggregation
- ITU G.983.5 - Type B Protection and enhanced survivability for XGS-PON and GPON OLTs

## MOBILE BACKHAUL

With integrated network synchronization, hierarchical QoS and support for T1 services, the E7-2 AXOS XG801 card enables transport of uncompromised mobile broadband traffic while also supporting triple play residential and MEF certified business services from a single platform. A powerful collection of classification, policing, and scheduling algorithms let CSPs manage per-subscriber and per-service traffic flows to maintain priority/delay/loss service differentiation within the E7 network.

## SCALABLE IPTV SUPPORT

The E7 supports industry standard IGMP snooping to identify and replicate multicast video sent between the set-top box and the video distribution network, thus providing efficient, scalable, high-quality IPTV distribution on both GPON and Ethernet interfaces.

## SPECIFICATIONS

### Minimum System Requirements

- Calix AXOS Software Release 21.2

### Dimensions (W x H x L)

- Height: 14 in (35.6 cm)
- Width: 10.1 in (25.7 cm)
- Depth: 0.78 in (2 cm)
- Weight: 2.08 lbs (0.94 kg)

### Ports

- 8 SFP ports supporting selectable
- XGS-PON / GPON optical modules
- 4 SFP+ ports supporting 10GE, 2.5GE, and GE optical modules
- 2 QSFP-DD ports supporting
- 40GE/100GE optical modules

### Packet Switching Capacity

- Wire speed forwarding across all
- Ethernet and XGS-PON / GPON
- OLT ports
- 64,000 MAC addresses per system
- 9,000 byte jumbo frames
- 2,000 byte frames over GPON
- 4,096 VLANs
- 4,000 IGMP Multicast channels

### Quality of Service

- Service classification based on port, SVLAN-ID, CVLAN-ID, P-Bit
- Port and flow-based policing to 1Mbps increments
- 8 CoS queues per port
- Strict priority scheduling with minimum bandwidth guarantee
- Congestion avoidance: Tail Drop

### Standards and RFC Support

- TR101 VLAN Service models
- IEEE802.1ag Connectivity Fault Management (G.8032 support)
- IEEE 802.1D Rapid Spanning Tree
- IEEE 802.1p CoS Prioritization
- IEEE 802.1 MAC Bridges
- IEEE 802.1Q VLAN tagging
- IEEE 802.1ad VLAN stacking (Q-in-Q) support
- IEEE 802.1w RSTPIEEE 802.3ad/802.1AX
- Link Aggregation
- RFC 2236 IGMP v2
- RFC 3376 IGMP v3
- RFC 3046 DHCP Relay Agent Information Option ("Option 82")
- RFC 4541 IGMP snooping
- RFC 4553 Structure-Agnostic Time Division Multiplexing (TDM) over Packet (SAToP)
- ITU-T G.8032 Ethernet Ring Protection Switching (ERPS)/ Enhanced EAPS
- ITU-T G.8032v2 Ethernet Ring Protection Switching (ERPS)
- ITU-T G.989 XGS-PON
- ITU-T G.984 GPON
- ITU G.984.1 Type B Protection
- Dynamic Bandwidth Assignment (DBA)
- NIST Advanced Encryption Standard (AES)

### Synchronization

- Synchronization enabled by E7 line cards
- External reference timing
- Built-in Stratum-3 clock
- Hardware-ready to support Synchronous Ethernet, IEEE 1588v2

### Compliance

- NEBS Level 3 compliance (GR-63-CORE, GR-1089-CORE, GR-3028)
- UL 62368 FCC Part 15 Class A
- CE Mark

### Operating Environment

- Temperature: -40° to +65° C (-40° F to +149° F)
- Humidity: 10 to 95% (noncondensing)

### Storage Environment

- Temperature: -40° to +85° C (-40° F to +185° F)
- Humidity: 5 to 95%

Notes: For AXOS XGS-PON OIM and GPON OIM transceivers purchased directly from Calix are supported. The use of OIM pluggable transceivers not purchased directly from Calix is not supported and will void all product warranties covering the Calix equipment to which such third-party materials are connected.

- Only AXOS XGS-PON and GPON OIMs are supported by the E7-2 AXOS XG801 card
- SFP modules may also be used in SFP+ sockets at 1GE rate.
- 100GE optical modules used in QSFP-DD sockets may be provisioned to operate at either 100Gbps or 40Gbps rates.
- Copper Direct Attach cables can operate in SFP and SFP+ sockets at 1GE and 10GE data rates as supported by the card type.
- Copper Direct Attach cables can operate in QSFP-DD sockets at 100GE and 10GE data rates as supported by the card type.

Calix ONTs

The E7-2 AXOS XG801 card supports the Calix family of ONTs, including 700GX, 700GE, 836GE, as well as the 800G GigaFamily. 10G PON ONTs are also supported, including the GP1000X, GP1100X, GH3200X, and GPR3000X ONTs.

Calix ONTs support auto sensing GPON and GE network interfaces, allowing service providers to manage service changes without subscriber onsite technical support.

Calix E7-2 AXOS Line Cards

**100-05529**..... E7-2 AXOS XG801 (8x XGS-PON/GPON OIM, 4x 10GE SFP+, 2x 100GE QSFP-DD)

Calix Pluggable Transceiver Modules

The E7-2 supports pluggable modules for all service and network interfaces.

Refer to the Calix Optical Transceiver Modules Datasheet (#250-00191) for a complete list of modules and specifications.

**SFP**..... 1GE and 2.5GE optical and copper Small Form-factor Pluggable (SFP) modules

**SFP+**..... 10GE optical Enhanced Small Form-factor Pluggable (SFP+) modules

**Direct Attach**..... Multi-rate copper Small Form-factor Pluggable (SFP/SFP+) cables

AXOS XGS-PON / GPON

**B+ OIM**..... 2.5Gbps GPON (Class B+, 20km, C-Temp, AXOS) 2.5Gbps GPON (Class B+, 20km, I-Temp, AXOS)AXOS GPON

**C+ OIM**..... 2.5Gbps GPON (Class C+, 60Km, I-Temp, AXOS)

**N1 OIM**.....10Gbps XGS-PON (Class N1, 20km, I-Temp, AXOS)

**N2 OIM**.....10Gbps XGS-PON (Class N2, 20km, I-Temp, AXOS)

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**GigaSpire®**  
**BLAST u6.1**



The Calix GigaSpire® BLAST® u6.1 (GS4220E) is a new generation smart home system that extends the access network into the home and acts as a strategic location for control of the ultimate Wi-Fi experience. Besides supporting broadband connectivity of data and video services, this intelligent, high-performance system offers the latest 802.11ax 'Wi-Fi 6' technology. The GigaSpire BLAST u6.1 provides switching and routing functions that support multi-Gigabit throughput for IPTV video and data services.

## MULTI-GIGABIT SUBSCRIBER EXPERIENCE

The GigaSpire BLAST u6.1 is a premium smart home system that delivers the latest 'Wi-Fi 6' certified technology (802.11ax). The GigaSpire BLAST u6.1 uses a 1 Gigabit Ethernet link at the subscriber's premises to provide carrier-class Wi-Fi and four (4) Gigabit Ethernet interfaces for customer multi-media devices. The GigaSpire BLAST u6.1 enables residential subscribers to receive Gigabit broadband data, Internet Protocol (IP) video, and voice

(POTS) services. Using the latest 802.11ax technology in both the 2.4 and 5 GHz radios, the GigaSpire BLAST u6.1 incorporates 6x6 streams of Wi-Fi delivery (2x2 @ 2.4 GHz and 4x4 @ 5 GHz). In addition, with multi-user multiple-input and multiple-output (MU-MIMO) and beamforming, the GigaSpire BLAST u6.1 allows service providers to extend the access network inside the home and establish a strategic location for the delivery and control of broadband services.

With Wi-Fi being the de facto wireless data communication technology of choice for consumers, Calix engineered the GigaSpire BLAST u6.1 for optimal whole-home coverage with simultaneous dual-band 2.4 GHz and 5 GHz operation and dynamic beamforming at 5 GHz. Leveraging the latest Wi-Fi 6 features, the GigaSpire BLAST u6.1 provides longer range, higher efficiency and less interference compared to earlier generations of Wi-Fi technology. The GigaSpire BLAST u6.1 also supports the entire 5 GHz band, including Dynamic Frequency Selection (DFS) channels and can be provisioned to support 160 MHz channel bandwidth at 5 GHz. The GigaSpire BLAST u6.1 easily delivers HD and UHD (ultra-HD) video and data throughout a subscriber's home in an increasingly video-rich and mobile broadband environment.

Ensuring consumers can have ultra-fast Wi-Fi throughout their premises, the GigaSpire BLAST u6.1 provides the latest generation of redundant mesh via the Calix Mesh

BLAST u4m (GM1028) (please see the GM1028 data sheet for more information). With the GigaSpire BLAST u6.1 as the hub, and the BLAST u4m as the satellite extenders, consumers can truly gain the whole home/smart home experience. For even higher mesh performance, GigaSpire BLAST u6.1 can also be a mesh unit. This means that two GigaSpire BLAST u6.1 systems can connect to each other with one being the residential gateway and the other being the satellite.

## EASY TO INSTALL, ACTIVATE, AND MAINTAIN

With the GigaSpire BLAST u6.1, Calix has redefined how to install and activate residential services at a subscriber's premises. Using the CommandIQ® mobile app and a phone

or laptop, a field technician can install and apply the subscriber's service profile without special equipment or assistance from the central office. Calix also provides the innovative Calix Support Cloud (CSC), which allows the service provider to configure, activate

and upgrade the GigaSpire BLAST u6.1 quickly from a remote location using in-band management or TR-069. Extensive troubleshooting capabilities, remote software downloads, and easy-to-use service activation features ensure that services are delivered and maintained without needless truck rolls and hardware upgrades. Employing GigaSpire BLAST u6.1 systems allows service providers to reduce their operational expenses while effectively delivering the Gigabit experience to their subscribers.



## CALIX EXPERIENCE INNOVATION PLATFORM

All GigaSpire BLAST systems are powered by the Calix Innovation Experience Platform.

This container-based platform allows service providers to quickly change and adapt their services to embrace new technologies and offer new, value-added services. This approach can generate recurring revenue and increase subscriber satisfaction.

## KEY ATTRIBUTES

### Home Gateway:

- Layer 2 bridge and Layer 3 routing for High Speed Internet (HSI) data and IPTV video services
- DHCP server options
- DHCP (IPoE) and PPPoE network connections
- Network Access Translation (NAT), public to private IP addressing
- Configurable IP address schemes, subnets, static-IP addresses
- DNS server
- Bridge port assignment and data traffic mappings
- Port forwarding
- Firewall and security
- Application and website filtering
- Selectable forwarding and blocking policies
- DMZ hosting
- Parental controls, time of day usage
- Denial of service (DoS) protection
- MAC filtering
- Time/Zone support
- Universal Plug-and-Play (UPnP)

### Wi-Fi:

- 2.4 GHz and 5 GHz, simultaneous dual-band
- 5 GHz 802.11ax (Wi-Fi 6) certified, 802.11a/n/ac compatible
- 6x6 streams (2x2 @ 2.4 GHz and 4x4 @ 5 GHz)
- 2.4 GHz 802.11ax (Wi-Fi 6) certified, 802.11b/g/ac compatible

- WPA/WPA2/WPA3; WEP 64/128 bit encryption
- PuF (Physical Unclonable Functions)
- WPS push-button
- 4x4 DL/UL MU-MIMO with beamforming (5 GHz radio)
- 2x2 DL/UL MU-MIMO with beamforming (2.4 GHz radio)
- 1024 QAM; OFDMA; BSS Coloring
- DCM (Dual Carrier Modulation)
- TWT (Target Wake Time) for IoT clients

### Wi-Fi Redundant Mesh:

- Self Managed: self configuration, Air time fairness
- Dynamic Mesh: load balancing, band/node steering; interference management
- Self Healing: backhaul failover; diagnostics; events

### 1 Gigabit Ethernet (GE) WAN interface:

- Multi-rate 100/1000/2500 BASE-T Ethernet, auto-negotiating

### Gigabit Ethernet (GE) LAN interfaces:

- Four (4) ports of multi-rate 10/100/1000 BASE-T Ethernet, auto-negotiating for residential IPTV and data services

### Two voice lines:

- Carrier grade SIP, H.248 (aka Megaco) and MGCP<sup>1</sup>

### USB port:

- USB 2.0 - Type A host interface

Supports multiple data service profiles

### Traffic management and Quality of Service (QoS):

- 802.1Q VLANs
- 802.1p service prioritization
- Q-in-Q tagging
- Multiple VLANs
- DiffServ
- Pre-defined QoS on service type
- LAG of GE ports
- MAP-T

### IPTV, IGMPv2, future support of IGMPv3:

- IGMP Snooping and Proxy
- IGMP Fast Leaves

### Gateway Management:

- CSC (Calix Support Cloud)
- TR-069
- Local Home Gateway GUI, access provisionable
- Remote WAN side GUI access
- Default username/password

AC to 12 V DV power adapter

<sup>1</sup> Currently supporting MetaSwitch and Ribbon softswitches

## SPECIFICATIONS

### Dimensions

- Width: 4.75 in (12.1 cm)
- Height: 8.5 in (21.6 cm)
- Depth: 4.75 in (12.1 cm)
- Weight: 36 oz (1.02 kg)

### WAN Interface

- Interface: One 2.5 Gigabit-Ethernet Port, RJ-45 connector

### Interfaces

- Wireless: 2.4 GHz 2x2 and 5 GHz 4x4 internal antennas
- LAN Data/IPTV: Four (4) 10/100/1000 BASE-T Ethernet port, RJ 45 connectors
- WAN: One (1) 10/100/1000/2500
- USB: USB 3.0 Type A
- Voice: Two ports supporting carrier grade SIP, H.248 (aka Megaco) and MGCP
- Power: Single pin and 8-pin

### Data

- Drop length: 328 feet (100 m) max using CAT5 cable for GigE
- Auto MDI/MDIX crossover for 1000BASE-TX, 100BASE-TX
- Traffic Management and QoS: 802.11Q VLAN; 802.11p voice, video, data and management priorities; Q-in-Q tagging

### Wireless

- 2.4 GHz 802.11 b/g/n/ac/ax
- 5 GHz 802.11 a/n/ac/ax
- 4x4 DL/UL MU-MIMO, implicit/explicit high-power, dynamic beamforming (5 GHz radio)
- 2x2 DL/UL MU-MIMO implicit/explicit high-power, dynamic beamforming (2.4 GHz radio)
- 2.4 GHz and 5 GHz simultaneous
- DCM, TWT, extended GI
- Auto channel selecting and interference detection
- WPS, WPS push button
- Wi-Fi multimedia (WMM)
- Supports up to 250 wireless clients

### Remote Management

- TR-069 remote management
- TR-098 Internet Gateway Device Data Model

### Environmental

- Operating temperature: Indoor ambient temperature, 0° to 40°C (32° to 104° F)
- Operating and storage relative humidity: 10 to 90 % and 5 to 95% non-condensing respectively

### Certification and Compliance

- Emissions: FCC Part 15 Class B IC ICES-003 Class B CISPR-22
- Safety: UL 60950 and UL 1697 approved
- IEEE: 802.3, 802.3AB, 802.3U, 802.11p, 802.11Q
- Wi-Fi Alliance Certified 802.11ax



- USB-IF Compliance USB 2.0



### Powering and Alarms

- Single pin and 8-pin
- Input voltage: 12 V DC (nominal)
- External Power Adapter: 12 V DC, 3A

### Ookla-based Performance Testing

- Subscribers can run an Ookla-based performance test from within the Calix CommandIQ® mobile app
- Symmetrical speed test results in excess of 2 Gbps are possible with the GigaSpire BLAST u6.1 system (owing to the 1 GigE WAN port)

## ORDERING INFORMATION

Calix GS4220E GigaSpire BLAST u6.1

**100-01175**..... GS4220E GigaSpire BLAST u6.1, 1 GE WAN, 4 GE LAN, 2 POTS,  
Dual Wi-Fi – AM Power Adapter

Calix GS4220E GigaSpire BLAST u6.1 Power Adapter

**100-05484**..... GigaSpire BLAST u6.1/u6.2 (GS4220E/GS4227E) Power Adapter, 12 V, 3 A – AM Type A

Optional Mounting Bracket

**100-05467**..... GS4227E/GS4220E Mounting Bracket — Quantity 10

Optional Uninterruptible Power Supply (UPS)

**100-04068**..... Indoor UPS (8 hour support), Wall Mount or Desktop, 12 V, 7.2 AH, 36 W, Black - AM,  
Type B, Grounded

**100-05345**..... Indoor UPS (24 hour support), Wall Mount or Desktop, 12 V, 20AH, 75W, Audible Alarm,  
Regulated Output R3 Production

UPS Power Adapters

**100-03893**..... Indoor UPS Power cord, 7-pin UPS to 8-pin ONT Male, 1m, black

**100-03894**..... Indoor UPS Power cord, 7-pin UPS to 8-pin ONT Male, 3m, black

**100-03895**..... Indoor UPS Power cord, Unterminated to 8-pin ONT Male, 6m, black

Removeable Branding Plate

**100-05522**..... Blank, removable branding plate. Contact your sales representative to order branding  
plates that can be customized with your company logo

Note: Calix believes the information in this publication to be accurate as of publication date, and is not responsible for error.  
Product Specifications are subject to change without notice.



The Calix GigaSpire® u6x (GS4227) is a new generation smart home system that integrates optical network termination (ONT) and residential gateway functionality into a single system\*. It supports virtually any passive optical network (PON) and Ethernet technology, while providing the ultimate Wi-Fi experience. Besides supporting broadband connectivity of data and video services, this intelligent, high-performance system offers the latest 802.11ax 'Wi-Fi 6' technology. The GigaSpire BLAST u6x provides switching and routing functions that support multi-Gigabit throughput for IPTV video and data services.

Note: A white form factor is also available, called the GS4227W.

## MULTI-GIGABIT SUBSCRIBER EXPERIENCE

The GigaSpire BLAST u6x is a premium smart home integrated system that delivers the latest Wi-Fi 6 certified technology (802.11ax). The GigaSpire BLAST u6x uses an SFP+ cage supporting a 10 Gigabit link\* at the subscriber's premises to provide carrier-class WAN, including GPON and XGS PON, as well as 1 and 10 Gigabit Ethernet (both copper and Active Ethernet) options. On the LAN side, Wi-Fi and four (4) Gigabit Ethernet interfaces are available for customer multi-media devices.

The GigaSpire BLAST u6x enables residential subscribers to receive Gigabit broadband data, Internet Protocol (IP) video, and voice (POTS) services. Using the latest 802.11ax technology in both the 2.4 and 5 GHz radios, the GigaSpire BLAST u6x incorporates 6x6 streams of Wi-Fi delivery (2x2 @ 2.4 GHz and 4x4 @ 5 GHz). In addition, with multi-user multiple-input and multiple-output (MU-MIMO) and beamforming, the GigaSpire BLAST u6x allows service providers to extend the access network inside the home and establish a strategic location for the delivery and control of broadband services. With Wi-Fi being the de facto wireless data communication technology of choice for consumers, Calix engineered the GigaSpire BLAST u6x for optimal whole-home coverage with simultaneous dual-band 2.4 GHz and 5 GHz operation and dynamic beamforming in both spectrums.

Leveraging the latest Wi-Fi 6 features, the GigaSpire BLAST u6x provides longer range, higher efficiency, and less interference compared to earlier generations of Wi-Fi technology. The GigaSpire BLAST u6x also supports the entire 5 GHz band, including Dynamic Frequency Selection (DFS) channels and can be provisioned to support 160 MHz channel bandwidth at 5 GHz. The GigaSpire BLAST u6x easily delivers HD and UHD (ultra-HD) video and data throughout a subscriber's

home in an increasingly video-rich and mobile broadband environment. Ensuring consumers can have ultra-fast Wi-Fi throughout their premises, the GigaSpire BLAST u6x provides the latest generation of redundant Wi-Fi 6 mesh via the Calix GigaSpire Mesh GigaSpire BLAST u4m (please see the GM1028 data sheet for more information). With the GigaSpire BLAST u6x as the hub, and the Mesh GigaSpire BLAST u4m as the satellite extenders, consumers can truly gain the whole home/smart home experience. For even higher mesh performance, an additional GigaSpire BLAST u6 system, such as the GigaSpire BLAST u6.1, can also be deployed as a mesh unit. This means that two GigaSpire BLAST u6 systems can connect to each other with one being the residential gateway and the other being the mesh.

## EASY TO INSTALL, ACTIVATE, AND MAINTAIN

With the GigaSpire BLAST u6x integrated system, Calix has redefined how to install and activate residential services at a subscriber's premises. Using CommandIQ® and a phone or laptop, a field technician can install and apply the subscriber's service profile without special equipment or assistance from the central office. Calix also provides the innovative Calix Support Cloud (CSC), which allows the service provider to configure, activate and upgrade the GigaSpire BLAST u6x quickly from a remote location using in-band management, TR-069, or ONT Management Control Interface (OMCI).

Extensive troubleshooting capabilities, remote software downloads, and easy-to-use service activation features ensure that services are delivered and maintained without needless truck rolls and hardware upgrades. Deploying GigaSpire BLAST u6x systems allows service providers to reduce their operational expenses while effectively delivering

Note: XGS PON technology, although referred to as "10 Gig PON" is limited to a maximum symmetrical throughput of approximately 8.5 Gbps, owing to various overhead limitations and network conditions.

the Gigabit experience to their subscribers. If a PON module is being used, PON configuration and management is done via the OMCI protocol.

## **CALIX EXPERIENCE INNOVATION PLATFORM**

All GigaSpire BLAST systems are powered by the Calix Innovation Experience Platform.

This container-based platform allows service providers to quickly change and adapt their services to embrace new technologies and offer new, value-added services. This approach can generate recurring revenue and increase subscriber satisfaction.

## KEY ATTRIBUTES

### Home Gateway:

- Layer 2 bridge and Layer 3 routing for High Speed Internet (HSI) data and IPTV video services
- DHCP server options
- DHCP (IPoE) and PPPoE network connections
- Network Access Translation (NAT), public to private IP addressing
- Configurable IP address schemes, subnets, static-IP addresses
- DNS server
- Bridge port assignment and data traffic mappings
- Port forwarding
- Firewall and security
- Application and website filtering
- Selectable forwarding and blocking policies
- DMZ hosting
- Parental controls, time of day usage
- Denial of service (DoS) protection
- MAC filtering
- Time/Zone support
- Universal Plug-and-Play (UPnP)

### Wi-Fi:

- 2.4 GHz and 5 GHz, simultaneous dual-band
- 5 GHz 802.11ax (Wi-Fi 6) certified, 802.11a/n/ac compatible
- 6x6 streams (2x2 @ 2.4 GHz and 4x4 @ 5 GHz)
- 2.4 GHz 802.11ax (Wi-Fi 6) certified, 802.11b/g/ac compatible

- WPA/WPA2/WPA3; WEP 64/128 bit encryption
- PuF (Physical Unclonable Functions)
- WPS push-button
- 4x4 DL/UL MU-MIMO with beamforming
- 1024 QAM; OFDMA; BSS Coloring
- DCM (Dual Carrier Modulation)
- TWT (Target Wake Time) for IoT clients

### Wi-Fi Redundant Mesh:

- Self Managed: self configuration, Air time fairness
- Dynamic Mesh: load balancing, band/node steering; interference management
- Self Healing: backhaul failover; diagnostics; events

### SFP + interface:

- Full 10 Gigabit bandwidth
- Supporting several SFP WAN modules, including: GPON, 1 Gigabit Ethernet (copper) and 10 Gigabit Ethernet (copper), XGS (future release), 1G and 10G Active Ethernet (future release)

### Gigabit Ethernet (GE)

#### LAN interfaces:

- Four (4) ports of multi-rate 10/100/1000 BASE-T Ethernet, auto-negotiating for residential IPTV and data services

#### Two voice lines:

- Carrier grade SIP, H.248 (aka Megaco) and MGCP<sup>1</sup>

### USB port:

- USB 2.0 - Type A host interface

Supports multiple data service profiles

### Traffic management and Quality of Service (QoS):

- 802.1Q VLANs
- 802.1p service prioritization
- Q-in-Q tagging
- Multiple VLANs
- DiffServ
- Pre-defined QoS on service type
- LAG of GE ports
- MAP-T

IPTV, IGMPv2, future support of IGMPv3:

- IGMP Snooping and Proxy
- IGMP Fast Leaves

### Gateway Management:

- CSC (Calix Support Cloud)
- TR-069
- Local Home Gateway GUI, access provisionable
- Remote WAN side GUI access
- Default username/password

AC to 12 V DV power adapter

Optional UPS power unit available

<sup>1</sup> Currently supporting MetaSwitch and Ribbon softswitches



## SPECIFICATIONS

### Dimensions

- Width: 4.9 in (12.2 cm)
- Height: 9.9 in (25.2 cm)
- Depth: 4.9 in (12.2 cm)
- Weight: 41 oz (1.16 kg)

### WAN Interface

- Interface: SFP+ cage (with options for GPON, 1 GBT, 10 GBT, XGS, and Active Ethernet)

### Interfaces

- Wireless: 2.4 GHz 2x2 and 5 GHz 4x4 internal antennas
- LAN Data/IPTV: Four (4) 10/100/1000 BASE-T Ethernet port, RJ 45 connectors
- WAN: SFP+ cage
- USB: USB 2.0 Type A
- Voice: Two ports supporting Metaswitch; C15; C20 SIP; H.248 and MGCP
- Power: Single pin and 8-pin

### Data

- Drop length: 328 feet (100 m) max using CAT5 cable for GigE
- Auto MDI/MDIX crossover for 1000BASE-TX, 100BASE-TX
- 10GBT: 110 feet (30m) CAT6e/7 cable
- Traffic Management and QoS: 802.11Q VLAN; 802.11p voice, video, data and management priorities; Q-in-Q tagging

### Wireless

- 2.4 GHz 802.11 b/g/n/ac/ax
- 2x2 UL/DL MU-MIMO
- 5 GHz 802.11 a/n/ac/ax
- 4x4 DL/UL MU-MIMO, implicit/explicit high-power, dynamic beamforming (5 GHz radio)
- 2x2 DL/UL MU-MIMO implicit/explicit high-power, dynamic beamforming (2.4 GHz radio)
- 2.4 GHz and 5 GHz simultaneous
- DCM, TWT, extended GI
- Auto channel selecting and interference detection
- WPS, WPS push button
- Wi-Fi multimedia (WMM)

### Remote Management

- TR-069 remote management
- TR-098 Internet Gateway Device Data Model

### Environmental

- Operating temperature: Indoor ambient temperature, 0° to 40°C (32° to 104° F)
- Operating and storage relative humidity: 10 to 90 % and 5 to 95% non-condensing respectively

### Certification and Compliance

- Emissions: FCC Part 15 Class B IC ICES-003 Class B CISPR-22
- Safety: UL 60950 and UL 1697 approved
- IEEE: 802.3, 802.3AB, 802.3U, 802.11p, 802.11Q
- Wi-Fi Alliance Certified 802.11ax



- USB-IF Compliance USB 2.0



### Powering and Alarms

- Single pin and 8-pin
- Input voltage: 12 V DC (nominal)
- External Power Adapter: 12 V DC, 3A
- Optional UPS power unit available

### Ookla-based Performance Testing

- Subscribers can run an Ookla-based performance test from within the Calix CommandIQ® mobile app
- Symmetrical speed test results in excess of 2 Gbps are possible with the GigaSpire BLAST u6x system (when a 10 GigE or GPON SFP module is activated)

## ORDERING INFORMATION

### Calix GS4227 GigaSpire BLAST u6x

**100-05603**..... GS4227 GigaSpire BLAST u6x , SFP+, 4 GE LAN, 2 POTS,  
Dual Wi-Fi – AM Power Adapter

### Calix GS4227 GigaSpire BLAST u6x Bundles

**000-01201**..... GS4227 GigaSpire BLAST u6x , SFP+, 4 GE LAN, 2 POTS,  
Dual Wi-Fi – AM Power Adapter (with GPON SFP module)

**000-01202**..... GS4227 GigaSpire BLAST u6x , SFP+, 4 GE LAN, 2 POTS,  
Dual Wi-Fi – AM Power Adapter (with XGS SFP module; future release)

**000-01207**..... GS4227 GigaSpire BLAST u6x , SFP+, 4 GE LAN, 2 POTS,  
Dual Wi-Fi – AM Power Adapter (with Active Ethernet SFP module; future release)

### Calix GS4227 GigaSpire BLAST u6x SFP Modules

**100-05609**..... GPON ONT SFP module

**100-05656**..... 1GE SFP, UTP Copper, RJ-45, 100m, I-Temp

**100-05622**..... 10GE SFP+, UTP Copper, RJ-45, 100m, I-Temp

**100-05610**..... XGS ONT SFP+ module (future release)

**100-05620**..... 1 Gigabit Active Ethernet SFP module (future release)

**100-05721**..... 10GE BIDI SFP+, Single Mode single fiber Upstream transceiver, 20Km, 1330nm,  
SC/APC, I-Temp (future release)

### Calix GS4227 GigaSpire BLAST u6x Power Adapter

**100-05484**..... GigaSpire BLAST u6.1/u6.2/u6x (GS4220E/GS4227E/GS4227)  
Power Adapter, 12 V, 3 A – AM Type A

### Optional Mounting Bracket

**100-05467**..... GS4227E/GS4220E Mounting Bracket — Quantity 10

### Optional Uninterruptible Power Supply (UPS)

**100-04068**..... Indoor UPS (8 hour support), Wall Mount or Desktop, 12 V, 7.2 AH, 36 W, Black – AM,  
Type B, Grounded

**100-05345**..... Indoor UPS (24 hour support), Wall Mount or Desktop, 12 V, 20 AH, 75 W, Audible Alarm,  
Regulated Output R3 Production

## ORDERING INFORMATION

### UPS Power Adapters

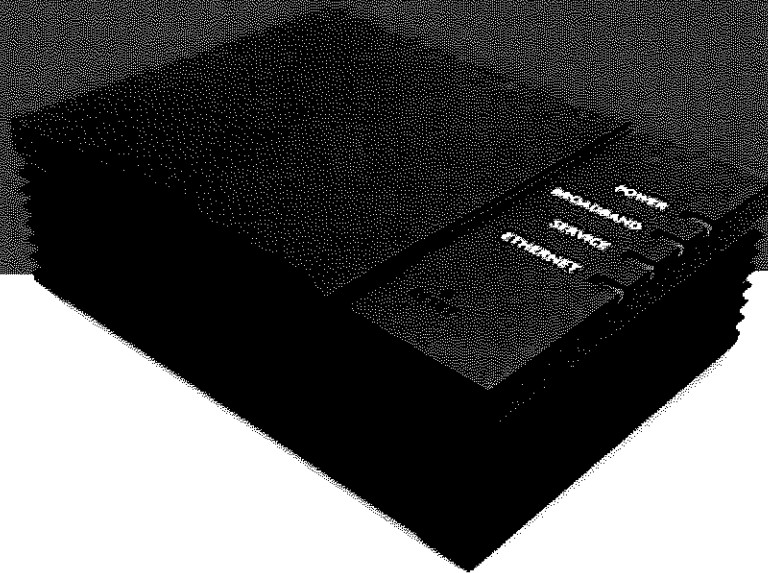
- 100-03893**..... Indoor UPS Power cord, 7-pin UPS to 8-pin ONT Male, 1m, black
- 100-03894**..... Indoor UPS Power cord, 7-pin UPS to 8-pin ONT Male, 3m, black
- 100-03895**..... Indoor UPS Power cord, Unterminated to 8-pin ONT Male, 6m, black

### Removeable Branding Plate

- 100-05522**..... Blank, removable branding plate. Contact your sales representative to order branding plates that can be customized with your company logo

Note: Calix believes the information in this publication to be accurate as of publication date, and is not responsible for error. Product Specifications are subject to change without notice.

# 803G GigaPoint<sup>®</sup> (Version 1)



The Calix 803G GigaPoint<sup>®</sup> is an indoor, 2.5 Gbps GPON small form factor service delivery terminal that provides broadband connectivity to the subscriber. This high-performance terminal features one Gigabit Ethernet (GE) interface delivering IPTV video and data services, and voice line supporting carrier grade VoIP and network-based TDM voice circuits. Connecting a Calix GigaCenter (844E) to the LAN port of the 803G allows for the delivery of a sensational Wi-Fi experience to your subscribers. Decoupling the broadband demarcation from the premises system provides more flexibility and reduces costs. The 803G GigaPoint is designed for the industry-leading Calix E-Series fiber access GPON optical line terminals (OLTs).

## EASY TO INSTALL, ACTIVATE, AND MAINTAIN

With the 803G GigaPoint, Calix has redefined how to install and activate residential services at a subscriber's premises. Using the Calix Smart Activate feature and a phone or laptop, a field technician can install and apply the subscriber's service profile without special equipment or assistance from the central office. Calix also provides an innovative software portfolio, including management via CMS and Calix Support Cloud (CSC) enabling the service provider to configure, activate and upgrade the GigaPoint using in-band management.

Extensive troubleshooting capabilities, remote software downloads, and easy-to-use service activation ensures that services are delivered and maintained without needless truck rolls and hardware upgrades. Employing the 803G GigaPoint allows service providers to reduce their operational expenses while effectively delivering the Gigabit experience to their subscribers.

## KEY ATTRIBUTES

Standards-based Full Service Access Network (FSAN), ITU-T GPON compliant

One Gigabit Ethernet (GE) interface

- Symmetrical 1 Gbps bandwidth for residential IPTV and data services
- Multi-rate 10/100/1000 BASE-T Ethernet, auto-negotiating

One voice line

- FXS ports, ANSI or ETSI
- Carrier grade SIP, H.248, MGCP VoIP
- TDM GR-303/TR-08 Mode II/ GR-57, GR-08 (TR-08 Mode I) voice services

Supports multiple data service profiles

Traffic management and Quality of Service (QoS)

- 802.1Q VLANs
- 802.1p service prioritization
- Q-in-Q tagging
- Multiple VLANs
- Rate limiting
- DiffServ
- Pre-defined QoS on service type

IPTV, IGMPv2, IGMPv3

- IGMP Snooping and Proxy
- IGMP Fast Leaves

Complete OAM&P support via Calix Management System (CMS)

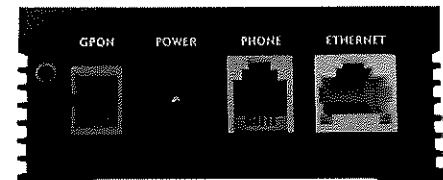
Calix Support Cloud (CSC)

Indoor mounting options

- Wall Mount or Structured Wiring Enclosure (SWE) mount with fiber management
- Desktop mount: horizontal or vertical

AC to 12 V DC power adapter available for non-lifeline services

Optional uninterruptible power supply (UPS) for voice lifeline service power



## SPECIFICATIONS

### Dimensions

- Width: 3.0 in (7.6 cm)
- Height: 4.0 in (10.2 cm)
- Depth: 1.25 in (3.2 cm)
- Weight: 4 oz (0.1 kg)

### PON Characteristics

- Max. split: 64 GPON
- Max. reach: 58 km (36 miles) with C+/FEC
- Maximum Optical Distribution Network (ODN) Attenuation: GPON Class B+, 28 dB GPON Class C+, 32 dB
- 1490 ± 10 nm optical receiver: -27.0 to -8.0 dBm (Class B+); -30.0 to -8.0 dBm (Class C+ with FEC)
- 1310 ± 20 nm optical transmitter: 0.5 to 5.0 dBm

### Interfaces

- Data/IPTV: One 10/100/1000 BASE-T: Ethernet port, RJ-45 connector
- Telephony: One RJ-11 connector
- PON: Single 9/125 μm (single mode) fiber, SC/APC connector, minimum 50 dB return loss
- Power: 2-pin connector

### Telephony

- General: SIP, H.248, MGCP or TDM Gateway (GR-303, GR-57, TR-08 Mode I, TR-08 Mode II)
- Number of lines: 1
- RENs: 5 maximum
- Drop length: Maximum 500 feet (152.4 m)
- DS0 Output: 23.5 mA
- Ring Voltage: 56–84 V AC

### Data

- Drop length: 328 feet (100 m) maximum, using CAT6 or CAT6A cable
- Auto MDI/MDIX crossover for 1000BASE-TX, 100BASE-TX, and 10BASE-T ports
- Traffic Management and QoS: 802.1Q VLAN; 802.1p Video, Data and Management Priorities; Q-in-Q tagging; Per-Port Rate Shaping; Rate Limiting

### Environmental

- Operating temperature: Indoor ambient temperature, 0° to 40°C (32° to 104° F)
- Relative humidity (non-condensing): Operating/Storage: 8% to 90%

### Certification and Compliance

- Emissions: FCC Part 15 Class B, IC ICES-003 Class B, CISPR-22
- Safety: UL 60950 and UL 1697 approved
- IEEE: 802.3, 802.3AB, 802.3U, 802.11p, 802.11Q

### Powering and Alarms

- 2-pin connector
- Input voltage: 12 V DC (nominal), 10 V DC (min), 15 V DC (max)
- External Power Adapter: 12 V DC, 1.5 A
- Typical Power: 3.5 W, Peak Power: 7 W
- Battery backup time rated capacity: 8 hours based on Telcordia GR-909 calculation methods using recommended UPS. Contact Calix for recommended UPS.

## ORDERING INFORMATION

### Calix 803G GigaPoint

**100-04255**.....803G GigaPoint, 1 GE, 1 POTS

### Calix 803G Power Adapters

**100-04323**.....Power Adapter CPA3 12V 1.5Amp – AM Type A

**100-04324**.....Power Adapter CPA3 12V 1.5Amp – EU Type C

**100-04037**.....Power Adapter CPA5 12V 2.5Amp – UK Type G

**100-04038**.....Power Adapter CPA5 12V 2.5Amp – AU/NZ Type I

**100-04039**.....Power Adapter CPA5 12V 2.5Amp – AR Type I

### Calix 803G Packages with Power Adapter

**000-00951**.....803G GigaPoint, 1 POTS, 1 GE – AM Type A Power Adapter

**000-00952**.....803G GigaPoint, 1 POTS, 1 GE – EU Type C Power Adapter

**000-00953**.....803G GigaPoint, 1 POTS, 1 GE – UK Type G Power Adapter

**000-00954**.....803G GigaPoint, 1 POTS, 1 GE – AU/NZ Type I Power Adapter

**000-00955**.....803G GigaPoint, 1 POTS, 1 GE – AR Type I Power Adapter

Note: Calix believes the information in this publication to be accurate as of publication date, and is not responsible for error. Product Specifications are subject to change without notice.



# Telecommunications Needs Assessment and Development of Remedial Strategies for Southwest Virginia

Prepared for:

The Virginia Department of Housing and Community Development

The Town of Nickelsville

LENOWISCO, Cumberland Plateau, and Mount Rogers PDCs

May 8, 2019

*Prepared by*



*and*



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## 2 EXECUTIVE SUMMARY

This report documents a comprehensive needs assessment of the telecommunications services in thirteen counties and three cities in Planning Districts 1, 2 and 3 in Southwest Virginia.

The rural parts of Southwest Virginia are largely under-served, with some areas completely *unserved*, by broadband providers. The low population density in the region and the highly challenging geography -- the Appalachian Mountain range -- make it unlikely that the region's leaders will be able to rely on the private sector to solve this problem -- if there were a market-based business case, the investor-owned service providers would already be serving.

With few exceptions, the Incumbent Local Exchange Carriers' traditional copper and cable networks are insufficient to meet the current and future bandwidth needs of the region. Due to the financial impracticality of deploying current-technology networks, most incumbent local exchange carriers have neglected to extend, upgrade, or expand their networks in the region. Through public and private investment funds, others have built middle-mile fiber along the main corridors but generally without a last-mile solution.

This lack of ubiquitous, affordable, reliable broadband has had an ongoing impact on the region. In many areas covered in this study, populations are declining. Communities are having difficulties retaining youth. Economies are stagnant and lacking the means to grow. Residents are frustrated and, in some cases, indignant about the lack of broadband and wireless. Students are falling behind. Small businesses cannot compete. Larger businesses are moving out of the region. Not all of these maladies are caused by lack of sufficient broadband services, but it is certainly a contributing factor.

The need and demand for broadband communications services is great. The demand is sufficient to justify a long-term public investment. The total projected cost for broadband is estimated at \$52 Million. This represents a high-level estimate of the total cost to solve the last-mile issue at 62 high-priority communities within the three Planning Districts. This cost estimate is based upon leveraging the existing investments made by the Virginia Tobacco Region Revitalization Commission, the Virginia Coalfield Economic Development Authority, the EDA, and other providers of capital in the regional communications infrastructure. The plan calls for approximately -372 miles of new backbone fiber and 931 miles of drops, resulting in an estimated cost of \$ 7,584 per home. The investment will pass over 9,800 homes and it is estimated 6,884 will subscribe to service. It must be noted that these unserved and underserved 62 communities are the most difficult to reach with the sparsest population density. Also, once the backbone is built to serve these communities, additional incremental (those not subscribing to service in the initial buildout) can be added for approximately \$2,200 per residence, depending upon drop length.

The following table displays the breakdown of the residences to be served, the miles of backbone and drops, and total estimated cost to remediate the targeted areas by Planning District.

Cost Estimate	Regional Total	PDC 1	PDC 2	PDC 3
Homes Passed	9,831	1,368	4,574	3,889
No. of Customers (at take rate)	6,884	957	3,202	2,725
Miles of Backbone	372	70	126	177
Miles of Drop	931	130	433	368
Total Cost (EST)	\$ 52,207,296	\$ 8,662,984	\$ 20,566,494	\$ 22,977,817
Cost per Home	\$ 7,584	\$ 9,052	\$ 6,423	\$ 8,432

This \$52 million investment will not solve all of the regional connectivity problems. It will however, address access to high-speed Internet service for the communities in the greatest need.

Additionally, this plan does not address wireless services (cellular) in the region. Simply put, there is no path forward to improving commercial wireless services in the region without a partnership/collaboration with one of the major wireless operators. The region has immense potential to build upon the wireless infrastructure deployed for the 4g project, but it is fruitless to build additional towers, distributed antennae systems, or microcells in hopes that a wireless service provider will use the assets. Wireless operators are inscrutable in their network planning and never use assets simply because they have been made available.

The prioritized list of communities to be addressed are presented in Section 5 of this report. For implementation of this plan we recommend that the regional leaders find a way to formalize a relationship with Scott County Telephone Cooperative, Citizens Telephone Cooperative, and CPC Broadband. All three of these organizations have displayed a long history of *purpose-over-profit* and shared values with the regional planning leaders to improve the quality of life in the region and drive economic development. For any collaboration to work, shared values is the most important characteristic for success.

To fund this plan Section 7.2 of the Appendices lists the resources available to improve the lack of broadband services in the identified communities. It is recommended that a separate legal entity be organized to address the connectivity issues (broadband and

wireless) in the 13 -county region. Additionally, that Executive Director must be tasked with specific accountabilities (and rewards) to seek funding for these high priority communities. In short, all of rural America will be competing for these funds. The regional leaders must become tireless advocates for the region's communications needs.

Intuitively, everyone understands there is a correlation between investments in broadband and economic development. The relationships are well studied and there are a number of scholarly articles that quantify the impacts of investment in rural broadband and economic growth, specifically:

- Gross Domestic Product Per capita Increase,
- Median Household Income Increase, and
- Productivity Increase

One of the more recent studies commissioned by the World Bank, studied the economic impact in developing economies:

*Digital Dividends. Exploring the Relationship Between Broadband and Economic Growth,*  
by Michael Mingos, 2016.

The study concludes that a 10 percentage point increase in fixed broadband penetration would increase GDP growth by 1.21% in developed economies and 1.38% in developing ones. The GDP of the 13 county region is approximately \$12 Billion annually. The resulting economic impact in the region from the proposed investment can be expected to yield between \$145 Million and \$166 Million of economic growth, recurring annually.

There are hundreds of scholarly articles supporting this expectation.

## 3 INTRODUCTION

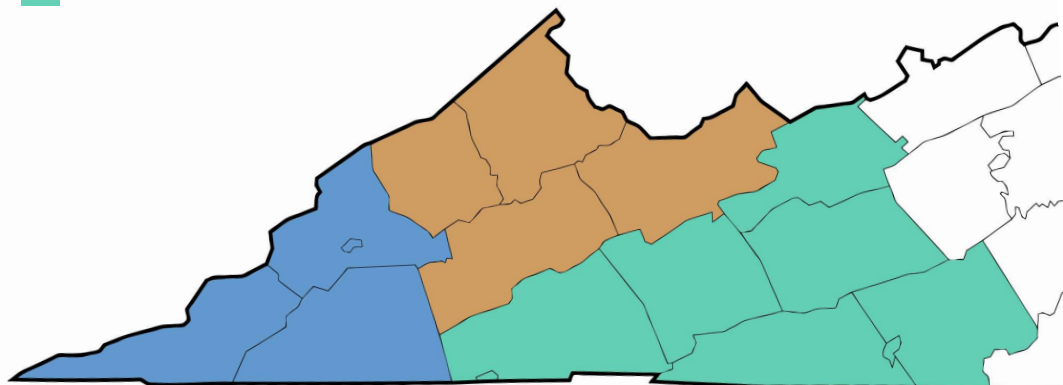
This report documents a comprehensive needs assessment of the telecommunications services in thirteen counties and three cities in Planning Districts 1, 2 and 3 in Southwest Virginia.

### 3.1 Project Area

#### Broadband Project Assessment Area – SW VA

##### Legend

- LENOWISCO PDC 1
- Cumberland Plateau PDC 2
- Mount Rogers PDC 3



Despite the fact that Southwest Virginia has seen over \$160 mm in capital investment over the last 20 years to improve the communications infrastructure, the region still has significant gaps in coverage. In 2016, a study by the Virginia Chamber of Commerce indicated that only 53 percent of rural Virginians had access to broadband Internet compared to urban areas with 96 percent.

During the course of this study, many communities have come forward to highlight the fact that there are areas completely unserved and underserved, and that many services are unaffordable. This outcry prompted leaders within the planning districts to strive to help improve high-speed Internet service, emergency communications service, and wireless service.

The areas studied are outlined in the following table. Across the region, population densities are low, and counties and cities are losing population due to the lack of vibrant economies. To support a growing economy, the region must have sufficient infrastructure and technologies.

Region	2010 Census	2018 Estimate	Percent Change	Square Miles	Density per Sq. Mile
Bland	6,824	6,432	-6%	358	18
Bristol city	17,835	16,877	-5%	13	1,297
Buchanan	24,098	21,576	-10%	503	43
Carroll	30,042	29,141	-3%	475	61
Dickenson	15,903	14,516	-9%	331	44
Galax City	7,042	6,587	-6%	8	799
Grayson	15,533	15,330	-1%	442	35
Lee	25,587	23,994	-6%	436	55
Norton City	3,958	3,908	-1%	7	522
Russell	28,897	27,057	-6%	474	57
Scott	23,177	22,121	-5%	536	41
Smyth	32,208	30,475	-5%	451	68
Tazewell	45,078	41,973	-7%	519	81
Washington	54,876	53,992	-2%	561	96
Wise	41,452	38,386	-7%	403	95
Wythe	29,235	28,650	-2%	462	62
<b>Total/Average</b>	<b>401,745</b>	<b>381,015</b>	<b>-5%</b>	<b>5,977</b>	<b>211</b>

### 3.2 Project Team

#### Thompson and Litton Engineers

Thompson & Litton Engineers (T&L), a local professional services firm, was selected to develop the study. T&L teamed with Blue Ridge Advisory Services Group, Inc. (Blue Ridge) to complete a comprehensive needs assessment and identify potential remedial solutions for the LENOWISCO (PDC 1), Cumberland Plateau (PDC 2), and Mount Rogers (PDC 3) planning districts.

T&L has over 100 employees in eight offices, offering an array of engineering, architectural, surveying, planning and construction services throughout Southwest Virginia, Tennessee, and West Virginia. T&L has designed 15 broadband projects and numerous wireless deployment projects since 2006.

With offices in Wise, Tazewell, and Chilhowie, T&L has a presence in each PDC associated with this study and is committed to providing superior service to the people within the region, as it has since 1956.

T&L's related project experiences include:

- Roanoke Valley Broadband Authority
- Citizens Telephone Cooperative
- Bristol VA Utilities/Cumberland Plateau
- Virginia Coalfield Coalition
- Verizon Wireless
- AT&T Mobility
- Nextel Communications
- SBA Communications
- Roanoke County, Virginia
- Virginia State Police

### **Blue Ridge Advisory Services Group**

Blue Ridge Advisory Services Group (Blue Ridge) is a professional services firm that has been serving the telecommunications sector for 20 years. The firm provides strategies, business plans, feasibility studies, financial modeling, and other value-added related services to bring about actionable plans to improve communities.

Blue Ridge's related project experience includes:

- Dominion Energy Telecommunications,
- DukeNet,
- CaroNet,
- TVA Telecom,
- Bonneville Power Telecom,
- Mid-Atlantic Broadband (and LIT Networks),
- Virginia Coalfield Coalition 4g Wireless.
- LENOWISCO LLC
- Roanoke Valley Broadband Authority
- Consolidated Cooperative FTTH Initiative

The study is being funded by a grant from the Appalachian Regional Commission (ARC) and Virginia Department of Housing and Community Development (DHCD). It is sponsored by the Town of Nickelsville, the Cumberland Plateau, LENOWISCO and Mount Rogers PDCs, and the Virginia Coalfield Coalition (VCC). The results of this study will serve to increase awareness and knowledge of where the broadband gaps are and hopefully lead to improved broadband choices for all residents, businesses, and visitors in Southwest Virginia.



### **3.3 Deliverables**

The final deliverables of this study include this written report, as well as two presentations to the management team. The first presentation was made in February 2019 and was followed by a second presentation in April 2019. All work products are the property of the ARC, DHCD, the VCC, the three PDCs, and the Town of Nickelsville.

### **3.4 Methodology**

T&L and Blue Ridge worked with a cross-functional management team of regional representatives to define:

- Accomplishments in the Region,
- Community Needs,
- Regional Needs,
- Remedial Strategies and Associated Costs,
- Prioritized List of Communities in Greatest Need,
- Potential Funding Sources and Strategies, and
- Potential Service Providers.

To identify the specific needs of each community (as well as the regional needs identified in Section 7.1 of the Appendices to this report) Blue Ridge conducted 40 interviews with key stakeholders in the region, covering 13 counties and 3 cities in Southwest Virginia, including:

- 8 with LENOWISCO
- 6 with Cumberland Plateau
- 8 with Mount Rogers
- 7 with industry leaders/stakeholders in the region
- 11 with telecom service providers that are active in the region

### 3.5 Accomplishments in Southwest Virginia

Over the past 20 years, approximately \$168 Million dollars of public investments have been made in Planning Districts 1, 2 and 3 to enhance broadband communication. The following table shows a breakdown of those investments by planning district.

Planning District	Amount Invested
LENOWISCO	\$ 71,579,167
Cumberland Plateau	\$ 45,758,931
Mount Rogers	\$ 50,383,291
<b>Total Public Investment in Planning Districts 1, 2, &amp; 3</b>	<b>\$167,721,389</b>

Beginning in 2000, the PDCs, realizing that the Internet was more than a passing fad, began to aggressively integrate broadband planning into their regional planning. Attitudes towards broadband gradually shifted from being considered an *amenity* to being recognized as a *necessity*. Broadband has become a quality of life issue and a necessity for ensuring economic development in every region. Essentially, it is the modern day equivalent of the Rural Electrification Act from the 1930s that brought electricity to rural America. In fact, today many are calling broadband “*the fifth utility*.”

On a national level, investments are being made in tele-health, school system technology, distance learning, and emergency preparedness. Telecommunications grants and loans are being made to improve services in each of these critical areas within the study area.

While some of these grant awards were single purpose and would not allow broadband operators to maximize their use by connecting all classes of commercial and residential customers in some cases, technology investment has driven and enhanced economic development in certain areas. A prime example of this is the Southwest Virginia Technology Center of Excellence, which is a software development and systems integration facility in the town of Lebanon in Russell County. CGI Group Inc., the fifth largest independent information technology and business process services firm in the world, invested in the area because of the grant-funded fiber optic backbone. Northrop Grumman Corporation, an American global aerospace and defense technology company, is also located in Lebanon.

Other examples include DP Facilities, Inc. data center in Wise County and Sykes Enterprises’ call centers in Buchanan and Wise Counties. Norton (PDC 1) has a Medicare transportation call center and one of its partners – the medical records data center - is in Duffield (Scott County). It is billed as “the first Tier 4 commercial data center in the US.”

## 4 Regional Needs

The region's needs to support technology-enabled, quality-of-life-improving applications were identified by interviewing key stakeholders throughout the three planning districts. Regional leaders view broadband as a necessity - a "4th utility." Some county leaders have taken the lack of broadband into their own hands and have begun their own initiatives to secure better services (Grayson County's RFP, for example).

### Major Trends

These viewpoints and initiatives demonstrate the following major trends/needs that were identified during the interview process:

- Plenty of middle-mile fiber exists in the region but there is **very little last mile connection**, especially in the more rural areas/off the main corridors. This presents a real need for a last-mile solution, as several providers have deployed fiber in the region along the major corridors but haven't extended the lines. The existing last mile providers, the incumbent local exchange carriers (ILECs), have not invested in upgrading their networks to adequately serve customers or ensure reliability in service.
- Broadband is available in areas with higher densities (cities such as Bristol and/or Norton), but issues include **unaffordable prices, lack of competition, and low quality of service**
- Some areas lack the basics - *cable TV* and/or reliable *landline* service
- **Cellular service is spotty** throughout parts of the region; there is no comprehensive cellular solution. *Some areas still run on 3G.*
- Residents in the more rural areas seem to tolerate the lack of coverage. Visitors and prospective investors -- who are accustomed to better services -- do NOT. They take their business elsewhere.

### Impact on Economic Development

While there is adequate connectivity to most of the industrial parks in the region, the lack of broadband in many areas has a profound impact on economic development.

- **Attracting Investment** - Prospective companies expect broadband to be available & won't wait for it to be built to suit. If a business expects to locate, high speed broadband with 4G is anticipated. Potential investors who cannot place a phone call from their cell phones are immediately turned off.
- **Tourism** - Tourists don't come back without cell service.
- **Infrastructure** - Broadband infrastructure is key to economic survival. Can't "get in the game" or even "sit on the bench" without it.
- **Workforce** - It's a serious "workforce issue" for retaining employees or getting new hires to relocate. Non-traditional, virtual jobs, and work from home will become more and more the future.

- **Innovation** - Broadband is necessary to foster innovation and to retain young people -- largest export is educated youth.
- **Real Estate** - Impacts home sales, as there is a noted lower demand for homes without access to broadband
- **Farming** - Impacts farming as operations become more technology-driven

#### **Impact on Citizens**

- **Options** - Without fiber and broadband, communities are unable to develop and provide advanced services
- **Price** - Consumers experience substantial pricing differentials across the region, depending on the level of competition
- **Speeds** – There is a gap between what’s advertised and what residents are experiencing, plus asymmetry between upload and download speeds

#### **Impact on Emergency Medical Services**

- Seamless emergency services communication is necessary
- A large concern by EMS is reaching tourists who cannot place cellular calls from remote areas
- Some people have to use landlines to call 911. As an illustration, in Haysi, if a call doesn’t go through, it doesn’t get forwarded, and callers have no access to emergency service.

#### **Impact on Educational System**

- Schools are well connected, but there is a major disconnect between school and home accessibility, also known as the “homework gap”

## 5 PRIORITIZATION OF COMMUNITIES

To prioritize the communities, the following methodology was agreed upon and used:

Rank	Criteria	Weight
1	<b>Level of Need</b>	<b>50 points</b>
	a) Un-served	
	b) Underserved	
2	<b>Number of Potential Connections</b>	<b>30 points</b>
3	<b>Cost</b>	<b>20 points</b>
	a) Backbone Connection Cost	
	b) Cost Per Connection (wireless, fiber)	

### 5.1 Broadband – Target Areas for Improvement

The following areas have been identified as targets for remediation in descending order of priority.

#### PDC 1 -- Broadband

PDC 1 - LENOWISCO								
Priority	County	Target Area for Improvement - Broadband	Homes Passed	Cost per Customer	Customers (at take rate)	Backbone Miles	Drop Miles	Total Estimated Cost
1	Lee	District 5 (north of 58 Alt)	62	\$ 8,100	43	3	6	\$ 348,313
2	Scott	Gate City to Duffield	366	\$ 10,688	256	24	35	\$ 2,736,206
3	Wise	Appalachia - Stonega	268	\$ 6,388	188	7	25	\$ 1,201,032
4	Wise	Appalachia - Exeter	260	\$ 6,578	182	8	25	\$ 1,197,236
5	Wise	Coeburn	150	\$ 7,005	105	5	14	\$ 735,528
6	Wise	Guest River	103	\$ 10,309	72	6	10	\$ 742,264
7	Wise	Birchfield	91	\$ 12,389	64	7	9	\$ 792,921
8	Lee	Blackwater	39	\$ 19,884	27	6	4	\$ 536,867
9	Wise	Hurricane	29	\$ 18,631	20	4	3	\$ 372,618
<b>TOTAL - PDC 1</b>			<b>1,368</b>	<b>\$ 9,052</b>	<b>957</b>	<b>70</b>	<b>129</b>	<b>\$ 8,662,984</b>

## PDC 2 -- Broadband

PDC 2 - CUMBERLAND PLATEAU								
Priority	County	Target Area for Improvement - Broadband	Homes Passed	Cost per Customer	Customers (at take rate)	Backbone Miles	Drop Miles	Total Estimated Cost
1	Tazewell	Baptist Valley	712	\$ 3,671	498	2	67	\$ 1,828,233
2	Dickenson	Haysi	37	\$ 5,454	26	1	4	\$ 141,813
3	Russell	Cleveland to Carbo	690	\$ 4,246	483	6	65	\$ 2,050,899
4	Buchanan	Council to Davenport	473	\$ 3,415	331	0	45	\$ 1,130,458
5	Tazewell	Abbs Valley	370	\$ 3,899	259	2	35	\$ 1,009,884
6	Tazewell	Gratton Valley	341	\$ 5,317	239	6	32	\$ 1,270,687
7	Dickenson	Honey Camp	85	\$ 9,467	60	5	8	\$ 568,009
8	Buchanan	Conaway	77	\$ 10,159	54	5	7	\$ 548,573
9	Buchanan	Big Rock	76	\$ 7,936	53	3	7	\$ 420,621
10	Tazewell	Richlands to Jewell Ridge	248	\$ 7,172	174	9	23	\$ 1,247,892
11	Buchanan	Dismal River Rd to Whitewood	234	\$ 11,460	164	17	22	\$ 1,879,384
12	Dickenson	Clinchco	112	\$ 4,267	78	1	11	\$ 332,822
13	Tazewell/Buchanan	Jewell Ridge to Bearwallow	63	\$ 13,490	44	6	6	\$ 593,565
14	Tazewell	Thompson Valley	167	\$ 11,241	117	12	16	\$ 1,315,201
15	Russell	Green Valley Rd	139	\$ 7,311	97	5	13	\$ 709,206
16	Russell	Belfast Mills	129	\$ 7,011	90	4	12	\$ 630,976
17	Tazewell	Tannersville	122	\$ 13,576	85	11	12	\$ 1,153,952
18	Buchanan	Home Creek	105	\$ 7,835	74	4	10	\$ 579,798
19	Buchanan	Hurricane Creek	89	\$ 9,166	62	5	8	\$ 568,297
20	Dickenson	Breaks	78	\$ 8,462	55	4	7	\$ 465,385
21	Buchanan	Hurley	57	\$ 9,021	40	3	5	\$ 360,833
22	Dickenson	Hill Ridge	56	\$ 6,974	39	2	5	\$ 271,981
23	Dickenson	Lick Creek	79	\$ 16,872	55	10	7	\$ 927,987
24	Buchanan	Bearwallow to Peapatch	35	\$ 22,402	25	6	3	\$ 560,039
<b>TOTAL - PDC 2</b>			<b>4,484</b>	<b>\$ 209,957</b>	<b>3,139</b>	<b>126</b>	<b>425</b>	<b>\$ 20,566,494</b>

**PDC 3 -- Broadband**

PDC 3 - MOUNT ROGERS								
Priority	County	Target Area for Improvement - Broadband	Homes Passed	Cost per Customer	Customers (at take rate)	Backbone Miles	Drop Miles	Total Estimated Cost
1	Washington	South of Glade Spring	182	\$ 7,733	127	7	17	\$ 982,091
2	Bland	Ceres	39	\$ 6,271	27	1	4	\$ 169,327
3	Grayson	Providence to Fries	374	\$ 4,548	262	4	35	\$ 1,191,642
4	Smyth	Sugar Grove	301	\$ 4,910	211	4	29	\$ 1,035,967
5	Bland	Clear Fork	113	\$ 13,752	79	11	11	\$ 1,086,374
6	Smyth	Rich Valley	443	\$ 6,863	310	14	42	\$ 2,127,419
7	Bland	Bland to Holly Brook	283	\$ 10,703	198	19	27	\$ 2,119,121
8	Carroll	Hillsville to Fancy Gap	254	\$ 7,132	178	9	24	\$ 1,269,484
9	Washington	Damascus	182	\$ 3,768	127	1	17	\$ 478,483
10	Wythe	Austinville	175	\$ 5,955	123	4	17	\$ 732,497
11	Bland	Grapefield	96	\$ 16,083	67	11	9	\$ 1,077,560
12	Grayson	Independence to Elk Creek	185	\$ 9,485	130	10	18	\$ 1,233,007
13	Bland	Dry Fork	151	\$ 8,958	106	8	14	\$ 949,500
14	Grayson	Baywood	76	\$ 6,313	53	2	7	\$ 334,601
15	Washington	Mendota	63	\$ 4,959	44	1	6	\$ 218,205
16	Grayson	Galax to Old Town	60	\$ 5,962	42	1	6	\$ 250,419
17	Washington	Hayter's Gap	45	\$ 9,927	32	3	4	\$ 317,649
18	Smyth	Chilhowie Industrial Park	1	\$ 88,852	1	1	0	\$ 88,852
19	Bland	Little Creek	119	\$ 15,516	83	13	11	\$ 1,287,826
20	Carroll	Dugspur to Laurel Fork	105	\$ 15,285	74	11	10	\$ 1,131,108
21	Grayson	Independence to Bridle Creek	101	\$ 9,296	71	5	10	\$ 660,010
22	Wythe	Castleton Road	98	\$ 9,239	69	5	9	\$ 637,484
23	Carroll	South of Woodlawn	73	\$ 8,112	51	3	7	\$ 413,735
24	Wythe	Barren Springs	53	\$ 8,221	37	2	5	\$ 304,195
25	Grayson	East of Troutdale	25	\$ 7,217	18	1	2	\$ 129,910
26	Grayson	Mouth of Wilson to Rugby	87	\$ 14,762	61	9	8	\$ 900,503
27	Grayson	Rte 58 to Providence	77	\$ 12,331	54	6	7	\$ 665,873
28	Grayson	Elk Creek to Comers Rock	74	\$ 9,816	52	4	7	\$ 510,407
29	Grayson	Bridle Creek to Mouth of Wilson	54	\$ 17,752	38	7	5	\$ 674,567
<b>TOTAL - PDC 3</b>			<b>3,889</b>	<b>\$ 349,720</b>	<b>2,725</b>	<b>177</b>	<b>368</b>	<b>\$ 22,977,817</b>

## 5.2 Broadband Prioritized Target Areas for Improvement; All PDCs

Ranking	PDC	County	Target Area for Improvement - Broadband	Ranking	PDC	County	Target Area for Improvement - Broadband
1	PDC2	Tazewell	Baptist Valley	32	PDC1	Wise	Coeburn
2	PDC3	Washington	South of Glade Spring	33	PDC2	Russell	Green Valley Rd
3	PDC3	Bland	Ceres	34	PDC2	Russell	Belfast Mills
4	PDC2	Dickenson	Haysi	35	PDC3	Grayson	Baywood
5	PDC2	Russell	Cleveland to Carbo	36	PDC3	Washington	Mendota
6	PDC2	Buchanan	Council to Davenport	37	PDC3	Grayson	Galax to Old Town
7	PDC3	Grayson	Providence to Fries	38	PDC3	Washington	Hayter's Gap
8	PDC2	Tazewell	Abbs Valley	39	PDC3	Smyth	Chilhowie Industrial Park
9	PDC2	Tazewell	Gratton Valley	40	PDC2	Tazewell	Tannersville
10	PDC3	Smyth	Sugar Grove	41	PDC3	Bland	Little Creek
11	PDC3	Bland	Clear Fork	42	PDC3	Carroll	Dugspur to Laurel Fork
12	PDC2	Dickenson	Honey Camp	43	PDC2	Buchanan	Home Creek
13	PDC2	Buchanan	Conaway	44	PDC1	Wise	Guest River
14	PDC2	Buchanan	Big Rock	45	PDC3	Grayson	Independence to Bridle Creek
15	PDC1	Lee	District 5 (north of 58 Alt)	46	PDC3	Wythe	Castleton Road
16	PDC3	Smyth	Rich Valley	47	PDC2	Buchanan	Hurricane Creek
17	PDC1	Scott	Gate City to Duffield	48	PDC2	Dickenson	Breaks
18	PDC3	Bland	Bland to Holly Brook	49	PDC3	Carroll	South of Woodlawn
19	PDC1	Wise	Appalachia - Stonega	50	PDC2	Buchanan	Hurley
20	PDC1	Wise	Appalachia - Exeter	51	PDC2	Dickenson	Hill Ridge
21	PDC3	Carroll	Hillsville to Fancy Gap	52	PDC3	Wythe	Barren Springs
22	PDC2	Tazewell	Richlands to Jewell Ridge	53	PDC3	Grayson	East of Troutdale
23	PDC2	Buchanan	Dismal River Rd to Whitewood	54	PDC1	Wise	Birchfield
24	PDC3	Washington	Damascus	55	PDC3	Grayson	Mouth of Wilson to Rugby
25	PDC3	Wythe	Austinville	56	PDC2	Dickenson	Lick Creek
26	PDC2	Dickenson	Clinchco	57	PDC3	Grayson	Rte 58 to Providence
27	PDC3	Bland	Grapefield	58	PDC3	Grayson	Elk Creek to Comers Rock
28	PDC2	Tazewell/Buchanan	Jewell Ridge to Bearwallow	59	PDC3	Grayson	Bridle Creek to Mouth of Wilson
29	PDC3	Grayson	Independence to Elk Creek	60	PDC1	Lee	Blackwater
30	PDC2	Tazewell	Thompson Valley	61	PDC2	Buchanan	Bearwallow to Peapatch
31	PDC3	Bland	Dry Fork	62	PDC1	Wise	Hurricane



### 5.3 Cellular – Target Areas for Improvement

#### PDC 1 – Wireless

PDC 1	
County	Target Area for Improvement - Cellular
Lee	Blackwater
Lee	Ewing
Lee	Flatwoods
Lee	Keokee
Lee	LMU Vet School
Lee	Rose Hill
Lee	St Charles
Norton	Flag Rock Recreation Area
Norton	Hawthorne Drive
Scott	Clinchport to Dungannon
Scott	Dungannon
Scott	Fort Blackmore
Scott	Gate City to Duffield
Scott	Gate City to Nickelsville
Scott	Nickelsville
Scott/Russell	Nickelsville to Lebanon (Russell County, 30 mi)
Scott	Rye Cove
Scott	Twin Springs
Wise	Airport
Wise	Appalachia
Wise	Coeburn
Wise	Guest River area (NW of Norton, N of Blackwood)
Wise	Pound
Wise	Wise (past the airport towards Dickenson County)

**PDC 2 – Wireless**

<b>PDC 2</b>	
<b>County</b>	<b>Target Area for Improvement - Cellular</b>
Buchanan	US 460 Vasant to Richlands
Buchanan/Dickenson/Russell	Route 80/Scenic Bike Trail
Dickenson	Clintwood to St. Paul
Dickenson	Edwards Ridge
Dickenson	Haysi
Dickenson	Lick Creek
Russell	Cleveland
Russell	Dante
Russell	Honaker
Russell	Lebanon to Hansonville
Russell/Washington	Hansonville to Abingdon

**PDC 3 – Wireless**

<b>PDC 3</b>	
<b>County</b>	<b>Target Area for Improvement - Cellular</b>
Bland	Ceres
Bland	Clear Fork
Bland	Dry Fork
Bland	Grapefield
Bland	Holly Brook
Bland	Little Creek
Carroll	Dugspur
Carroll	Laurel Fork
Carroll	S of Woodlawn/NE of Lambsburg
Washington	Abingdon

**Wireless Service in the Future**

Unlike Broadband Service, little can be done by the regional leaders to improve wireless communications without the full cooperation and assistance of a major wireless carrier.

It is impossible to forecast the total capital cost to improve the wireless coverage in these unserved communities. The recent 4g wireless project undertaken by the Virginia Coalfield Coalition resulted in significant regional coverage expansion (estimated at 90% of the population in PDCs 1 and 2) for \$15 Million, with a matching capital expenditure by a carrier. It is reasonable to estimate that a similar budget would be required to achieve 100% coverage.

One thing is clear from the initial 4g wireless initiative. There can be no economic development, eco-tourism, smart communities, smart electric grid, autonomous vehicles, or anything of the like without solid wireless communications network.

#### **5<sup>th</sup> Generation Wireless (5G).**

The next evolution of wireless communications (mobile point-to-multipoint communications, sometimes called “cellular”) is called 5<sup>th</sup> Generation Wireless or 5G. 5G is a standards-based protocol that enables much higher data transmission speed to wireless devices than any previous standard.

**Why is 5G important?** 5<sup>th</sup> generation wireless will enable speeds of up to 4 gigabits per second. That is 80 times faster than the speeds experienced on a 4g LTE network. Our world is becoming increasingly more dependent upon mobile data. Things like Smart Cities, Smart Grid, Hi-definition Tele Health, and Autonomous Vehicles will all require 5G.

**What is the network like?** 5G operates at a much higher wave frequency than any of the previous generation’s networks. This means the signals will travel shorter distances and not be able to travel through impediments. However, the frequencies will carry much greater data payloads.

The FCC concluded its first 5G spectrum auction this year in the 28 GHz band, and its auction of 24 GHz spectrum is taking place right now. Later this year, the FCC will auction the upper 37 GHz, 39 GHz, and 47 GHz bands.

5G will require a completely different network architecture and infrastructure than is currently in place. Instead of 200 foot-tall towers with large macro cells that can cover miles of territory, 5G will require small-cell or micro-cell architecture that broadcasts only a few hundred feet. It is generally believed that 5G cells will be required every thousand feet or so. Cells will be placed on light poles, utility poles, rooftops, and sides of buildings. The cells are small and require less power than macro cells. A key component of the network is fiber optic cable, as all cells must be connected with fiber to meet the bandwidth and latency requirements.

**When will 5G be deployed?** Carriers are working on beta tests and early network testing in a handful of metropolitan markets. The complete spectrum auction being managed by the FCC will not be completed until the end of 2019. Mobile handset makers like Apple will not release a 5G phone until late 2020 or 2021. 5G will not be widely available for several years. The initial deployments that have been announced are all major metropolitan areas. It is unknown how long, if ever, 5G will be deployed in rural markets like our three Planning Districts. ***There is nothing expected from 5G that would disrupt the plan outlined in this document for the foreseeable planning horizon.***

## 6 Recommendations and Next Steps

It is neither the purpose nor the intention of this study to point out the obvious to the leadership of PDCs 1, 2, and 3. The situation is plainly known to every planner, politician, stakeholder, and citizen in the region – **the communications infrastructure in Southwest Virginia is woefully inadequate to move the region forward.**

There are areas of breakthrough performance that can be pointed to as major successes:

1. LIT Networks bringing direct fiber connectivity and terabit speeds to the region from Ashburn thus enabling the development of critical data centers. Lowering the cost of wholesale Internet for all regional service providers. And providing diversity to the major Internet NAPs in Atlanta Georgia with ring protection.
2. Scott County Telephone's, Citizens Telephone's, and Sunset Digital's Fiber to the Home (FTTH) initiatives delivering gigabit speeds to residential customers.
3. The VCC 4g wireless project which enabled 4<sup>th</sup> generation wireless services to reach a reported 90% of the population of PDC's 1 and 2 (excluding Scott and Tazewell Counties).
4. CPC Broadband (formerly CPC OptiNet) is a subsidiary company of the Cumberland Plateau PDC. It was organized to serve Russell, Dickenson, Tazewell, and Buchanan Counties. Partnering with Point Broadband the Company has obtained over \$37 million in grant funding for the construction of 700 miles of fiber optic broadband backbone that is now serving almost 900 industrial, commercial, governmental and educational institutions in the region, including Northrup Grumman, Sykes, Pyott-Boone, and Dickenson County Public Schools.

Yet, despite these successes, the plain truth is that without service **ubiquitously** in the region, there can be no sustainable economic development, job creation and retention, and work force development.

The purpose of this report is to identify a prioritized inventory of areas to address; presented in Section 5. Our recommendations for implementing improvement are as follows:

### 6.1 Recommendations

1. Address the broadband problem on a regional basis as three PDC's, not individually, competing against one another for scarce resources. Consider forming a separate legal entity (or repurposing an existing one like the VCC) specifically to attack solving the broadband problems in the region. Hire a

dedicated Executive Director and task him/her with time-specific and measurable goals. Link compensation to goal attainment.

2. This report presents a priority list by PDC, and a single integrated list. There are economies of scale to network deployment. It may be far more cost effective to attack the highest priority from PDC 3 and a middle priority from PDC 2 at the same time. This should be considered before undertaking a strict buildout of the presented priorities.
3. Formalize agreements with SCTC, Citizens, and CPC Broadband that outline the mechanics of how network will be funded, deployed, operated, and maintained, including any revenue sharing.
4. Continue to encourage WISPs such as iGo, HillCom, and Gigabeam to deploy their wireless networks in unserved markets. While wireless is neither as robust nor as high-a-quality service as fiber, this is a situation where anything is better than nothing for the unserved customer. The encouragement can come in the form of discounted costs for tower attachment, access to dark fiber, and assistance with grant/loan programs.
5. Ignore the notion that some communities may eventually be served by virtue of the Connect America Fund. The FCC Connect America Fund recipients are not obligated to serve customers for up to six years. The unserved residents of Southwest Virginia need service NOW.
6. Attain legislative assistance, particularly for wireless (cellular) deployments. Several times in this report it has been noted that there is no path forward for wireless expansion without a carrier's participation. When the VCC implemented the 4g wireless program in 2011, it was only possible because of the leadership of Delegate Kilgore and the Tobacco Commission striking a deal with a commercial wireless provider.
7. Strive to get Southwest Virginia broadband worked into the annual state budget. Governor Northam has noted several times that rural broadband is a priority for his administration. In December 2018, the Governor announced plans to ask the General Assembly to commit \$46 million in the state's upcoming budget to assist rural areas of Virginia to get broadband Internet access. The Southwest Legislative Delegation should strive for a specific earmark for the region.

## 7 ATTACHMENTS AND APPENDICES

### 7.1 COMMUNITY NEEDS APPENDIX

#### LENOWISCO

The following table shows the population change and density per square mile for PDC 1 – LENOWISCO (Lee, Norton, Wise, and Scott).

PDC 1	2010 Census	2018 Estimate	Percent Change	Square Miles	Density/Sq. Mile
Lee	25,587	23,994	-6%	436	55
Norton City	3,958	3,908	-1%	7	522
Wise	41,452	38,386	-7%	403	95
Scott	23,177	22,121	-5%	536	41
<b>Total/Average</b>	<b>94,174</b>	<b>88,409</b>	<b>-5%</b>	<b>1,382</b>	<b>68</b>

#### Lee County

Lee County is served by Comcast and Verizon with additional services provided by Sunset Digital Communications.

Pennington Gap and Jonesville are the main population centers within the county and are relatively well served. However, St. Charles and the surrounding communities are not as well served. A few areas reported no telephone service in inclement weather and a complete void of multi-channel video service. Of course, high speed Internet service is non-existent. Business services are limited.



From Rose Hill westward toward Cumberland Gap, complaints about broadband service have been ongoing for years.

Verizon, the Incumbent Local Exchange Carriers (ILEC) in the region, is offering broadband services using DSL in some portions of the region. DSL has a physical

distance limitation that precludes it from being widely available. Even then, DSL is insufficient to meet the current FCC definition of broadband. Because of the technology limitations, it is understood there are no upgrades forthcoming for DSL that will keep pace with current bandwidth services in most of the nation.

Poor cellular service is a common complaint. New towers are being planned in Lee County for emergency services. The county planners are building these towers to accommodate commercial carriers in the hope that macro cells will be collocated on these towers and improve that wireless situation. To date, no commercial carriers have shown an interest in these new towers. Local officials understand that cellular wireless service is inadequate throughout the county and that it is an impediment to sustainability.

Communities identified as high-priority for broadband expansion are:

- District 5 (north of 58 Alt)
- Keokee
- Blackwater
- Flatwoods
- Rose Hill
- Ewing

***“The two things which we must overcome as a community and as a region is the challenge of overcoming the older generation/leaders’ way of thinking and planning for the expected exponential change in [broadband] capacity needs in the future.” –  
Leton Harding, Powell Valley National Bank***

### Wise County

Wise County receives most of its digital services from Comcast, Verizon, Sunset Digital, and Scott County Telephone Cooperative (SCTC).



Wise County has several backbone networks traversing the county with acceptable service levels to many. As a result, the county has seen economic development opportunities improve. One major data center, two call centers, and one digital-operations-center have located in Wise County.

However, not all residents of Wise County are receiving satisfactory services. Customers farthest from the main networks experience service quality and reliability failures, and competitive services options are not available. Greater speeds for uploads and downloads are needed for work-at-home opportunities for entrepreneurs and the general workforce.

Wise County communities identified as high-priority for broadband expansion are:

- Powell Valley
- Appalachia and the immediately surrounding coal camps
- Blackwood
- Areas north of the City of Norton
- West of US. 23
- Areas outside of Coeburn toward Scott County
- Smaller communities northeast of the Town of Wise
- Coeburn Mountain area (including Airport Road)
- Northwest of St. Paul
- Pound

### Scott County

Scott County Telephone Cooperative is the Incumbent Local Exchange Carrier for the county. SCTC has been very active in providing advanced telecom services throughout the county and region. Residents and businesses located near SCTC's central offices, remote access nodes, and switching centers receive excellent service. However, communities located further from the main exchanges don't have all of the bandwidth necessary to power their digital needs.



All schools in the county are well served; however, the lack of last-mile connectivity to residents hampers the full digital curricula potential.

The lack of adequate wireless (cellular) coverage throughout the county continues to be a challenge, with routine complaints coming in from various governmental entities within the county.

Specific communities in need for improved cellular service include:

- Nickelsville
- Fort Blackmore
- Rye Cove and
- Dungannon

***“Our biggest obstacle is not the infrastructure, but our vision of how to use that infrastructure.” – Danny Dixon, Vice Mayor of Nickelsville***



## City of Norton

The City of Norton has enjoyed robust communications services for years as a result of Verizon hosting a major Central Office in the downtown area. Economic development has taken advantage of that situation by successfully recruiting several digital businesses over the years including the Dual Party Relay Center providing services for the entire Commonwealth of Virginia through a contract with AT&T. That center recently closed as a result of contract changes and consolidation of services elsewhere. Verizon has also placed a directory assistance center within the city as has the statewide service that arranges Medicaid transportation services for their clients.

## Cumberland Plateau

The following table shows the population change and density per square mile for PDC 2 – Cumberland Plateau (Buchanan, Dickenson, Russell, and Tazewell Counties).

PDC 2	2010 Census	2018 Estimate	Percent Change	Square Miles	Density/Sq. Mile
Buchanan	24,098	21,576	-10%	503	43
Dickenson	15,903	14,516	-9%	331	44
Russell	28,897	27,057	-6%	474	57
Tazewell	45,078	41,973	-7%	519	81
<b>Total/Average</b>	<b>113,976</b>	<b>105,122</b>	<b>-8%</b>	<b>1,826</b>	<b>56</b>

## Buchanan County

Buchanan County is deep within the Coalfields of Virginia, adjacent to both Kentucky and West Virginia. The greatest communications network challenges in Buchanan County are the steep mountain terrain. However, a certain “can do” attitude exists which has fostered creative solutions to many problems.

This theme carried throughout the interviews conducted in the county. When solutions weren’t forthcoming from the service providers, local leaders took the initiative to raise funds and, in some cases, worked directly with the incumbent providers to extend services into communities where a business case could be made.

Educational institutions have created strong demand for broadband and wireless services, making communications a critical success factor for the region. A private law school and college of pharmacy have been operational in Buchanan County since 1994 and 2003,





*“Poor cellular coverage results in unsatisfying tourism experiences for our visitors” - Rita Surratt, Director, Dickenson County Chamber of Commerce*

## Russell County

Service providers in Russell County include Shentel, Verizon, and the Cumberland Plateau Company through a partnership with Sunset Digital. Russell County has capitalized on the “gig economy” by successfully recruiting call centers and software development centers to the region.

High-speed fiber lines were first placed in Lebanon nearly two decades ago which allowed the creation of data center and software development jobs.

However, connectivity beyond the Lebanon and the transportation corridors is still a problem for most of the county.



Affordability of broadband services was mentioned as a particular issue in Russell County.

When interviewees were asked about particular Russell County needs, **“all areas beyond Lebanon”** was the response.

Particular communities outlined regarding cellular wireless service needs included:

- Lebanon to Gate City - 71 - No service 75% of the time (1 hr. drive)
- Lebanon to Hansonville - Dropped calls/spotty coverage
- Lebanon to Abingdon - Dropped calls/spotty coverage
- Dante (near St. Paul) - Dropped calls/spotty coverage
- Cleveland - Dropped calls/spotty coverage
- Swords Creek -- Dropped calls/spotty coverage

The most pressing concern however was the inability to foster innovation and retain young people without dependable, affordable, quality broadband communications.

*From an economic development perspective, “you can’t ‘get in the game’ or even ‘sit on the bench’ without broadband infrastructure.” – Rachel Patton, WIA One Assistant Director*

## Tazewell County

Service providers in Tazewell County include Verizon, Spectrum, Burkes Garden, Comcast and Sunset. Tazewell County communities identified as high-priority for broadband expansion:

- Gratton Valley
- Tannersville and Clear Fork
- Thompson Valley
- Baptist Valley
- Abbs Valley
- Jewell Ridge
- Bluestone Commerce Park



The poor condition of Verizon legacy infrastructure is of great concern. Even landline service, the most basic of all telecom services, is unreliable.

In terms of cellular service, the main transportation corridor running through the county was the only reliable area for wireless communication.

*“The most important piece of technology in the classroom is the teacher.” – Drennon Laney, Server and Systems Administrator, Tazewell County Public Schools.*

## Mount Rogers

The following table shows the population change and density per square mile for PDC 3 – Mount Rogers (Bland, Bristol, Carroll, Galax, Grayson, Smyth, Washington, and Wythe).

PDC 3	2010 Census	2018 Estimate	Percent Change	Square Miles	Density per Sq. Mile
Bland	6,824	6,432	-6%	358	18
Bristol City	17,835	16,877	-5%	13	1,297
Carroll	30,042	29,141	-3%	475	61
Galax City	7,042	6,587	-6%	8	799
Grayson	15,533	15,330	-1%	442	35
Smyth	32,208	30,475	-5%	451	68
Washington	54,876	53,992	-2%	561	96
Wythe	29,235	28,650	-2%	462	62
<b>Total/Average</b>	<b>193,595</b>	<b>187,484</b>	<b>-3%</b>	<b>2,770</b>	<b>305</b>

## Bland County

Bland County, the least populated county studied, was recently awarded a \$459,764 grant from the Appalachian Regional Commission for a 33-mile fiber build to businesses and institutions in the county. The fiber run will start in Rocky Gap, then south through Bastian, then to Bland. The fiber will run along the Route 52 corridor. Once the fiber construction is finished, an ISP partner will use wireless technology to reach additional locations off Route 52. The project will make Internet access available to 37 businesses, as well as Bland County Schools, the Board of Education offices and the Bland County Medical Clinic, a federally qualified health center.



The existing providers in Bland County primarily use fixed wireless and existing DSL network plant to provide service and include:

- Sunset - Middle-mile fiber along Rt. 42 to Bland Correctional Facility
- CenturyLink – Some 10 MBPS service over copper but mostly 3 MBPS
- Verizon
- Gigabeam – Serving approximately 200 residents using towers throughout the county. They provide 50 MBPS service for \$79/mo. and 25 MBPS for \$30/mo.

Bland currently has a public-private partnership with Gigabeam Networks for up to 2 gig wireless.

Currently, the residential needs are not being met. The following areas were identified as having the greatest needs:

- Ceres (agriculture, tourism, 42/52 split)
- Grapefield
- Dry fork, Clear Fork, and Little Creek
- Hollybrook

## Carroll County

Carroll County has a population of approximately 29,724. Parts of the county are adequately served (the north side of Hillsville, for example), but other areas (specifically the south side of Hillsville) can only get about 1.5 MBPS, or “barely enough to e-mail.” In terms of cellular coverage, U.S Cellular has “good coverage” along main transportation corridors.



Resident complaints stem from CenturyLink and the lack of responsiveness to customers. The county has good broadband in the industrial parks, but workforce is the big issue for economic development.

CenturyLink is using its incumbent network (DSL) to serve customers

and used CAF funding to make it look as if customers had access to broadband when, in fact, they didn't.

Areas of greatest need include:

- Pipers Gap
- Laurel Fork
- Dugspur Region
- South of Woodlawn/Northeast of Lambsburg (FastLink has about 300 customers north of Lambsburg)

### Grayson County

Grayson County has been very proactive in pursuing solutions to its communities' broadband needs. In fall 2018, Grayson County issued an RFP for Broadband Services.

While a high level of detail on Grayson County's specific needs can be found in the RFP, a high level assessment is that most of the county is underserved or unserved.

- 77%, or 5,222 households have documented need for improved broadband
- Broadband is the number one need in the community. After Broadband, "Roads" are the number two need.
- Real estate sales and values are impacted by the degree to which broadband is available in a community.
- There is a potential growth opportunity for farmers to implement enabling technologies to better manage farm operations, but these technologies often require a broadband infrastructure
- Population retention & recruitment is a top priority for the Grayson County government. Broadband is considered #1 opportunity to solve this problem.



- As a former health care administrator, the County Administrator sees the value of connectivity to the entire population to improve health outcomes, especially in an area such as Grayson with a “graying population.”
- A lack of high speed communications is also contributing to the loss of young people after graduation.
- Areas of greatest need in the county (from current RFP):
  - Wilson & Elk Creek Districts; Mouth of Wilson, Rugby, East of Troutdale, Comers Rock
  - Providence, Elk Creek and Old Town; Elk Creek, Independence, Baywood
  - Wilson & Elk Creek Districts; East Mouth of Wilson, Buck Mountain, Big Ridge, Bridle Creek
  - Wilson District; West Mouth of Wilson, Whitetop
  - Providence, Old Town Districts; Fries, Baywood (east)
- Existing providers include:
  - CenturyLink
  - HughesNet and Exceed (WildBlue)
  - Comcast
  - Lingo (via Wired Road)
  - Citizens Telephone
- There are 13 total towers in the County but providers lack the incentive to upgrade.

*“High speed communication is a driver and enabler for the community. After Broadband, ‘Roads’ are the number two need.” – Bill Shepley, Grayson County Administrator*

### Smyth County

Smyth County has some fiber assets in the area through Sunset but, like many other counties in the planning districts covered in this report, needs a last mile solution. The business community’s needs are not being met and are at risk of leaving.

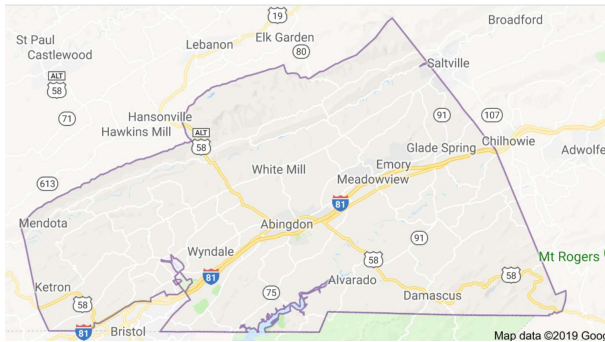
Providers serving Smyth County include CenturyLink, Comcast, and Sunset. There are no competitive local exchange carriers in the area. Cell phone service is “totally unreliable” in certain areas (northern and southern bands of the county), but providers won’t locate off the towers in the area. The majority of the complaints are about CenturyLink’s service.



The communities within Smyth County with the greatest need are:

- Sugar Grove
- Rich Valley.

### Washington County



In Washington County, business needs are being met only along I-81 corridor and within the Town of Abingdon and the City of Bristol. Beyond a three-mile radius from that corridor, businesses are either underserved or unserved. Residential needs are even greater. Mendota, Glade Spring and Damascus are all in need of service. Complaints from residents are frequent.

Service providers include Sunset, Charter, CenturyLink, and Comcast. Cellular wireless providers include VZW, T-Mobile and AT&T.

The specific communities within the county with the greatest needs include:

- Mendota
- Glade Spring
- Damascus

### Wythe County



In general, the industrial parks have good service. Businesses located along the transportation corridors are considered adequately served due to the amount of fiber available. However, residential coverage is spotty. The county has been suffering from economic stagnation in recent years. Historically, Wythe had been slowly growing while counties to the west were losing population. Only recently has the trend changed in Wythe as well. The current population is just over 29k.

The level of coverage in Wythe County varies depending on the part of the county. The denser areas (the eastern end of the county including Max Meadows and Austinville) have more coverage than less dense areas.

The current providers include CenturyLink and Shentel (which bought Rural Retreat Cable). Shentel offers “higher” speeds in Rural Retreat (up to 10 Mbps). The Chairman



of the BoS lives on Chapman road (the road running parallel to I-81/77 corridor (south side of Interstate) and is very dissatisfied with options and speeds available.

The Fort Chiswell/Lead Mines area is the one of greatest need. Also, the eastern end of the county is the largest growth area.

### **City of Galax**

Galax is more dense than other areas with the planning district. Also, it is part of Wired Road and is a Regional Broadband Authority, so the businesses and residents' needs are being met for the most part.

- Big businesses include Albany Industries, Moag Industrial, Vaughn Bassett furniture company, etc. CrossRoads Facility is a business incubator, and XM Radio call center has about 150 employees.
- There are about 7,000 people over 8 square miles, so a bit denser than other areas in the planning district.
- Wired Road forced providers to upgrade and expand their networks
- Perceived positive impact on real estate (byers won't consider moving to homes without broadband)
- Important for small businesses' online sales
- Schools are seeing higher enrollments and were using Lingo, which is one of the Wired Road providers. They are now using CenturyLink.
- Galax is upgrading some cell towers to ensure reliability
- Fiber runs east up to Airport Road

The main regional service providers in Galax include:

- Comcast – up to 130 meg residential in some areas; has a retail store in downtown Galax.
- CenturyLink – up to 25 meg
- Wired Road RBA

## 7.2 Sources of Funding Appendix

### National Funding

In December 2018, US Department of Agriculture (through RUS) announced a \$600 million grant and loan Broadband Program, ReConnect, to assist with building rural broadband infrastructure. Telecommunications companies, rural electric cooperatives and utilities, Internet service providers, and municipalities may apply for funding. To be eligible, communities must have populations smaller than 20,000 people with no broadband service or where service is slower than 10/1. Loan applications are due April and May 2019, depending on the program applied for.

### State Level Awards Granted

The state of Virginia, through Governor Northam, is heavily invested in the vision of equitable broadband coverage throughout the state. The Governor's vision is statewide broadband coverage within 10 years. The two agencies that have deployed the most capital to support broadband connectivity are the Virginia Tobacco Region Revitalization Commission (Tobacco Commission) and the Virginia Department of Housing and Community Development (DHCD). Part of receiving funding is a requirement that communities/localities have a "granular plan" for ensuring coverage.

#### Virginia Coalfield Economic Development Authority (VCEDA)

VCEDA has been involved with regional broadband expansion efforts for many years. They have been a provider of capital for the LENOWISCO Fiber-to-the-Home initiative, the Cumberland Plateau Company network expansion, and the Virginia Coalfield Coalition 4g Wireless project.

VCEDA indicated that "the more broadband deployed in the region, the more economic development is enhanced."

VCEDA identified the following communities as high potential candidates for broadband deployment:

- Haysi
- Nickelsville
- US 460 (between Richlands and Vansant)
- Hurley
- Whitewood
- Clinchco.

### Regional Awards Granted

#### Appalachian Regional Commission (ARC)

The Appalachian Regional Commission, or ARC, believes that “access to advanced telecommunications infrastructure for all Appalachian communities is essential for the Region to reach economic parity with the nation.”

ARC partners with public entities, non-profits, and the private-sector to spread access to telecommunications infrastructure and applications throughout the Region.

Specifically, ARC’s POWER program is a congressionally funded initiative that targets federal resources to help communities and regions that have been affected by job losses in coal mining, coal power plant operations, and coal-related supply chain industries due to the changing economics of America’s energy production. Virginia will receive 5 grants totaling more than \$2.8 million as part of this program.

One of the grants will go to Bland County (in the amount of \$459,764) for a 33-mile fiber build to businesses in the county. The fiber run will start in Rocky Gap, then south through Bastian, then to Bland. The fiber will run along the Route 52 corridor. Once the fiber construction is finished, an ISP partner will use wireless technology to reach additional locations off Route 52. The project will make Internet access available to 37 businesses, as well as Bland County Schools, the Board of Education offices and the Bland County Medical Clinic, a federally qualified health center.

**Pending Applications at the Tobacco Commission**

- Fiscal year 2019 pending last mile broadband applications to the Tobacco Commission for Southwest Virginia are outlined in the following table:

FY 2019 Last Mile Broadband - Pending Applications for SWVA

<b>Req #</b>	<b>Organization</b>	<b>Project Title</b>	<b>Request Amount</b>
3535	Carroll County Industrial Development Authority	The Wired Road/Carroll County Last Mile Neighborhood Pole Project	\$200,000
3531	Cumberland Plateau Company	Cleveland Broadband Expansion Project	\$544,137
3530	Grayson County	Connect Grayson	\$325,000
3522	Industrial Development Authority of Dickenson County	Honey Camp Last Mile Broadband	\$65,000
3519	Scott County Telephone Cooperative	Weber City Broadband Fiber-to-the-Home Initiative	\$1,500,000
3525	Tazewell County Industrial Development Authority	Tazewell County Wireless Service Authority Broadband Expansion Phase III	\$150,000
3527	Industrial Development Authority of Russell County VA	North Central Russell / South Buchanan Counties Broadband Expansion Project	\$1,900,000
<b>Total Potential Funding for SWVA</b>			<b>\$4,684,137</b>

## Funding Strategy

Identify the highest potential providers of capital, including government and private sources, to fund the highest priority communities. Start at the regional level, then state, then national.

- Virginia Rural Broadband Planning Initiative (VRBPI)
- Connect America Fund
- Rural Utility Services
- Community Development Block Grants (CDBG)

## Potential Funding Sources

The following table outlines a more comprehensive list of potential funding sources that have been identified by the Tobacco Commission.

Source	Opportunity	Brief Description	Application Timeline
<b>State Funding Opportunities</b>			
<b>Department of Housing and Community Development (DHCD)</b>	Community Development Block Grant Planning Grant <a href="http://www.dhcd.virginia.gov/index.php/community-partnerships-dhcd/79-community-development-block-grant-cdbg-planning-grant.html">http://www.dhcd.virginia.gov/index.php/community-partnerships-dhcd/79-community-development-block-grant-cdbg-planning-grant.html</a>	Funds available for 3 areas: planning grants, local innovation grants, implementation and economic development, and large scale local level projects.	January – September
<b>Department of Housing and Community Development (DHCD)</b>	Virginia Telecommunication Initiative <a href="http://www.dhcd.virginia.gov/">http://www.dhcd.virginia.gov/</a>	Provides financial assistance to supplement construction costs by private sector providers to extend services to areas that are presently unserved by any broadband provider. Definition of unserved; speeds <= 10 Mbps/1 Mbps. Eligible applicants: towns, cities, counties, EDA/IDA, broadband/wireless authorities, PDC, etc.	Fall

<b>Virginia Tobacco Region Revitalization Commission</b>	TRRC Last-mile Grant and Loan Fund  <a href="https://www.revitalizeva.org/grant-loan-program/grant-programs/research-development-grant-program/">https://www.revitalizeva.org/grant-loan-program/grant-programs/research-development-grant-program/</a>	Provides grants and loans to public/private partnerships between localities and ISPs to construct projects within its service area.	Announced annually
<b>Virginia Resources Authority (VRA)</b>	Virginia Pooled Financing Program <a href="http://www.virginiresources.org/page/virginia-pooled-financing-program/">http://www.virginiresources.org/page/virginia-pooled-financing-program/</a>	Provides financing to local governments for essential projects. All VRA's authorized project areas are eligible for financing in the Virginia Pooled Financing Program (VPFP). Since inception in 2003, over 100 local governments in Virginia have utilized this program to finance or refinance over \$2 billion in infrastructure projects.	Multiple windows annually

### Federal Funding Opportunities

<b>United States Department of Agriculture Rural Development (USDA)</b>	Community Connect Grant program  <a href="https://www.rd.usda.gov/programs-services/community-connect-grants">https://www.rd.usda.gov/programs-services/community-connect-grants</a>	This program helps fund broadband deployment into rural communities where it is not yet economically viable for private sector providers to deliver service.	Announced periodically
<b>United States Department of Agriculture Rural Development (USDA)</b>	Rural Broadband Access Loan and Loan Guarantee <a href="https://www.rd.usda.gov/programs-services/rural-broadband-access-loan-and-loan-guarantee">https://www.rd.usda.gov/programs-services/rural-broadband-access-loan-and-loan-guarantee</a>	This program offers financial assistance to eligible applicants that will construct, improve, or acquire facilities and equipment needed to provide service at the broadband lending speed as defined in the most recent funding announcement in eligible rural areas.	Announced periodically
<b>United States Department of Agriculture Rural Development (USDA)</b>	Telecommunications Infrastructure Loans & Loan Guarantees  <a href="https://www.rd.usda.gov/programs-services/telecommunications-">https://www.rd.usda.gov/programs-services/telecommunications-</a>	This program provides financing for the construction, maintenance, improvement and expansion of telephone service and broadband in rural areas.	Applications are accepted on a continuing basis

	<a href="#">infrastructure-loans-loan-guarantees</a>		
<b>United States Department of Agriculture Rural Development (USDA)</b>	Distance Learning and Telemedicine Program  <a href="https://www.rd.usda.gov/programs-services/distance-learning-telemedicine-grants">https://www.rd.usda.gov/programs-services/distance-learning-telemedicine-grants</a>	This program helps rural communities use telecommunications to connect to each other and to the world for the purposes of distance learning and telemedicine.	Announced periodically
<b>United States Department of Agriculture Rural Development (USDA)</b>	Community Facilities Direct Loan & Grant Program  <a href="https://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program">https://www.rd.usda.gov/programs-services/community-facilities-direct-loan-grant-program</a>	This program provides affordable funding to develop essential community facilities in rural areas.	Applications are accepted on a continuing basis
<b>Federal Communications Commission (FCC)</b>	Connect America Fund <a href="https://www.fcc.gov/general/connect-america-fund-caf">https://www.fcc.gov/general/connect-america-fund-caf</a> CAF I, \$1.5B over 10 years to 103 companies. CAF II \$1.98 B over 10 years. Bidding ended 8/2018. Awards pending.	Provider funding for FCC eligible areas only. Eligible areas map: <a href="https://www.fcc.gov/reports-research/maps/connect-america-phase-ii-initial-eligible-areas-map/">https://www.fcc.gov/reports-research/maps/connect-america-phase-ii-initial-eligible-areas-map/</a>	No longer active for new bidders.
<b>Federal Communications Commission (FCC)</b>	FCC Mobility Fund Phase II <a href="https://www.fcc.gov/mobility-fund-phase-2">https://www.fcc.gov/mobility-fund-phase-2</a>	The FCC plans to make up to \$4.53 billion in funding available to mobile operators that are building out 4G LTE networks to underserved rural markets. The funding will be made available over a 10-year period. Operators that receive the support from the auction will build out 4G LTE mobile service that will deliver at least 10 Mbps to customers in markets that lack access to unsubsidized 4G LTE.	Not yet active
<b>Federal Communications Commission (FCC)</b>	E-Rate Funding <a href="http://www.fcc.gov/encyclopedia/e-rate-schools-libraries-usf-program">http://www.fcc.gov/encyclopedia/e-rate-schools-libraries-usf-program</a>	The schools and libraries universal service support program, commonly known as the E-Rate program, helps schools and libraries to obtain affordable broadband.	Winter-Spring
<b>Universal Service Administration Co. (USAC)</b>	Lifeline Support <a href="https://www.usac.org/li/">https://www.usac.org/li/</a>	Lifeline is a federal program that lowers the monthly cost of phone and Internet for eligible customers. Participating companies in Virginia: <a href="http://www.lifelinesupp">http://www.lifelinesupp</a>	Applications are accepted on a continuing basis

		<a href="http://www.usac.org/rhc/healthcare-connect/default.aspx">ort.org/ls/companies/CompanyListing.aspx?state=VA&amp;stateName=Virginia</a>	
<b>Universal Service Administration Co. (USAC)</b>	Rural Health Care – Healthcare Connect Fund  <a href="https://www.usac.org/rhc/healthcare-connect/default.aspx">https://www.usac.org/rhc/healthcare-connect/default.aspx</a>	This program provides a 65 percent discount on eligible expenses related to broadband connectivity to both individual rural health care providers (HCPs) and consortia, which can include non-rural HCPs, if the consortium has a majority of rural sites.	Winter - Summer
<b>Universal Service Administration Co. (USAC)</b>	Rural Health Care – Telecommunications Program <a href="https://www.usac.org/rhc/telecommunications/default.aspx">https://www.usac.org/rhc/telecommunications/default.aspx</a>	This program provides reduced rates to rural health care providers (HCPs) for telecommunications services related to the use of telemedicine and telehealth.	Winter - Summer
<b>US Economic Development Administration (EDA)</b>	Planning Program and Local Technical Assistance Program  <a href="https://www.grants.gov/web/grants/view-opportunity.html?oppld=301936">https://www.grants.gov/web/grants/view-opportunity.html?oppld=301936</a>	This program assists eligible recipients in developing economic development plans and studies designed to build capacity and guide the economic prosperity and resiliency of an area or region.	Applications are accepted on a continuing basis
<b>US Economic Development Administration (EDA)</b>	Public Works and Economic Adjustment Assistance Programs <a href="https://www.grants.gov/web/grants/view-opportunity.html?oppld=294771">https://www.grants.gov/web/grants/view-opportunity.html?oppld=294771</a>	Grants made under this program will leverage regional assets to support the implementation of regional economic development strategies designed to create jobs, leverage private capital, encourage economic development, and strengthen America's ability to compete in the global marketplace.	Applications are accepted on a continuing basis
<b>Department of Education (DOE)</b>	Promise Neighborhoods Competition <a href="http://www2.ed.gov/programs/promiseneighborhoods/index.html">http://www2.ed.gov/programs/promiseneighborhoods/index.html</a>	This program provides funding to support eligible entities to significantly improve the educational and developmental outcomes of children and youth in our most distressed communities.	Spring
<b>Appalachian Regional Commission (ARC)</b>	ARC Project Grants <a href="https://www.arc.gov/funding/arprojectgrants.asp">https://www.arc.gov/funding/arprojectgrants.asp</a>	ARC funds a number of telecommunications activities, including strategic community planning, equipment	Announced annually

		acquisition, and hardware and software for network building. ARC funds can be used for strategic telecommunications planning activities, telecommunication service inventory and assessment activities, aggregation of demand projects, among other activities.	
<b>Federal Reserve</b>	Community Reinvestment Act (CRA) <a href="https://www.dallasfed.org/cd/pubs/digitaldivide.aspx">https://www.dallasfed.org/cd/pubs/digitaldivide.aspx</a>	The Federal Reserve has issued guidance on how to leverage a bank's CRA resources in digital equity initiatives.	Ongoing
<b>Tribal Funding Opportunities</b>			
<b>U.S. Department of Housing and Urban Development (HUD)</b>	Indian Community Development Block Grant <a href="http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/grants/icdbg">http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/grants/icdbg</a>	Provides funds to eligible grantees for housing rehabilitation, land acquisition, community facilities, infrastructure construction, and economic development activities. Eligible applicants for assistance include any Indian tribe, band, group, or nation.	Winter
<b>U.S. Department of Housing and Urban Development (HUD)</b>	Indian Housing Block Grant (IHBG) program <a href="http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/grants/ihbg">http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/ih/grants/ihbg</a>	The provision of broadband is eligible under this program. Eligible IHBG recipients are Federally recognized Indian tribes or their tribally designated housing entity (TDHE), and a limited number of state recognized tribes who were funded under the Indian Housing Program authorized by the United States Housing Act of 1937 (USHA).	Winter
<b>Institute of Museum and Library Services</b>	Native American Library Services <a href="https://www.ims.gov/nofo/native-american-library-services-basic-grants-fy16-notice-funding-opportunity">https://www.ims.gov/nofo/native-american-library-services-basic-grants-fy16-notice-funding-opportunity</a>	Basic Grants are available to support existing library operations and to maintain core library services. Indian tribes, Alaska native villages, regional corporations, and village corporations are eligible to apply for funding under the Native American Library Services grant program.	Spring



### 7.3 Addressable Market Appendix

#### Market Overview

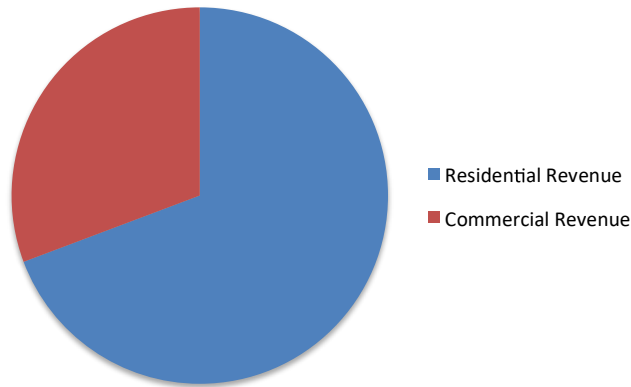
The telecommunications market in Southwest Virginia is estimated at \$289 Million annually for voice, video, data, and wireless services. This estimate is based on the following key factors:

Key Economic Index Factors	SWVA Region
Residential	
Population (2018)	401,745
Households (BRASG 2018 Estimate)	84,270
Median Household Income (BRASG 2018 Estimate)	\$38,945
Economic Index (Income Relative to US)	68%
Economic Index (Income Relative to VA)	56%
Commercial	
Businesses (BRASG Estimate)	7,430
Employment (BRASG Estimate)	49,423

On average, approximately 4% of household income is spent on all communication services.

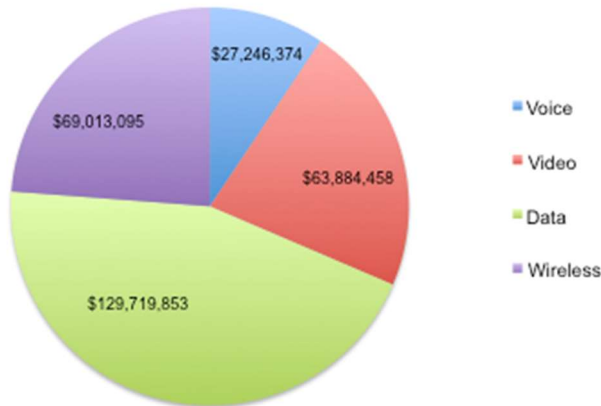
The overall market is roughly split between 31% commercial and 69% residential services.

### Total Revenue – Residential vs. Commercial



By service, the revenue distribution is outlined in the following table, with broadband services driving most of the growth:

### Total Annual Telecom Revenue at Year 1



The important market dynamics that will influence this addressable market are threefold:

- 1. Cable TV Cord Cutting.** As wireless service becomes more reliable and ubiquitous, and as broadband becomes more available, there will be a continued defection not only from landline voice to wireless but also from cable tv to digital, a-la-carte streaming services. Cisco predicts that nearly four-fifths (79 percent) of the world’s mobile data traffic will be video by 2022.
- 2. Mobile Data Demand.** The explosion in mobile data demand only continues. It grew 23% in 2017 in North America. The increasing number of wireless devices and connections will continue to drive the surge in demand for wireless data.

3. **5G Technology.** The evolution of 5<sup>th</sup> Generation, or 5G, networks, holds the promise to deliver faster speeds. However, it is likely that rural areas such as Southwest Virginia may be last in line to see the carriers upgrade, as they will target the larger markets initially. A strong fiber backbone will still be needed to service the 5G network. 4G will carry most of the traffic for the next 10 years or so.

These trends will drive demand for expanded fiber and wireless-dependent services in the region, presenting an opportunity for service providers. However, the issue remains. The associated costs of upgrading networks to meet that demand is still extremely high due to the low population densities and challenging geography of the region. Regional leaders must find ways to partner with providers to bridge the gap so that their communities are not left behind.

## **7.4 Service Provider Appendix**

Following is a brief description of the regional service providers and their capabilities:

### **Burkes Garden Telephone Company**

Burkes Garden Telephone Company (BGTCO) is a small, investor-owned telephone company offering “triple-play” services via a fiber-optic system of approximately 72 fiber miles. The service area is tucked in the eastern edge of Tazewell County, adjacent to Bland County, Virginia. BGTCO migrated from copper to fiber over approximately two years.

The service area covers approximately 75 Sq. Miles from the top of Rich Mountain through Little Creek through Burkes Garden. The service area sits within a crater-like bowl with a mountain ridge totally surrounding the region. The customer count includes 160 full-time with as many as 185 during the summer season. Approximately 100 customers receive broadband, which equates to a take rate of 62%.

GPON and active Ethernet are utilized to serve these customers providing 15/10 Mbps service priced at \$32.95/mo. There are no business customers on the system and approximately 13 or 14 customers are considered to be Amish and as such only utilize the telephone service.

### **Charter Communications**

Charter / Spectrum is the second largest cable provider in the United States (third largest multi-channel video service provider when AT&T / DirecTV are considered) but has limited network operations in Southwest Virginia. Spectrum’s local network is primarily in Buchanan and Tazewell counties, with some network in Russell County. Charter has an operational office in Richlands, with a head-end site in Cedar Bluff. Spectrum’s network covers the Town of Tazewell, a good portion of Tazewell County, Grundy, and Richlands. Charter utilizes a hybrid-fiber-coaxial cable network architecture. 100 MBPS asynchronous service is Charter’s standard/basic service at \$44.99 per month. This price is dependent upon various bundling schemes.

### **Citizens Telephone Cooperative**

Citizens is a regional ILEC with full-service communications offerings, including land-line telephone, VoIP, IPTV Video, web and e-mail hosting, DSL, and FTTP (Fiber to the Premise, and Business Ethernet. Citizen’s serves portions of 7 counties in Southwest Virginia. Based in Floyd, Virginia, Citizens network is still 90% copper based, but they are rolling out gigabit FTTP.

There is some overlap of their services and a few counties within PDC’s 1, 2, &3, including Carroll County, Grayson County, and Wythe County. Citizens’ network stops at the Smyth County line. Their fiber runs from 58 to 16 (BVU/Sunset) and 221 to Sparta. They just completed a build on 221 (North) to Roanoke Co., passing over 1,000 homes with FTTH.

## **Century Link**

CenturyLink is the incumbent local exchange carrier in many parts of the study region. CenturyLink still has their legacy network in place and have not invested in upgrading their network. As a result, customer satisfaction rates due to speed and reliability, were low across the board. The biggest complaint related to customer service and the perception of a total “lack of response.”

## **Comcast**

Comcast is the largest cable provider in the United States (second largest multi-channel video service provider when AT&T / DirecTV are considered). Comcast operates a hybrid-fiber-coaxial system throughout the study area. Comcast is doing little in terms of upgrades, with some limited upgrades in PDC 1. In PDC 2, one respondent placed Comcast quality of service at the middle of the pack of the 5 service providers available in that area. Another respondent in the northwestern portion of PDC 2 listed Comcast as “adequate” with 4 stars. Still another official in the southwestern portion of region 3 gave Comcast high marks for quality of service.

## **CPC Broadband**

CPC Broadband (formerly CPC OptiNet) is a subsidiary company of the Cumberland Plateau PDC. It was organized to serve Russell, Dickenson, Tazewell, and Buchanan Counties. Partnering with Bristol Virginia Utility's OptiNet division (now Point Broadband) the Company has obtained over \$37 million in grant funding for the construction of 700 miles of fiber optic broadband backbone that is now serving almost 900 industrial, commercial, governmental and educational institutions in the region.

## **iGo Technologies**

iGo, founded in 1994, is a Virginia-based Internet service company, providing wireless and fiber high speed Internet service to its customers who include residential and commercial clients, individuals and small to mid-size and large business. In 2017, iGo also began offering telephone service to its Internet customers.

iGo coverage areas include parts of Buchanan, Russell, Tazewell, Washington and Wise counties, with additional operations in Tennessee and West Virginia. iGo utilizes one VCC tower to reach unserved residents of the region.

iGo is mainly a fixed wireless provider with 6-8 towers, 520 customers, and 12 employees. Although existing customers are mostly wireless, iGo has successfully competed for USDA Community Connect grants for FTTH build outs. They are underway with a \$1.78M project awarded in 2016 which will include 21 miles of fiber in the Buchanan County area north of Oakwood.

In 2017, they were awarded an additional \$3.0M project for a buildup Garden Creek Rd toward Honaker. iGo was just awarded \$455,581 to extend the build into Russell County and add interconnection with SCTC along Virginia Route 624.

The current build includes 468 customers passed. iGo is an essential element of solving the problem of unserved residents in the region.

### **Gigabeam Networks**

Gigabeam Networks, a wireless Internet service provider, or WISP, provides service in Southwest Virginia, West Virginia and southeastern Kentucky. Their network is completely wireless, including the backhaul. Gigabeam is a small entrepreneurial venture owned by Michael Clemens. They have approximately 200 subscribers in Bland and utilize towers throughout the county. Their service packages include \$79/mo. for 50 meg and \$30 for 25 meg.

### **HillCom**

HillCom, Inc is a family-owned wireless Internet service provider located in Dickenson County. The company started in 2016 out of necessity when a local resident was unable to access adequate Internet service but was able to create his own wireless broadband network solution. By 2017, HillCom had responded to neighbors requesting the service and grew to 20 customers. They then purchased DCWin (Dickenson County Wireless) and now have approximately 600 customers (95% in Dickenson County), with a mission to provide service to the entire county.

Most of the service requests HillCom receives are from the following areas within the county:

- Lick Creek
- Honey Camp
- Breaks

### **Point Broadband**

Formerly BVU OptiNet, Point Broadband was organized in 2018 as the combination of Duffield-based Sunset Digital and Bristol-based BVU OptiNet. The organization is part of a family of telecommunications enterprises headquartered in West Point, Georgia called ITC Holding Company, LLC. ITC began as The West Point Telephone and Electric Company, founded in 1896. Point Broadband is in the process of an organization period, and their exact strategy is unknown. As with many other providers in the region, Point Broadband is attempting to determine how to affordably build out and maintain their network. Point Broadband is the recipient of a multi-million-dollar CAF II award for the study region including Lee County, and the Cumberland Plateau counties of Dickenson, Russell, and Tazewell.

### **Scott County Telephone Cooperative**

Scott County Telephone Cooperative (SCTC), a local provider headquartered in Gate City, is a key player in the region. It serves 420 square miles of Scott County with some service in Tennessee. Their current service territory includes parts of Russell, Wise, Dickenson, and Lee Counties, and the City of Norton. They provide voice, video, and data Voice,

video, data, and security, primarily over a traditional copper/ILEC network but have been upgrading to eventually deploy and utilize an all fiber network to provide enhanced broadband services.

Using primarily grant funding, SCTC has upgraded about 100 miles of its network to fiber, with builds to 5 exchanges in the following areas:

- Ft. Blackmore
- Duffield
- Nickelsville
- Dungannon
- Clinchport

SCTC has approximately 7,000 access lines (about 5,000 in ILEC area and 2,000 in CLEC area). Additionally, they have about 7,000 high speed Internet customers.

### **Shentel**

Shentel, or Shenandoah Telecommunications Company, is a publicly traded telecommunications company headquartered in Edinburg, Virginia. Shentel has digital wireless and wireline network in rural Virginia, West Virginia, Maryland and Pennsylvania. Shentel is also an affiliate of Sprint with wireless coverage in Pennsylvania, Maryland, Virginia, West Virginia, Kentucky and Ohio. It owns its own cell site towers built on leased land and leases space on these towers to both affiliates and non-affiliated service providers. Shentel has invested over \$200 million in the past two years upgrading and expanding its wireless networks, primarily in rural markets. Shentel also provides fiber services to commercial and wholesale customers along its 5,641-mile fiber network across four states.

Shentel's cable segment provides video, Internet and voice services in franchise areas in Virginia, West Virginia, and portions of western Maryland and leases fiber optic facilities throughout its service area. It does not include video, Internet and voice services provided to customers in Shenandoah County, Virginia.

Shentel's wireline segment provides regulated and unregulated voice services, DSL Internet access and long-distance access services throughout Shenandoah County and portions of Rockingham, Frederick, Warren and Augusta Counties, Virginia. The segment also provides video services in portions of Shenandoah County and leases fiber optic facilities throughout the northern Shenandoah Valley of Virginia, northern Virginia and adjacent areas along the Interstate 81 corridor, including portions of West Virginia and Maryland.

Shentel has over 5,400 fiber route miles with fiber to over 325 cell sites, but with network in only Carroll and Russell counties. It has cable plant in Lebanon, Honaker, Swords Creek, Rye, Dante, Wytheville, and Rural Retreat.

Shentel does not actively pursue grant funding, as they have not been very successful in the past doing so.

## **Wired Road**

The Wired Road Authority is a collaborative effort between private sector service providers, the local governments of Grayson County, Carroll County, and the City of Galax, and the Carroll-Grayson-Galax Regional Industrial Facilities Authority (dba Blue Ridge Crossroads Economic Development Authority). Its purpose is to provide the critical enabling infrastructure to transform the regional economy into a dynamic, small business, and entrepreneurial economy. This transformation, enabled by The Wired Road and a complementary economic development focus on attracting and supporting entrepreneurs and small businesses, will allow the region's economy to spawn new businesses, generate jobs, create wealth, and protect the rural character of our region.

The Wired Road network has been in operation for over ten years and is a true public/private partnership with two service providers offering last mile services on the network. The Wired Road is an open access, fully integrated fiber and wireless regional broadband network offering "big broadband" 100 megabit and Gigabit fiber connections and multi-megabit wireless connections in Carroll County, Grayson County, and Galax.

Currently, the Wired Road is finishing a network extension which will connect fiber in Galax with fiber in Hillsville. It is also expanding its wireless coverage and constructing "community poles" to get service to areas that couldn't be reached before. Fiber Wireless Providers

The bill will allow Dominion Energy and Appalachian Power to provide or make available broadband capacity to service providers in unserved areas. It also authorizes the utility to own or lease broadband capacity equipment.

With existing infrastructure that already serves almost every resident and business in rural areas, utilities are uniquely positioned to bridge the gap between middle mile networks and last mile consumers.



## References

Source data for population: Published on January 28, 2019 by the Weldon Cooper Center for Public Service Demographics Research Group <https://demographics.coopercenter.org>

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Source: WideOpen Networks, The Wired Road, "Broadband Recommendations," April 2017, Revised, October 2017, pp. 32-34.

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1. Name: PAUL G. CARYER

2. Telephone Number: 276-523-6636

3. Address where your household or business receives (or would like to receive) Internet Service:

1222 G.G. TWO ANGELS LANE  
BIG STONE GAP, VA, 24219

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?  Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE. IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?

- DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device
- Satellite

7. Who is your Internet service provider?

- Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?

- Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure

9. How much do you pay monthly for Internet service?

- Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65
- More than \$65  Not sure

10. How reliable is your Internet service?

- Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?

- Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours
- More than 1 Day

12. How satisfied are you with your Internet service?

- Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

I AM A DISABLED VETERAN  
THAT HAS A REAL NEED FOR  
THE INTERNET. 8-28-2021  
(Signature) (Date)

**SURVEY CLOSING ON FRIDAY, SEPTEMBER 3RD, 2021**

149 Woodland Street | P.O. Box 487 | Gate City, VA 24251  
Tel: (276) 452-9119 | Fax: (276) 452-2447

# WISE COUNTY BROADBAND INTERNET NEEDS SURVEY

1. Name: Mary Martin

2. Telephone Number: \_\_\_\_\_

3. Address where your household or business receives (or would like to receive) Internet Service:

340 Highland ST SE WISE VA 24293

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?  Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE. IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?

DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  
 Satellite

7. Who is your Internet service provider?

Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?

Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure

9. How much do you pay monthly for Internet service?

Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  
 More than \$65  Not sure

10. How reliable is your Internet service?

Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?

Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  
 More than 1 Day MANY, MANY times every day

12. How satisfied are you with your Internet service?

Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Pay \$20 per month for as long as you want, so they constantly raise price for phone, Internet is VERY slow and constantly cutting off

Mary Martin  
(Signature)

9-1-2021  
(Date)

**SURVEY CLOSING ON FRIDAY, SEPTEMBER 3RD, 2021**

Rec'd in Mail

1. Name: James Robinette & Marlee Robinette
2. Telephone Number: 276-639-9399 & 276-395-4308
3. Address where your household or business receives (or would like to receive) Internet Service:  
7314 Rasnick Rd. Norton, VA 24273

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your internet service:

To pricey & slow sometimes

James Robinette  
(Signature)

9-1-21  
(Date)

*Lee*

1. Name: April Berinf
2. Telephone Number: 276-275-0931
3. Address where your household or business receives (or would like to receive) Internet Service:  
7136 Redwine Road Wise, Va. 24293
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:  
\_\_\_\_\_

*April Berinf*  
(Signature)

8/24/21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: CHRIS WILLIS
2. Telephone Number: 276-523-5138
3. Address where your household or business receives (or would like to receive) Internet Service:  
1704 4TH AVE, E. BIG STONE GAP, VA 24219
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:  
I would love to have FIOS!

Chris Willis  
(Signature)

6/24/21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Joe & Lauren Bryant
2. Telephone Number: (276) 275-9414
3. Address where your household or business receives (or would like to receive) Internet Service:  
320 ~~Woods~~ Thistle Dr Ewing

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

per call w/ Lauren  
(Signature)

9/2/21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Joseph Wilson  
2. Telephone Number: 865-352-4540  
3. Address where your household or business receives (or would like to receive) Internet Service:  
1802 Kesterson Rd, Ewing

4. Do you currently have Internet service at this address?  Yes  No *Viasat*  
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite  
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_  
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure  
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure  
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable  
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day  
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

per phone (Signature) 8/27/21 (Date)



**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Clydette Woodard
2. Telephone Number: (423)489-1314 (sister Cathy)
3. Address where your household or business receives (or would like to receive) Internet Service:  
171 Boone Tabernacle Rd, Ewing

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

per phone w/ sister Cathy Smith  
(Signature)

8/27/21  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

Sales lead 3633  
Notes on Sales lead  
6/21/21 say VTI 2  
Sand cause - end of  
year 1st of yr  
before working

1. Name: Cathy Smith  
2. Telephone Number: (423) 489-1314  
3. Address where your household or business receives (or would like to receive) Internet Service:  
167 Boone Tabernacle Rd, Ewing, 205 Boone Tabernacle Rd

4. Do you currently have Internet service at this address?  Yes  No  
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite  
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_  
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure  
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure  
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable  
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day  
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:  
\_\_\_\_\_

per phone call from Cathy  
(Signature)

8/27/21  
(Date)

ODP

1. Name: John Miele
2. Telephone Number: 229-412-5028
3. Address where your household or business receives (or would like to receive) Internet Service:

375 Cherokee Hills Ln, Ewing VA

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

Viasat

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

per phone call  
(Signature)

8/26/21  
(Date)

*waiting on  
call back to  
get address*

1. Name: Mary Long

2. Telephone Number: 865-276-1617

3. Address where your household or business receives (or would like to receive) Internet Service:

Rowlett Trail Eving Va. 24248

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?

Not available  Poor reliability  Too expensive

6. If "Yes", what type of Internet service do you have?

DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?

Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?

Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure

9. How much do you pay monthly for Internet service?

Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?

Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?

Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?

Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

No service

Mary Long  
(Signature)

8-24-21  
(Date)

waiting on  
call back to  
get address

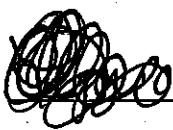
1. Name: Brenda Bailey
2. Telephone Number: 865-585-2083
3. Address where your household or business receives (or would like to receive) Internet Service:

Bailey Town Road Eving, VA 24248

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

  
Brenda Bailey  
(Signature)

8/24/2021  
(Date)

1. Name: Monica Dawn Wright
  2. Telephone Number: 276-445-8452 Cell # 865-585-3373
  3. Address where your household or business receives (or would like to receive) Internet Service:  
648 New Rd. Rose Hill, VA 24281 & 208 New Rd. Tazewell, TN 37879
  4. Do you currently have Internet service at this address?  Yes  No (Both addresses right on VA / TN state line)
  5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
  7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
  8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
  9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
  10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
  11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
  12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
  13. Comments about your Internet service:

Monica D. Wright  
(Signature)

8/25/2021  
(Date)

**SCTC**  
*Connecting you*  
Scott County Telephone Cooperative

1. Name: Brian Neff (2) kids  
2. Telephone Number: 276-393-9710 11/7  
3. Address where your household or business receives (or would like to receive) Internet Service:  
508 Flanary Bridge Rd.

4. Do you currently have Internet service at this address?  Yes  No  
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite  
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure

9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

\_\_\_\_\_

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: David Combs
2. Telephone Number: 276-337-0583
3. Address where your household or business receives (or would like to receive) Internet Service:  
2230 Flatwoods Rd.

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

*IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

---

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .



**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Marcum Oil Company
2. Telephone Number: 276-346-4328
3. Address where your household or business receives (or would like to receive) Internet Service:  
27289 Wilderness Road

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

*IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

\_\_\_\_\_

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

1. Name: Wayne Marcum
2. Telephone Number: 276-393-6250
3. Address where your household or business receives (or would like to receive) Internet Service:  
1579 Flatwoods Rd

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

*IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name:

Robert Osborne

(Current House Phone)

2. Telephone Number:

276 346 2747

\* Cell

865-556-5723 (Best # to Call)

3. Address where your household or business receives (or would like to receive) Internet Service:

2393 McClure Chapel Road, Rose Hill VA

4. Do you currently have Internet service at this address?  Yes  No

24281

5. If "No" what is the main reason why you do not have Internet service at this address?

Not available  Poor reliability  Too expensive

6. If "Yes", what type of Internet service do you have?

DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?

Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?

Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure

9. How much do you pay monthly for Internet service?

Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  Not sure

10. How reliable is your Internet service?

Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?

Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?

Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

\* Need service to walk from home with University

Robert Osborne  
(Signature)

8/24/2024  
(Date)

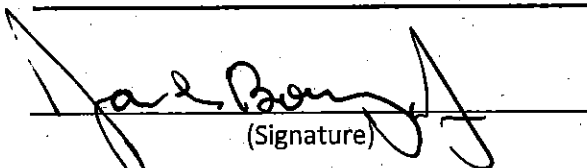
**SCTC**  
*Connecting you*  
Scott County Telephone Cooperative

1. Name: JIM BOWLING
2. Telephone Number: 606 269-3130
3. Address where your household or business receives (or would like to receive) Internet Service:  
1446 FROE LEVEL RD F. WINDLE, VA 24246

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other VIASAT
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

  
(Signature)

8-24-21  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: DEBORAH ELLIS
2. Telephone Number: 276 619 1925
3. Address where your household or business receives (or would like to receive) Internet Service:  
1855 FROG LEVEL RD, FROG, VA 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other DISH NETWORK
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

READY FOR A CHANGE, NEED RELIABLE SERVICE FOR WORK

[Signature]  
(Signature)

8/24/21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Donnie McAfee  
2. Telephone Number: 423-300-0591

3. Address where your household or business receives (or would like to receive) Internet Service:

1235

Baileytown Road Eving, VA 24248

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure

9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Donnie McAfee  
(Signature)

8/24/21  
(Date)

Farm House  
Owned in Homestead

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Jessica Eldridge
2. Telephone Number: 606 269 7069
3. Address where your household or business receives (or would like to receive) Internet Service:  
167 Briar Cliff DR Ewing VA 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Jessica Eldridge  
(Signature)

8-24-21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Michelle Byington
2. Telephone Number: 276-207-1416
3. Address where your household or business receives (or would like to receive) Internet Service:

144 Ervin Hill Drive, Rose Hill VA 24281

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

We need service in our area, I teach in Lee County schools + need internet service to work remotely.

Michelle Byington  
(Signature)

8-24-21  
(Date)



**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Betty Bailey
2. Telephone Number: 816-585-5220
3. Address where your household or business receives (or would like to receive) Internet Service:  
1581 Baileytown Rd. Fving. Va. 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Betty Bailey  
(Signature)

8/24/21  
(Date)

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C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

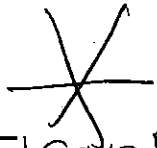
1. Name: Lauren Pridemore
2. Telephone Number: 606-499-0400
3. Address where your household or business receives (or would like to receive) Internet Service:  
289 Briar Cliff Dr. Fwing, Va. 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Lauren Pridemore  
(Signature)

8/24/2021  
(Date)

1. Name: Sherry Lowe
2. Telephone Number: 276-870-9214
3. Address where your household or business receives (or would like to receive) Internet Service:

146 Boone Tabernade Rd. Ewing, VA 24248



4. Do you currently have Internet service at this address?  Yes  No *off of Sand Cave Rd in Ewing, VA.*

5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

*IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure

9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:  
We offer a free tutoring program. Internet is vital to catch our Lee Co. children up from loss of school days.

Sherry Lowe  
(Signature)

8-24-2021  
(Date)

1. Name: Andrea Lowe
2. Telephone Number: 276 870 2746
3. Address where your household or business receives (or would like to receive) Internet Service:  
146 Boone Tabernacle Road EWING, VA 24248

4. Do you currently have Internet service at this address? \_\_ Yes (No)
5. If "No" what is the main reason why you do not have Internet service at this address?  
✓ Not available \_\_ Poor reliability \_\_ Too expensive

OFF OF  
SAND CAVE  
RD, EWING.  
  
X

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
\_\_ DSL \_\_ Cable \_\_ Fiber \_\_ Fixed Wireless \_\_ Hot Spot on Mobile Device \_\_ Satellite
7. Who is your Internet service provider?  
\_\_ Verizon \_\_ Point Broadband \_\_ Xfinity \_\_ Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
\_\_ Less than 10Mbps/1Mbs \_\_ Less than 25Mbps/3Mbs \_\_ Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs \_\_ Greater than 100Mbps/10Mbs \_\_ Not sure
9. How much do you pay monthly for Internet service?  
\_\_ Between \$35 and \$45 \_\_ Between \$45 and \$55 \_\_ Between \$55 and \$65 \_\_ More than \$65  
\_\_ Not sure
10. How reliable is your Internet service?  
\_\_ Completely Unreliable \_\_ Somewhat Reliable \_\_ Very Reliable
11. On average, how long does a typical Internet service outage last?  
\_\_ Only a few minutes \_\_ 1-3 Hours \_\_ 3-6 Hours \_\_ 6-24 Hours \_\_ More than 1 Day
12. How satisfied are you with your Internet service?  
\_\_ Completely Dissatisfied \_\_ Somewhat Satisfied \_\_ Very Satisfied

13. Comments about your Internet service:  
★ Were a church & we need this for our Tutoring Program to fill the gap due to loss of instructional time.

[Signature]  
(Signature)

8-24-21  
(Date)

**SCTC**  
*Connecting you*  
Scott County Telephone Cooperative

1. Name: Jay & Joyce Rouse
2. Telephone Number: 276-870-7540 or 276-870-7543
3. Address where your household or business receives (or would like to receive) Internet Service:  
661 Blue Hollow Rd. Rose Hill, VA 24281
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other do not have one
8. What is the approximate speed of your Internet service? N/A  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service? N/A  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  Not sure
10. How reliable is your Internet service? N/A  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last? N/A  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service? N/A  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Joyce Rouse  
(Signature)

8/24/21  
(Date)

**SCTC**  
*Connecting you*  
Scott County Telephone Cooperative

1. Name: Emily Miller
2. Telephone Number: 276-870-4107
3. Address where your household or business receives (or would like to receive) Internet Service:  
4106 Old Nursery Rd. Rose Hill, VA 24281
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have? N/A  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider? N/A  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service? N/A  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure
9. How much do you pay monthly for Internet service? N/A  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service? N/A  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last? N/A  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service? N/A  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:
- 

Emily Miller  
(Signature)

8/24/21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Tammie & Tim Charles
2. Telephone Number: 734-679-5551
3. Address where your household or business receives (or would like to receive) Internet Service:  
351 Creekwood Dr. Ewing, Va. 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other AT & T
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Tammie Charles  
Tammie Charles  
(Signature)

8-24-21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Jerald Roberts
2. Telephone Number: 276/861.3872
3. Address where your household or business receives (or would like to receive) Internet Service:  
640 Beaver Brooke Rd Ewing VA
4. Do you currently have Internet service at this address?  Yes  No
5. If "~~No~~" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:  
\_\_\_\_\_

Jerald Roberts  
(Signature)

8-24-21  
(Date)



**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Beth Minton
  2. Telephone Number: 865-585-8843
  3. Address where your household or business receives (or would like to receive) Internet Service:  
286 Creekwood Drive Ewing, VA 24248
  4. Do you currently have Internet service at this address?  Yes  No
  5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
  7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
  8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
  9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
  10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
  11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
  12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
  13. Comments about your Internet service:

Beth Minton

(Signature)

8-24-21

(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

1. Name: Heather Hunley  
2. Telephone Number: 865-585-2447  
3. Address where your household or business receives (or would like to receive) Internet Service:  
1314 Mountain Springs Rd. Rose Hill, VA 24281

4. Do you currently have Internet service at this address?  Yes  No  
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

*IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite  
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_  
8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure  
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure  
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable  
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day  
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Heather Hef 8-24-2021  
(Signature) (Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Lindy Wood
2. Telephone Number: 706-791-7991
3. Address where your household or business receives (or would like to receive) Internet Service:

Lot #?

8870 Wilderness Rd 24248 or 24241

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

New residence don't have any internet + can't get any.

Lindy Wood  
(Signature)

8-24-21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: LARRY + Gilda Neff  
2. Telephone Number: 276-445-5998 cell 865-585-7396  
3. Address where your household or business receives (or would like to receive) Internet Service:  
15063 Wilderness Rd, Rose Hill VA

4. Do you currently have Internet service at this address?  Yes  No  
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite  
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_  
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure  
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure  
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable  
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day  
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Mildred F. Neff  
(Signature)

8-24-2021  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

1. Name: Cleston Pittman & Othella Pittman

2. Telephone Number: 276 445 4008

3. Address where your household or business receives (or would like to receive) Internet Service:

2205 Pleasant View Rd Rose Hill, Va

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?

Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?

DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?

Verizon  Point Broadband  Xfinity  Other Hugobolt

8. What is the approximate speed of your Internet service?

Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure

9. How much do you pay monthly for Internet service?

Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?

Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?

Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?

Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Othella E. Pittman  
(Signature)

8-24-2021  
(Date)

**SCTC**  
*Connecting you*  
Scott County Telephone Cooperative

1. Name: Wade Wilson
2. Telephone Number: 276-445-4683
3. Address where your household or business receives (or would like to receive) Internet Service:  
1711 Peterson Rd Emig
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service: Cable is on Pole in front of house

Wade C. Wilson  
(Signature)

8-25-21  
(Date)

*School age  
child*

1. Name: Kristy Pounching
2. Telephone Number: 4235268331
3. Address where your household or business receives (or would like to receive) Internet Service:  
175 Ely Hollow Rd Ewing VA 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Kristy Pounching  
(Signature)

8/24/21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Linda Quillen
2. Telephone Number: 276-445-4457
3. Address where your household or business receives (or would like to receive) Internet Service:  
1967 Kesterson Road Ewing VA 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other Hughes net
8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your internet service:  
Would like it to not  
buffer so much  
Linda Quillen (Signature) 8-24-21 (Date)



**SCTC**  
*Connecting you*  
Scott County Telephone Cooperative

1. Name: Rebecca Roe
2. Telephone Number: <sup>Cell</sup> 276-870-4919  
276-445-4083
3. Address where your household or business receives (or would like to receive) Internet Service:  
118 marson Quillen Rd Ewing VA 24245
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

more reliable would like something

Rebecca Roe (Signature) 8-24-21 (Date)

**SCTC**  
*Connecting you*  
Scott County Telephone Cooperative

1. Name: Carl & Donna Capps
2. Telephone Number: 276-445-4475
3. Address where your household or business receives (or would like to receive) Internet Service:  
250 Marson Quillen Rd., Ewing, VA 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other Dish
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:  
Very poor service

Donna W. Capps  
(Signature)

8/24/21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Lynn Metcalf Richard Metcalf  
2. Telephone Number: 865-585-2313 865-804-0219
3. Address where your household or business receives (or would like to receive) Internet Service:  
1618 Baileytown Road Ewing VA 24248
4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Lynn Metcalf  
(Signature)

8/24/21  
(Date)

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C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: LAWRENCE TAYLOR
2. Telephone Number: 606-670-7772
3. Address where your household or business receives (or would like to receive) Internet Service:  
756 SPEAKS BRANCH RD POSEHILL 24287
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:  
\_\_\_\_\_

L E Taylor  
(Signature)

8-24-21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Toni Ayers
2. Telephone Number: 606-670-5008
3. Address where your household or business receives (or would like to receive) Internet Service:  
262 Red clover Loop Ewing, VA 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Toni Ayers  
(Signature)

8/24/21  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Todd Lee
2. Telephone Number: 423-851-2274  
or 423-851-2266
3. Address where your household or business receives (or would like to receive) Internet Service:  
664 Yellow Branch Rd. Rose Hill, VA 24281
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other HughesNet
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Todd Lee

(Signature)

8-24-21

(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Kathleen Maddie
2. Telephone Number: 423-851-2266
3. Address where your household or business receives (or would like to receive) Internet Service:  
2109 Balls Chapel Rd. Rose Hill, VA 24281
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:  
\_\_\_\_\_

Kathleen Maddie  
(Signature)

8-24-21  
(Date)

Needs Drop  
Terry -  
Do so per Cody

1. Name: David & Ann Graham
2. Telephone Number: 276-870-1702 (Ann) 276-298-5787 (David)  
Wife
3. Address where your household or business receives (or would like to receive) Internet Service:  
6603 Red Fletcher Rd - Jonesville VA

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)



*So per Cody  
Terry  
main line built*

1. Name: LARRY MAGGARD
  2. Telephone Number: 226-445-4222
  3. Address where your household or business receives (or would like to receive) Internet Service:  
502 Ridgecrest Rd. Rose Hill VA 24281
  4. Do you currently have Internet service at this address?  Yes  No
  5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
  7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
  8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
  9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
  10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
  11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
  12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
  13. Comments about your Internet service:

Larry Maggard  
(Signature)

8/24/2021  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

Off Kesterson Rd  
Trailer rt  
before but  
not sure of  
addy

1. Name: George Fleming
2. Telephone Number: 276-445-4081
3. Address where your household or business receives (or would like to receive) Internet Service:  
398 Mink Holler Rd, Ewing Rt 735
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

George Fleming  
(Signature)

9-24-21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Bob Gavin

2. Telephone Number: 865-585-0456

3. Address where your household or business receives (or would like to receive) Internet Service:

559 Ewing Cemetery Road Ewing VA 24248

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?

Not available  Poor reliability  Too expensive

6. If "Yes", what type of Internet service do you have?

DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?

Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?

Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure

9. How much do you pay monthly for Internet service?

Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?

Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?

Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?

Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Bob Gavin  
(Signature)

8-24-21  
(Date)



Scott County Telephone Cooperative

1. Name: Sandy O'Dell for <sup>Notes</sup> Stella Antolin (I own the property)

2. Telephone Number: 276-870-6903

3. Address where your household or business receives (or would like to receive) Internet Service:

348 Bethany Rd Ewing, Va 24248

4. Do you currently have Internet service at this address?  Yes  No But Not adequate

5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other Hughes Satellite

8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure

9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  Not sure

10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last? ??  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:  
Hughes Net Satellite - as this is currently the only option.

Sandy O'Dell  
(Signature)

8/24/21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: ANNIE & ED HAGAN
2. Telephone Number: 828-850-3865 (ED)  
828-850-0790 (ANNIE)
3. Address where your household or business receives (or would like to receive) Internet Service:  
1060 DR. THOMAS WALKER ROAD, EUNING, VA, 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available \_\_\_ Poor reliability \_\_\_ Too expensive
6. If "Yes", what type of Internet service do you have?  
\_\_\_ DSL \_\_\_ Cable \_\_\_ Fiber \_\_\_ Fixed Wireless  Hot Spot on Mobile Device \_\_\_ Satellite
7. Who is your Internet service provider?  
 Verizon \_\_\_ Point Broadband \_\_\_ Xfinity \_\_\_ Other \_\_\_\_\_  
WIFI
8. What is the approximate speed of your Internet service?  
\_\_\_ Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs \_\_\_ Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs \_\_\_ Greater than 100Mbps/10Mbs \_\_\_ Not sure
9. How much do you pay monthly for Internet service?  
\_\_\_ Between \$35 and \$45 \_\_\_ Between \$45 and \$55 \_\_\_ Between \$55 and \$65 \_\_\_ More than \$65  
\_\_\_ Not sure \$ 25.00
10. How reliable is your Internet service?  
\_\_\_ Completely Unreliable  Somewhat Reliable \_\_\_ Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes \_\_\_ 1-3 Hours \_\_\_ 3-6 Hours \_\_\_ 6-24 Hours \_\_\_ More than 1 Day
12. How satisfied are you with your Internet service?  
\_\_\_ Completely Dissatisfied  Somewhat Satisfied \_\_\_ Very Satisfied
13. Comments about your Internet service:  
TOO SLOW!

[Signature]  
(Signature)

24 AUG 21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Linda Blair
2. Telephone Number: 276-346-6025
3. Address where your household or business receives (or would like to receive) Internet Service:  
330 Vineyard Rd Rose Hill VA 24281
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:  
\_\_\_\_\_

Linda Blair  
(Signature)

8/24/21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Marie Neff
2. Telephone Number: 276-445-4332
3. Address where your household or business receives (or would like to receive) Internet Service:  
422 Dr. Thomas Walker Road, Ewing Va 24281
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Marie Neff  
(Signature)

8-27-2021  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Amanda Blair
  2. Telephone Number: 865 352 9232
  3. Address where your household or business receives (or would like to receive) Internet Service:  
500 vineyard Road Rose Hill Va. 24281-4602
  4. Do you currently have Internet service at this address? \_\_ Yes  No
  5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available \_\_ Poor reliability \_\_ Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.
6. If "Yes", what type of Internet service do you have?  
\_\_ DSL \_\_ Cable \_\_ Fiber \_\_ Fixed Wireless \_\_ Hot Spot on Mobile Device \_\_ Satellite
  7. Who is your Internet service provider?  
\_\_ Verizon \_\_ Point Broadband \_\_ Xfinity \_\_ Other \_\_\_\_\_
  8. What is the approximate speed of your Internet service?  
\_\_ Less than 10Mbps/1Mbps \_\_ Less than 25Mbps/3Mbps \_\_ Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps \_\_ Greater than 100Mbps/10Mbps \_\_ Not sure
  9. How much do you pay monthly for Internet service?  
\_\_ Between \$35 and \$45 \_\_ Between \$45 and \$55 \_\_ Between \$55 and \$65 \_\_ More than \$65  
\_\_ Not sure
  10. How reliable is your Internet service?  
\_\_ Completely Unreliable \_\_ Somewhat Reliable \_\_ Very Reliable
  11. On average, how long does a typical Internet service outage last?  
\_\_ Only a few minutes \_\_ 1-3 Hours \_\_ 3-6 Hours \_\_ 6-24 Hours \_\_ More than 1 Day
  12. How satisfied are you with your Internet service?  
\_\_ Completely Dissatisfied \_\_ Somewhat Satisfied \_\_ Very Satisfied
  13. Comments about your Internet service:

Amanda Blair  
(Signature)

9-24-2021  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .



**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Jo Anne Harding
2. Telephone Number: 276-202-1198
3. Address where your household or business receives (or would like to receive) Internet Service:  
1065 Cedar Hill Church Rd Jonesville

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Jo Anne Harding  
(Signature)

8/24/21  
(Date)

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C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Shirley Marsee  
2. Telephone Number: 865-585-4355  
3. Address where your household or business receives (or would like to receive) Internet Service:  
123 Stockyard Dr Ewing VA 24248

4. Do you currently have Internet service at this address?  Yes  No  
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite  
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_  
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure  
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure  
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable  
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day  
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Shirley Marsee (Signature) 8/24/21 (Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Shawn Taylor
2. Telephone Number: 865-279-4259
3. Address where your household or business receives (or would like to receive) Internet Service:  
336 Thistle Drive Ewing VA 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Shawn Taylor  
(Signature)

8-24-21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Lauren Bryant
2. Telephone Number: (276) 275-9414
3. Address where your household or business receives (or would like to receive) Internet Service:  
320 Thistle Dr. Ewing, VA 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Lauren Bryant  
(Signature)

8/24/2021  
(Date)

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C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Zane Koenig
2. Telephone Number: (865) 585-8096
3. Address where your household or business receives (or would like to receive) Internet Service:  
302 McLin Hollow Rd Rose Hill VA 24281
4. Do you currently have Internet service at this address?  Yes  No
5. If  "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Zane Koenig  
(Signature)

8/24/21  
(Date)



Scott County Telephone Cooperative

- 1. Name: Sherry Hayton
- 2. Telephone Number: (276) 445-4232
- 3. Address where your household or business receives (or would like to receive) Internet Service:  
227 Verlin Hensley Ewing VA 24248
- 4. Do you currently have Internet service at this address?  Yes  No
- 5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- 6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
- 7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other Viasat
- 8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
- 9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  Not sure
- 10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
- 11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
- 12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
- 13. Comments about your Internet service:

Sherry Hayton  
(Signature)  
(daughter Heather Koenig)

8/24/21  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

1. Name: Vanessa Mayes  
2. Telephone Number: (865) 585-1549 (cell)

\* I have been told my address is included in a VAFI grant that has been received by SCTC

3. Address where your household or business receives (or would like to receive) Internet Service:

418 Bethany Rd Ewing, VA 24248

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?

Not available  Poor reliability  Too expensive

6. If "Yes", what type of Internet service do you have? \*very slow/unable to provide service I need

DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?

Verizon  Point Broadband  Xfinity  Other Verizon Mi-Fi

8. What is the approximate speed of your Internet service?

Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure (slow)

9. How much do you pay monthly for Internet service?

Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  Not sure

10. How reliable is your Internet service?

Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?

Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?

Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

I am in desperate need of internet service. I am a small business owner and have a daughter in college and not having internet is a complete handicap to us.

Vanessa Mayes  
(Signature)

8/24/21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Megem + Shane Carr
2. Telephone Number: 606 213 7290
3. Address where your household or business receives (or would like to receive) Internet Service:  
626 Frog Level Rd Fwing VA 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other Vasat
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure \$250.00
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day Depends on the weather
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

we hate it!

M. Carr  
(Signature)

8-24-2021  
(Date)



**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Brittney Blair
2. Telephone Number: 904-568-0080
3. Address where your household or business receives (or would like to receive) Internet Service:

8956 Wilderness Rd - Ewing VA 24258

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Called into office  
(Signature)

8/26/21  
(Date)

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C O N N E C T I N G Y O U .



Scott County Telephone Cooperative

Has 3 locations  
Student rentals

- 1. Name: WALTER P. BROOKS
- 2. Telephone Number: 865-585-2830
- 3. Address where your household or business receives (or would like to receive) Internet Service:  
223 CALWAY DR. / 407 SAND COVE
- 4. Do you currently have Internet service at this address?  Yes  No
- 5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

172 Quince Orchard

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

- 6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
- 7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
- 8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
- 9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  Not sure
- 10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
- 11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
- 12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
- 13. Comments about your Internet service:

Walter P. Brooks  
(Signature)

8/24/21  
(Date)

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C O N N E C T I N G Y O U .

Student  
Kaia Cheek's #  
rental property

1. Name: Aaron Thomas
2. Telephone Number: 276-346-6732 / ~~00000000~~
3. Address where your household or business receives (or would like to receive) Internet Service:  
290 Dewberry Dr. Ewing, VA 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Kaia Dawn Cheek  
(Signature)

8-24-21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Kaia Dorman-Cheek
2. Telephone Number: 276-346-6732
3. Address where your household or business receives (or would like to receive) Internet Service:  
169 Thistle Dr. Ewing, VA 24248

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Kaia Dorman-Cheek  
(Signature)

8-24-21  
(Date)

Larry & Gilda  
Please call back  
measurements done  
has it heard back



(865) 585-7396  
Gilda

1. Name: \_\_\_\_\_  
2. Telephone Number: \_\_\_\_\_  
3. Address where your household or business receives (or would like to receive) Internet Service:  
15063 Wilderness Rd

4-lane crossing  
have to do  
traffic control  
w/VDOT

4. Do you currently have Internet service at this address?  Yes  No  
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure

9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:  
\_\_\_\_\_

This is on  
the VDOT  
cut

This  
crosses  
from  
TW School

(Signature)

(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

COD/ to  
ck mapping

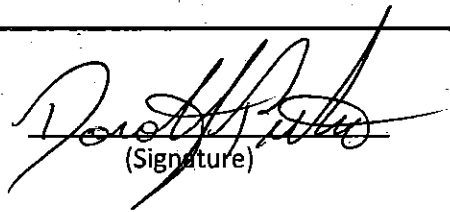
1. Name: Rich + Heather Koenig
2. Telephone Number: (276)445-1199
3. Address where your household or business receives (or would like to receive) Internet Service:  
942 McLin Hollow Rd. Rose Hill VA 24281
4. Do you currently have Internet service at this address?  Yes  No (but it is terrible)
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other Hughes Net
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Heather M Koenig  
(Signature)

8/24/21  
(Date)

Cody to  
ck mapping

1. Name: Porothy Pittman
2. Telephone Number: 865.585.5937
3. Address where your household or business receives (or would like to receive) Internet Service:  
1250 Mc Lynn Holw Rd Rt 24281
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

  
(Signature)

8-24-21  
(Date)

*Cody to ck  
mapping*

1. Name: Harold K. Hill
  2. Telephone Number: 276-445-4767
  3. Address where your household or business receives (or would like to receive) Internet Service:  
938 Mc Lin Hollow Rd Pope Hill Va *yes*
  4. Do you currently have Internet service at this address?  Yes  No *24281*
  5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
  7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other Hughes net
  8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
  9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  Not sure
  10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
  11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
  12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
  13. Comments about your Internet service:

Harold K. Hill  
(Signature)

8-24-2021  
(Date)



**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: JAMES + CAROLYN LITTRILL
2. Telephone Number: (276) 445-4652
3. Address where your household or business receives (or would like to receive) Internet Service:  
263 BETHANY Rd., Ewing, VA. 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other  Verizon
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:
- 

James R. Littrell  
(Signature)

08/24/11  
(Date)

School  
age

1. Name: Howie Turner
2. Telephone Number: 276-861-5523
3. Address where your household or business receives (or would like to receive) Internet Service:  
346 Warriors Path Rd, Ewing Va. 24248
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other other
8. What is the approximate speed of your Internet service? via sat  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:  
Not Very dependable

Howie Turner

(Signature)

8-24-21

(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Joseph Hensley
2. Telephone Number: 276-861-4121
3. Address where your household or business receives (or would like to receive) Internet Service:  
1323 Kesterson Rd. Frying
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:  
\_\_\_\_\_

Joseph Hensley  
(Signature)

8-24-21  
(Date)

1. Name: Carrie Payne

*school age child*

2. Telephone Number: 4235268338

3. Address where your household or business receives (or would like to receive) Internet Service:

219 Ely Hollow Rd Ewing VA 24248

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?

Not available  Poor reliability  Too expensive

6. If "Yes", what type of Internet service do you have?

DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?

Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?

Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure

9. How much do you pay monthly for Internet service?

Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  Not sure

10. How reliable is your Internet service?

Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?

Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?

Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Carrie Payne  
(Signature)

8/24/21  
(Date)

wise

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Jada Oakes  
2. Telephone Number: 276-365-9000  
3. Address where your household or business receives (or would like to receive) Internet Service:  
6103 Dunbar Rd Appalachia VA 24216

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other Viasat

8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure

9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:  
too expensive for the speed/amount

Jada Oakes  
(Signature)

8-26-21  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

  
**Scott County Telephone Cooperative**

1. Name: Sabbath Franklin
2. Telephone Number: 276-345-6152
3. Address where your household or business receives (or would like to receive) Internet Service:

5900 Dunbar Rd, Appataha Va

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Sabbath Franklin  
(Signature)

8-29-2011  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Judy Peck
2. Telephone Number: ~~920~~ ~~71~~
3. Address where your household or business receives (or would like to receive) Internet Service:

5910 Dunbar Rd Appalachia Va 24216

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Judy Peck  
(Signature)

8-21-2021  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you*  
Scott County Telephone Cooperative

1. Name: Randy Peck
2. Telephone Number: 276-679-6816
3. Address where your household or business receives (or would like to receive) Internet Service:

5903 Dumbow Rd, Appalachin VA 24216

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Randy Peck  
(Signature)

8-29-2021  
(Date)





Scott County Telephone Cooperative

1. Name: Mary Kansas Russell

2. Telephone Number: 276-279-3250

3. Address where your household or business receives (or would like to receive) Internet Service:

6119 Dunbar Rd. Appalachia Va 24216

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?

Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?

DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?

Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?

Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure

9. How much do you pay monthly for Internet service?

Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?

Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?

Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?

Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Mary Kansas Russell  
(Signature)

8-29-2021  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Amanda + Kendall White
2. Telephone Number: 276-701-2328
3. Address where your household or business receives (or would like to receive) Internet Service:  
6047 Dunbar Rd Appalachia VA 24216
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other Viasat
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure 192.66
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

It's way to costly for what we get.  
It's speeds and problems with over usage has changed  
our day to day lives  
Amanda + Kendall  
White (signature)  
8-24-2021  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Unny Stapleton
  2. Telephone Number: 276 393 2052
  3. Address where your household or business receives (or would like to receive) Internet Service:  
6117 Dunbar Rd. Appalachia VA 24216
  4. Do you currently have Internet service at this address?  Yes  No
  5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
  7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
  8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
  9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
  10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
  11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
  12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
  13. Comments about your Internet service:  
\_\_\_\_\_

Unny Stapleton  
(Signature)

8/29/21  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Jimmy + Regina Wilson
2. Telephone Number: 216-619-4345
3. Address where your household or business receives (or would like to receive) Internet Service:  
6006 Acorn Rd. Appalachia, VA 24216
4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Jimmy Wilson  
(Signature)

8-26-21  
(Date)

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C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Larry & Sandra Wilson
2. Telephone Number: 276-202-5098
3. Address where your household or business receives (or would like to receive) Internet Service:  
6116 Fellowship Rd Appalachia Va: 24216
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbs  Less than 25Mbps/3Mbs  Less than 100Mbps/10Mbs, but greater than 25Mbps/3Mbs  Greater than 100Mbps/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Sandra Wilson  
(Signature)

8-26-21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Robert Oakes
2. Telephone Number: ~~800~~-276-807-5822
3. Address where your household or business receives (or would like to receive) Internet Service:  
6043 Dunbar Rd. Appalachia Va 24216
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Robert Oakes  
(Signature)

8-26-21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: T. J. MARSHALL
  2. Telephone Number: 276-679-4184
  3. Address where your household or business receives (or would like to receive) Internet Service:  
6035 Dunbar Rd APPALACHIA VA 24216
  4. Do you currently have Internet service at this address?  Yes  No
  5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
  7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
  8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
  9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
  10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
  11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
  12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
  13. Comments about your Internet service:

  
(Signature)

8-26-21  
(Date)

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C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you*  
Scott County Telephone Cooperative

1. Name: PATRICIA RAMEY
2. Telephone Number: 276-323-0164
3. Address where your household or business receives (or would like to receive) Internet Service:  
1039 Dunbar Rd Appalachia VA 24216
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other hughes net
8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Patricia Ramey  
(Signature)

8/27/21  
(Date)

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C O N N E C T I N G Y O U .





Scott County Telephone Cooperative

1. Name: Larry Lambert  
 2. Telephone Number: (276) 679-1653  
 3. Address where your household or business receives (or would like to receive) Internet Service:  
6030 Acorn Road Appalachia, VA 24216

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure

9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Larry L Lambert  
(Signature)

8-24-21  
(Date)

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C O N N E C T I N G Y O U .



Scott County Telephone Cooperative

1. Name: Larra & Sean Ratliff  
 2. Telephone Number: (276) 219-2951 / (276) 395-0128  
 3. Address where your household or business receives (or would like to receive) Internet Service:  
6022 Acorn Rd Appalachia, VA 24216

4. Do you currently have Internet service at this address?  Yes  No  
 5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
 IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite  
 7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_  
 8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure  
 9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure  
 10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable  
 11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day  
 12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:  
 \_\_\_\_\_

Larra Ratliff (Signature) 8-24-2021 (Date)

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C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Amber Stidham
2. Telephone Number: 276-393-9323
3. Address where your household or business receives (or would like to receive) Internet Service:  
6147 Dunbar R.D. Appalachia VA
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other AT&T
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

  
(Signature)

8/24/21  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: RAIPH STIDHAM
2. Telephone Number: 276-679-0699
3. Address where your household or business receives (or would like to receive) Internet Service:  
6145 DUNBAR RD APPALACHIA VA 24216
4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other HUGS NET
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Ralph Stidham  
(Signature)

8-24-21  
(Date)

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C O N N E C T I N G Y O U .



Scott County Telephone Cooperative

1. Name: Roger + Rosemary Browning  
 2. Telephone Number: 276-639-1101  
 3. Address where your household or business receives (or would like to receive) Internet Service:  
6133 Dunbar Rd. Appalachia, Va. 24216

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?  
 Less than 10Mbs/1Mbs  Less than 25Mbs/3Mbs  Less than 100Mbs/10Mbs, but greater than 25Mbs/3Mbs  Greater than 100Mbs/10Mbs  Not sure

9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

---

Roger + Rosemary Browning (Signature)      8-24-2021 (Date)

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C O N N E C T I N G Y O U .



Scott County Telephone Cooperative

1. Name: Kenneth McFarland  
 2. Telephone Number: 276 701-7129  
 3. Address where your household or business receives (or would like to receive) Internet Service:  
10143 Dunbar Rd. Appalachia, Va. 24216

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_

8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure

9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Kenneth McFarland  
(Signature)

8-24-2021  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Misty Shirks
2. Telephone Number: 276-219-2981
3. Address where your household or business receives (or would like to receive) Internet Service:  
6131 Dunbar rd. Appalachia, Va 24216
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite N/A
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other N/A
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure N/A
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  Not sure N/A
10. How reliable is your Internet service? N/A  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last? N/A  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

We need reliable internet

Misty Shirks  
(Signature)

08/24/21  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: James Comer  
2. Telephone Number: 540-746-6279  
3. Address where your household or business receives (or would like to receive) Internet Service:  
6127 Dunbar Rd.

4. Do you currently have Internet service at this address?  Yes  No  
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other MUSNET

8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure

9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

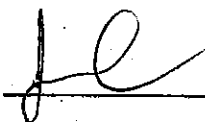
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Slow Slow



(Signature)

8/24/2021

(Date)



**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Tony + Tina Nunley
2. Telephone Number: 276-679-0351
3. Address where your household or business receives (or would like to receive) Internet Service:  
6049 Dunbar Rd, Appalachia, VA 24216
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other DishNet
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Tina M Nunley  
(Signature)

8-24-2021  
(Date)

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: ROGER D. DAY
  2. Telephone Number: NONE
  3. Address where your household or business receives (or would like to receive) Internet Service:  
6051 ACORN RD APPALACHIA, VA. 24216
  4. Do you currently have Internet service at this address? \_\_\_ Yes  No
  5. If "No" what is the main reason why you do not have Internet service at this address?  
\_\_\_ Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*
6. If "Yes", what type of Internet service do you have?  
\_\_\_ DSL \_\_\_ Cable \_\_\_ Fiber \_\_\_ Fixed Wireless \_\_\_ Hot Spot on Mobile Device \_\_\_ Satellite
  7. Who is your Internet service provider?  
\_\_\_ Verizon \_\_\_ Point Broadband \_\_\_ Xfinity \_\_\_ Other \_\_\_\_\_
  8. What is the approximate speed of your Internet service?  
\_\_\_ Less than 10Mbps/1Mbps \_\_\_ Less than 25Mbps/3Mbps \_\_\_ Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps \_\_\_ Greater than 100Mbps/10Mbps \_\_\_ Not sure
  9. How much do you pay monthly for Internet service?  
\_\_\_ Between \$35 and \$45 \_\_\_ Between \$45 and \$55 \_\_\_ Between \$55 and \$65 \_\_\_ More than \$65  
\_\_\_ Not sure
  10. How reliable is your Internet service?  
\_\_\_ Completely Unreliable \_\_\_ Somewhat Reliable \_\_\_ Very Reliable
  11. On average, how long does a typical Internet service outage last?  
\_\_\_ Only a few minutes \_\_\_ 1-3 Hours \_\_\_ 3-6 Hours \_\_\_ 6-24 Hours \_\_\_ More than 1 Day
  12. How satisfied are you with your Internet service?  
\_\_\_ Completely Dissatisfied \_\_\_ Somewhat Satisfied \_\_\_ Very Satisfied
  13. Comments about your Internet service:  
\_\_\_\_\_

Roger D. Day  
(Signature)

8-25-21  
(Date)

149 Woodland Street / Post Office Box 487 / Gate City, VA 24251 / Tel: (276) 452-9119 / Fax: (276) 452-2447

C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Greg & Phyllis Hall
2. Telephone Number: 276-679-0105
3. Address where your household or business receives (or would like to receive) Internet Service:  
6045 Acorn Rd. Appalachia, VA 24216
4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other Hughes Net
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Phyllis Hall  
(Signature)

8-24-21  
(Date)

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C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Steven Boggs
2. Telephone Number: (276) 365-6688
3. Address where your household or business receives (or would like to receive) Internet Service:  
6048 Acorn Rd. Appalachia VA, 24216

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
13. Comments about your Internet service:

Steven Boggs  
(Signature)

8-24-21  
(Date)

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C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Freda Vowell
2. Telephone Number: 679-2549
3. Address where your household or business receives (or would like to receive) Internet Service:  
6018 Acorn Rd Appalachia, VA 24216

4. Do you currently have Internet service at this address?  Yes  No
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Had verizon jetpack and it was terrible so we cancelled it.

Freda Vowell  
(Signature)

8-24-2021  
(Date)



Scott County Telephone Cooperative

1. Name: Ronald DAY

2. Telephone Number: 276-679-4327

3. Address where your household or business receives (or would like to receive) Internet Service:  
6037 Acorn Rd. APPALACHIA VA.

4. Do you currently have Internet service at this address?  Yes  No

5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
 IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite

7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other Hughes Net.

8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure

9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure

10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable

11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day

12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied

13. Comments about your Internet service:

Ronald Day  
 (Signature)

8.25.21  
 (Date)

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C O N N E C T I N G Y O U .

**SCTC**  
*Connecting you.*  
Scott County Telephone Cooperative

1. Name: Sara Adams
  2. Telephone Number: NA
  3. Address where your household or business receives (or would like to receive) Internet Service:  
6114 Fellowship Road Appaloosa, Va.
  4. Do you currently have Internet service at this address?  Yes  No
  5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive
- IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.*
6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite
  7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_
  8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure
  9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure
  10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable
  11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-6 Hours  6-24 Hours  More than 1 Day
  12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied
  13. Comments about your Internet service:

Sara Adams  
(Signature)

8-26-21  
(Date)

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C O N N E C T I N G Y O U .

1. Name: Cassandra Douglas  
2. Telephone Number: 276 639 0899  
3. Address where your household or business receives (or would like to receive) Internet Service: 502 Cassandra DR. Big Stone Gap, VA 24219

4. Do you currently have Internet service at this address?  Yes  No  
5. If "No" what is the main reason why you do not have Internet service at this address?  
 Not available  Poor reliability  Too expensive

IF YOUR ANSWER WAS NO TO QUESTION# 4 ABOVE, YOUR QUESTIONNAIRE IS COMPLETE.  
IF YES, PLEASE CONTINUE.

6. If "Yes", what type of Internet service do you have?  
 DSL  Cable  Fiber  Fixed Wireless  Hot Spot on Mobile Device  Satellite  
7. Who is your Internet service provider?  
 Verizon  Point Broadband  Xfinity  Other \_\_\_\_\_  
8. What is the approximate speed of your Internet service?  
 Less than 10Mbps/1Mbps  Less than 25Mbps/3Mbps  Less than 100Mbps/10Mbps, but greater than 25Mbps/3Mbps  Greater than 100Mbps/10Mbps  Not sure  
9. How much do you pay monthly for Internet service?  
 Between \$35 and \$45  Between \$45 and \$55  Between \$55 and \$65  More than \$65  
 Not sure  
10. How reliable is your Internet service?  
 Completely Unreliable  Somewhat Reliable  Very Reliable  
11. On average, how long does a typical Internet service outage last?  
 Only a few minutes  1-3 Hours  3-5 Hours  6-24 Hours  More than 1 Day  
12. How satisfied are you with your Internet service?  
 Completely Dissatisfied  Somewhat Satisfied  Very Satisfied  
13. Comments about your Internet service:

Cassandra Douglas (Signature) 08242021 (Date)

