

Application to DHCD Submitted through CAMS

Roanoke County

Roanoke Universal Cox Partnership

Application ID: 86509022021111645
Application Status: Pending
Program Name: Virginia Telecommunications Initiative 2022
Organization Name: Roanoke County
Organization Address: 5204 Bernard Drive, SW, Rm 421
Roanoke, VA 24018
Profile Manager Name: Tom Rowley
Profile Manager Phone: (540) 315-0778
Profile Manager Email: trowley@roanokecountyva.gov

Project Name: Roanoke Universal Cox Partnership
Project Contact Name: Bill Hunter
Project Contact Phone: (540) 777-8552
Project Contact Email: bhunter@roanokecountyva.gov
Project Location: 5925 Cove Road
Roanoke, VA 24019-2403
Project Service Area: Roanoke County

Total Requested Amount: \$1,535,264.00

Required Annual Audit Status: Accepted

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Budget Information:

Cost/Activity Category	DHCD Request	Other Funding	Total
Telecommunications	\$1,535,264.00	\$1,597,927.00	\$3,133,191.00
Other: Cox Universal Coverage	\$1,535,264.00	\$1,597,927.00	\$3,133,191.00
Total:	\$1,535,264.00	\$1,597,927.00	\$3,133,191.00

Budget Narrative:

This one of several projects submitted to achieve universal coverage in the County of Roanoke. This project will bring high speed to 369 homes in 11 separate areas of the County.

Questions and Responses:

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:

Rural areas of Roanoke County have been in need of broadband connectivity for many years. An increasing number of requests from citizens over the years have brought much attention to these areas of the County. There are 396 homes without access to broadband internet speeds in the areas of the County covered in this project.

This proposed project fits into our larger plan to achieve universal broadband coverage for Roanoke County. Roanoke County supports the Commonwealth Connect efforts to bring functional universal broadband to Virginia. And we are focused on digital equity and making broadband affordable for all.

A citizen-based High-Speed Internet Survey was launched in December 2019 to give citizens a way to self-report where minimum broadband speeds are TRULY availability at street level. Along with an online survey promoted by Roanoke County, 10,250 printed survey postcards were mailed to targeted areas of the County, with an additional 14,000 printed survey postcards distributed to the homes of Roanoke County students through a partnership with Roanoke County Schools. A total of 2,608 surveys were returned which allowed staff to map citizen responses and target the unserved area of the County as described below.

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 County of Roanoke conducted extensive outreach in the form of citizen surveys and direct contact with citizens in the area. Roanoke County provides a data collection tool with feedback loops where citizens report lack of broadband service, the most recent version is:

<https://www.roanokecountyva.gov/FormCenter/CommIT-22/Broadband-Comments-133>

The county also refers to the I3 connectivity explorer <https://internet-is-infrastructure.org/>

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; the Broadband USA and ESRI broadband availability App
<https://broadbandusa.maps.arcgis.com/apps/webappviewer/index.html?>

USDA ReConnect maps, and FCC CAF 2 maps to determine coverage; then follows up with requests to service providers asking for service availability.

Wireless 4G Broadband Providers

Company Name

Download Speed

AT&T MOBILITY

768 Kbps - 1.5 Mbps

NTELOS

768 Kbps - 1.5 Mbps

SPRINT

768 Kbps - 1.5 Mbps

T-MOBILE

768 Kbps - 1.5 Mbps

US CELLULAR

768 Kbps - 1.5 Mbps

VERIZON WIRELESS

768 Kbps - 1.5 Mbps

Wireless LTE Broadband Providers

Company Name

Download Speed

AT&T MOBILITY

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Minimum 4 Mbps

T-MOBILE

Minimum 4 Mbps

US CELLULAR

Minimum 4 Mbps

VERIZON WIRELESS

Minimum 4 Mbps

Wireline (DSL) Broadband Providers

Company Name

Download Speed

VERIZON VIRGINIA LLC

Maximum 5 Mbps

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:

There are non-satellite RDOF areas with in this proposal identified in Section 4 and Attachment 3.

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:

Cox Communications, the co-applicant, has been awarded the RDOF are with in this application. There are 30 Passings that fall within the RDOF Award. The "build times" of these areas will be accelerated greatly under the VATI program.

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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:

Our project area is unserved as each section is in rural part of the County where current speeds are less than 10 Mbps Down / 1 Mbps Up. We used a combination of the FCC Maps, USDA Reconnect Maps, BroadbandNow.com, and the citizen broadband reports we collected to determine this. For each citizen broadband report we received we followed up with the citizen(s) inquiring if they had checked with other providers.

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:

- 396
- 30
- 0
- 0

e. 396 - Our project area is unserved as each section is in rural part of the County where current speeds are less than 10 Mbps Down / 1 Mbps Up. We used a combination of the FCC Maps, USDA Reconnect Maps, BroadbandNow.com, and the citizen broadband reports we collected to determine this. For each citizen broadband report we received we followed up with the citizen(s) inquiring if they had checked with other providers.

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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:

Of the 11 project areas, Mount Chesnut Road, Dawnwood Rd./Tall Oaks, Highland Rd., and Webb Road will be incorporated into the existing hybrid fiber-coax (HFC) network; the remaining project areas will be fiber-to-the-home builds. Both network configurations are owned and operated by Cox Communications and are capable of providing residential and home-based business customers with download speeds of up to 940 Mbps and upload speeds of up to 35 Mbps through the Docsis 3.1 platform.

Cox provides internet speeds ranging from 25Mbps/3Mbps to up to 940 Mbps/35Mbps. Cox continues to offer a 25Mbps/3Mbps service tier as a low-cost option, ideal for up to three devices and light web surfing, email, and social networking; this is an economical solution for customers who don't want to pay for higher speeds they don't need and won't use.

All Cox internet plans come with access to more than three million WiFi hotspots nationwide.

(*if the build passes businesses that are unserved...)The build will also allow our commercial services team, Cox Business, to extend their services to any unserved businesses along the network expansion route, giving them access to the suite of business services available, including broadband speeds up to 100 gbps.

Cox provides internet speeds ranging from 10Mbps/1Mbps to up to 940 Mbps/35Mbps. Cox continues to offer a 10Mbps/1Mbps service tier as a low-cost option, ideal for up to three devices and light web surfing, email, and social networking; this is an economical solution for customers who don't want to pay for higher speeds they don't need and won't use.

Residential Pricing Structure:

Package

Speed (up to)

Rack Rate (monthly)

New Customer Promo (monthly)

Starter 10

10/1 Mbps

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\$44.99

\$29.99

Connect2Compete*

25/3 Mbps

\$9.95

\$9.95

Straight Up Internet

25/3 Mbps

\$50.00

\$50.00

Essential 50

50/3 Mbps

\$65.99

\$39.99

Preferred 150

150/10 Mbps

\$83.99

\$59.99

Ultimate 500

500/10 Mbps

\$99.99

\$79.99

Gigablast

940/35Mbps

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\$119.99

\$99.99

*for qualifying families

Prices include monthly charges and applicable discounts. Promotional pricing may differ depending on the customer's decision to bundle services and expiration of/changes to promotional pricing. One-time charges, activation fees and monthly equipment fees may apply.

Business/Commercial Internet Pricing Structure:

Cox Business also offers customized enterprise internet solutions, dedicated fiber, HFC internet, and managed WiFi solutions to meet individual needs of businesses. With symmetrical speeds of up to 10+ Gbps, there are solutions to support any size business.

In response to the increase of residents shifting to a work-from-home model, Cox Business launched an enterprise-grade work-at-home connectivity solution which would be available to residents benefiting from this last mile extension. This is a separate internet connection that would go directly to the employee's home and will have the capability to provide remote staff with company-provided services, including broadband, WiFi, McAfee endpoint security and MalBlock to help ensure staff members have the same options for connectivity they would have if they were working in the office.

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:

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Cox's highly redundant and resilient network is managed around the clock by a full staff of nationwide network professionals that can holistically monitor and manage the Cox network both physically from network operations centers and 100 percent virtually, if needed. Their forward-thinking network management and service assurance philosophy means they have software-enabled and virtualized significant portions of their network to proactively and reactively solve any temporary customer and network issues in a timely and efficient manner.

Cox operates a high-speed, national fiber optic backbone comprised of tens of thousands of fiber miles. The backbone is self-healing through strategic deployment of core infrastructure components. Multiple diverse connections help ensure backbone locations are not isolated in the event of an outage and that they maintain ample capacity to handle peak traffic periods. Their experience includes keeping customers online and connected during wildfires, mudslides, severe weather events and numerous other natural disasters.

Through the video franchise with Roanoke County, Cox Communications has built and maintained a hybrid fiber-coax (HFC) network in the County for more than 40 years for distribution of the company's services (voice, video, data, security, business services) to its subscribers. The technology connects our subscribers to one of the company's 21 critical facilities located in Virginia. These critical facilities contain the company's core network hardware and connections to the internet and public switched telephone network. All network hardware and network connections in our critical facilities have at least two layers of redundancy.

Hybrid fiber coaxial (HFC) networks send signals from the Cox's critical facilities to the communities we service through fiber optic cables. At the local community, a box called an optical node translates the signal from a light beam to radio frequency (RF) and sends it over coaxial cable lines for distribution to our residential and business subscribers. The fiberoptic backbone feeding the communities we service provide adequate bandwidth to allow for timely future expansion and new bandwidth-intensive services.

Cox trains and employs engineers and technicians to ensure we maintain a 99.999% network reliability. Again, the network and hubsite are monitored both locally and nationally 24 hours a day and 365 days a year.

The company constantly monitors its network and upgrades accordingly in order to meet subscriber demand. Typical surges in broadband traffic occur in the evenings, on weekends and on holidays. In light of the recent COVID crisis and the number of individuals working from home and students connecting virtually for their education, Cox implemented their processes for peak use to respond appropriately to meet the demand from this shift in usage. They've also successfully virtualized their network operations by executing long-term business continuity strategies, implementing new leading-edge collaboration and predictive analytic tools, providing full functionality mobile workstations and equipping their network operations teams with robust tools to work remotely.

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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:

Roanoke County is actively working to improve broadband connectivity throughout the community, as part of the "Connect Roanoke County to the World" Strategic Initiative outlined in the [County's 2016 Community Strategic Plan](#).

This year a regional partnership was formed between Roanoke, Botetourt, Franklin Counties, and the Roanoke Valley Broadband Authority. Local providers from Cox Communications, Comcast, B2X On-Line, Segra, Lumos, Blue Ridge Towers, and Shentel all attended. Speakers from the Governors Office and from Revitalize Virginia made presentations to the group on the universal coverages plans of this years VATI Program.

Citizen can find additional information and express concerns at:

<https://www.roanokecountyva.gov/ruralbroadband>

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:

The plan demonstrates a commitment to reach the 2022 completion date with a steady and phased-in process to include: creating project account, performing field survey for construction, completing Dominion Power pole application process, designing project, securing VDOT permits and private property easements, ordering project materials, setting power supply units, performing aerial and underground construction, activating the network, and releasing the addresses. Cox Communications personnel overseeing the planning and construction phases have thoroughly reviewed the project management plan and timeline to confirm that all resources are available to complete the project by the required time frame.

This project has passed engineering and financial commit stages and is approaching final design. Attachment 6 –

Timeline/Project Management Plan is included and identifies all tasks, staffing, contracting work, with estimated

start and completion dates.

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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:

Cox is familiar with the VATI grant process, having worked with localities for each VATI grant cycle since the inception of the program.

Cox was part of one of the first VATI awards made in 2016, successfully partnering with Gloucester County to bring last mile broadband service to more than 100 homes and businesses in a previously unserved area of the County.

Cox is currently in the planning phase of a 2021-awarded VATI grant project in Chesapeake; we are on track to have customers connected within the 12-month deadline for project completion.

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:

The matching funds invested are listed in Attachment 9 - Funding Sources Table. Those funds include all of the costs for the project, including all of the planning, engineering, materials and labor for the installation of the facilities necessary for this project.

The matching funds also include the costs of identifying and acquiring any necessary easements.

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:

Beyond the leverage of using County resources and support for easements and working with VDOT, residents, and the power companies; the co-applicants plan to leverage strong relationships to provide distance learning and workforce training working with the Roanoke County Public Schools (RCPS) and Virginia Western Community College (VWCC).

We will also leverage support from our longstanding working relationship with the Roanoke Regional Commission. In addition, the Roanoke County Board of Supervisors appropriated funds in support of the program, coupled with dedicated time of at least 3 County staff to work on the resulting project. We are also leveraging existing resources which continue work on the five current projects funded by the Roanoke County Board of Supervisors bringing broadband to 350 homes in the County. The County regularly sponsors Civic League meetings where broadband needs are discussed. From those meetings, documents are created from the ideas and questions raised by the residents for use in any potential future projects and will be important assets for this new project and continue the Roanoke County goal for universal coverage.

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.

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Answer:

a. The residents of Roanoke County have been very vocal over the past several years regarding the need for the extension of reliable broadband connectivity to the more rural areas of the County. Cox actively promotes its products and services in Roanoke County through a multi-faceted marketing campaign that includes both direct and indirect sales, outdoor billboards, digital advertising and television commercials (<https://www.youtube.com/watch?v=v6dzz-17pK4>). This build will benefit from all national and local advertising investments by Cox Communications.

In addition to traditional marketing, Cox is also a strong supporter of local businesses and nonprofits through sponsorships at large venues and events that attract attendees from all across the region like Virginia Tech Football,

Cox's YouTube channel is full of commercials, PSAs, and videos highlighting products, services, and community support programs, too.

Cox and Roanoke County will also work together on a public relations plan to announce the award and the extension of services throughout the county to bring awareness including but not limited to a joint press release and media event (in-person or virtual based on current conditions).

In addition to Cox's efforts, the County will leverage its in-house channels including its website, Roanoke Valley Television and various social media outlets to market the availability of service as a result of this project. Due to the nature of the impact and the potential community response, it is expected that this project will also be covered by local television, radio, and newspaper.

Finally, Cox has been serving Roanoke County for more than 40 years with local employees servicing homes and businesses throughout the region. The Cox brand is well-recognized as a local technology leader and a company that is committed to the communities it serves.

The anticipated take rate is 60-65 percent based on previous post-pandemic projects.

b. Cox has several resources for families and businesses in support of digital literacy and maximizing broadband capabilities. This summer, Cox announced a new digital learning platform available to Connect2Compete customers to keep kids engaged in academics while they're out of school. MyFuture is The Boys & Girls Clubs of America's digital platform that empowers children and teens to learn new skills, share accomplishments and earn recognition and rewards via gamification in a safe and fun online environment. This tool is accessible from Cox's Digital Academy, our online learning platform full of computer literacy tips, education videos, tutorials and interactive games. The Digital Academy is a collaboration between several partners, including the American Library Association, DigitalLearning.org, Common Sense media, and Connect Home.

Cox's YouTube channel ([youtube.com/user/CoxCommTV](https://www.youtube.com/user/CoxCommTV)) has a ton of resources available to customers including how to get the most out of their products and how to troubleshoot simple issues with technology like resetting a modem.

For business customers, CoxBlue.com has a ton of resources for small and medium sized businesses – everything from blog posts on small business trends to how to reopen your business after a shutdown.

Roanoke County Public Libraries offer a wide range of free computer, Internet use and resource instruction to help people locate, evaluate, and use online resources. County libraries are vital centers for access to digital literacy and as library users continue to change, the County libraries continually evolve to meet the digital needs of our community.

Launchpads offer hours of interactive learning and play for children. There's even a section for parents to gain feedback on time spent on the device.

Roanoke County Public Library has placed focused on community digital literacy programs over the past several years, offering free classes most every month at each Library location. Topics range from basic usage of the latest consumer technologies to specific classes dedicated to popular software (Microsoft Office applications, photography apps, social

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media, networking, etc.) and other popular topics.

Cox has several resources for families and businesses in support of digital literacy and maximizing broadband capabilities, addressing the ongoing needs throughout the pandemic. In addition to being an early signee of the FCC's Keep America Connected pledge at the onset of the pandemic in 2020, several digital equity efforts by Cox have recently been put into place:

- Cox [announced its participation in the FCC's Emergency Connectivity Fund](#) to deliver internet services to students, educational staff and library patrons who would otherwise lack a sufficient connection to the internet for remote learning and remote library services. For more information on the FCC's ECF program, visit cox.com/ecf.
- Cox is a participant in the FCC's [Emergency Broadband Benefit](#) program which provides temporary financial assistance for internet service. Eligible families may qualify to receive up to \$50 off their monthly bill based on their current internet service and equipment rental, or up to \$75 if they live in a tribal area. Cox Connect2Compete customers are eligible for this benefit. For more information on the FCC's EBB program, visit cox.com/ebb.
- [Cox announced that the temporary connection speed increase for Connect2Compete](#), prompted by the COVID-19 pandemic, would become the new standard speed for Connect2Compete internet service. The connection speed was bolstered from 25 Mbps to 50 Mbps.
- Last year, Cox suspended late fees and extended payment relief offerings for customers in the Connect2Compete program who expressed an inability to pay due to pandemic hardships.
- [The Digital Academy](#) is the digital literacy arm of Cox's Connect2Compete program designed to connect families, educators, community leaders and students with free access to tips, educational videos and tutorials to ensure safe and effective online behavior. This platform is continuously updated with fresh and relevant information.
- Cox [added the MyFuture platform](#) from the Boys and Girls Clubs of America recently to the Digital Academy. My Future empowers kids and teens to learn new skills, share accomplishments and earn recognition via gamification in a safe and fun online environment.

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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:

Cox Communications Project Manager: **Stephanie Bailey**, Planning & Construction Manager

Cox Communications Liaisons: Jeff Merritt, Roanoke Market Vice President and Sarah Buck, Public Affairs Sr. Manager

Roanoke County is working with Cox Communications, a privately-held, nationally recognized provider of broadband, digital cable television and other telecommunications services. With 125,000 miles of network infrastructure nationwide, Cox Communications is the third largest telecommunications corporation in the United States. Cox and Roanoke County entered into their first cable television franchise agreement more than four decades ago. Since that time the county and Cox have experienced a collaborative and mutually beneficial working relationship, including recent efforts to connect unserved residents throughout the County. Despite these efforts, certain rural areas continue to present great challenges; this grant opportunity presents a viable means and solution to expand services where it would otherwise be financially unfeasible.

County of Roanoke Project Manager: Bill Hunter, Director of Communications & Information Technology. Past project experience includes - Earth Station Satellite transceivers replacement for the USAF Air Mobility Command, Joint Law Enforcement stand-up and deployment for the 1996 Centennial Olympic Games (DOD Office of Special Events), activation of the Law Enforcement Information Center for the 1997 Presidential Inauguration (US Secret Service/Communications Management Control Activity) , Roanoke County Public Safety Center construction (IT Issues), and the Western Virginia Regional Jail construction project (IT Issues)

County of Roanoke Coordination: Heather Kluge, Business Coordinator - 10 years of grant Management Experience (Police, Fire, E911, & Information Technology)

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:

As a nationwide company, Cox uses internal employees and corporate contracted resources to complete and perform the proposed work as outlined in this grant application. Cox is able to leverage its scale when it comes to the purchasing of equipment and establishing reasonable contract rates for additional labor as needed. Therefore, Cox has the benefit of not having to request quotes for individual projects; the costs are standard so they're able to build them in to the costs presented in the table provided and are not adjusted based on geographic location, project size, source of funding, or any other factors. Contracted rates are considered proprietary. It is our hope that this explanation will be sufficient in demonstrating to the review board that Cox has done its due diligence to negotiate rates that reflect a responsible use of resources both for the planning and completion of these last mile projects.

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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:

- a. Total VATI funding request

- b. Number of serviceable units
(up to 125 points)

Answer:

a. \$1,535,264.00

b. 396

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:

This proposed project fits into our larger plan to achieve universal broadband coverage for Roanoke County. This proposed project fills many gaps in the rural areas of the County. One of our goals is to provide quality and reliable broadband with redundancy and future proof so all Roanoke County residents and businesses benefit. Our interactive project map documents the project areas. We continue to work with residents who identify areas where service is unreliable, non-existent, or not affordable. Through ongoing speed test and report gathering; we will continue to build project areas for broadband service. Not until after all areas are served with affordable and reliable broadband, will we consider our work done.

The proposed project impacts 396 homes and home-based businesses in the area, through the introduction of broadband will have a positive economic impact. Providing broadband to these businesses allows them to complete in the global economy and include a telecommuting workforce as part of their growth plans; providing more jobs and more revenue for the County.

Roanoke County supports the Commonwealth Connect efforts to bring functional universal broadband to Virginia. And we are focused on digital equity and making broadband affordable for all. We review our Broadband plan on an annual basis. Roanoke County is also equally concerned about and working to solve challenges identified in the most recent Commonwealth Connect 2.0. We are working to reduce cost of equipment; implement means to utilize shared

infrastructure for network deployment through support of reduced or no fees for pole attachments or other sharing of infrastructure such as conduit; support waiving the cost of easements for broadband deployment; and through our ongoing broadband survey and community outreach continue filling gaps and identifying borders of coverage; and working with ISPs to focus on technologies and projects which avoid or create difficult to serve areas

Application to DHCD Submitted through CAMS

Roanoke County

Roanoke Universal Cox Partnership

20. 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:

N/A

Attachments:

Map(s) of project area, including proposed infrastructure

Attachment1ProjectAreaMaps913202140141.pdf

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

Attachment2DocumentationonFederalFundingArea922021114643.pdf

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

Attachment3RDOFAwardedAreasincludedinVATIApplication913202135641.pdf

Documentation that proposed project area is unserved based on VATI criteria

Attachment4DocumentationUnservedAreaVATICriteria922021114734.pdf

Application to DHCD Submitted through CAMS

Roanoke County

Roanoke Universal Cox Partnership

Passings Form (Use template provided)

Attachment5PassingsForm913202135709.pdf

Timeline/Project Management Plan

Attachment7TimelineprojectManagementPlan913202135726.pdf

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

Attachment8MOUbetweenapplicantcoapplicant914202115007.pdf

Funding Sources Table (Use template provided)

Attachment9FundingSourcesTable913202135740.pdf

Documentation of Match Funding

Attachment10DocumentationofMatchingFunding913202135803.pdf

Letters of Support

Attachment11LettersofSupport913202135826.pdf

Derivation of Cost/Project Budget (Use template provided)

Attachment12DerevationofCosts913202135836.pdf

Documentation of Supporting Cost Estimates

Attachment13DocumentationofSupportingCostEstimatesRoanokeCounty913202135846.pdf

Two most recent Form 477 submitted to the FCC or equivalent

Attachment14TwoMostRecent477FormsSubmittedtotheFCC913202135858.pdf

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

RoCoCoxProposalsPoint92202111030.zip

For wireless applicants: shapefiles, in .zip file form, indicating RSSI projections in the application area

RoCoCoxProposalsPolygon92202111039.zip

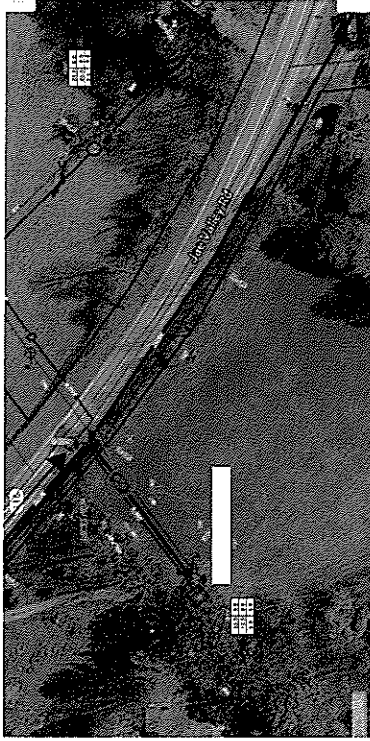
Application to DHCD Submitted through CAMS

Roanoke County

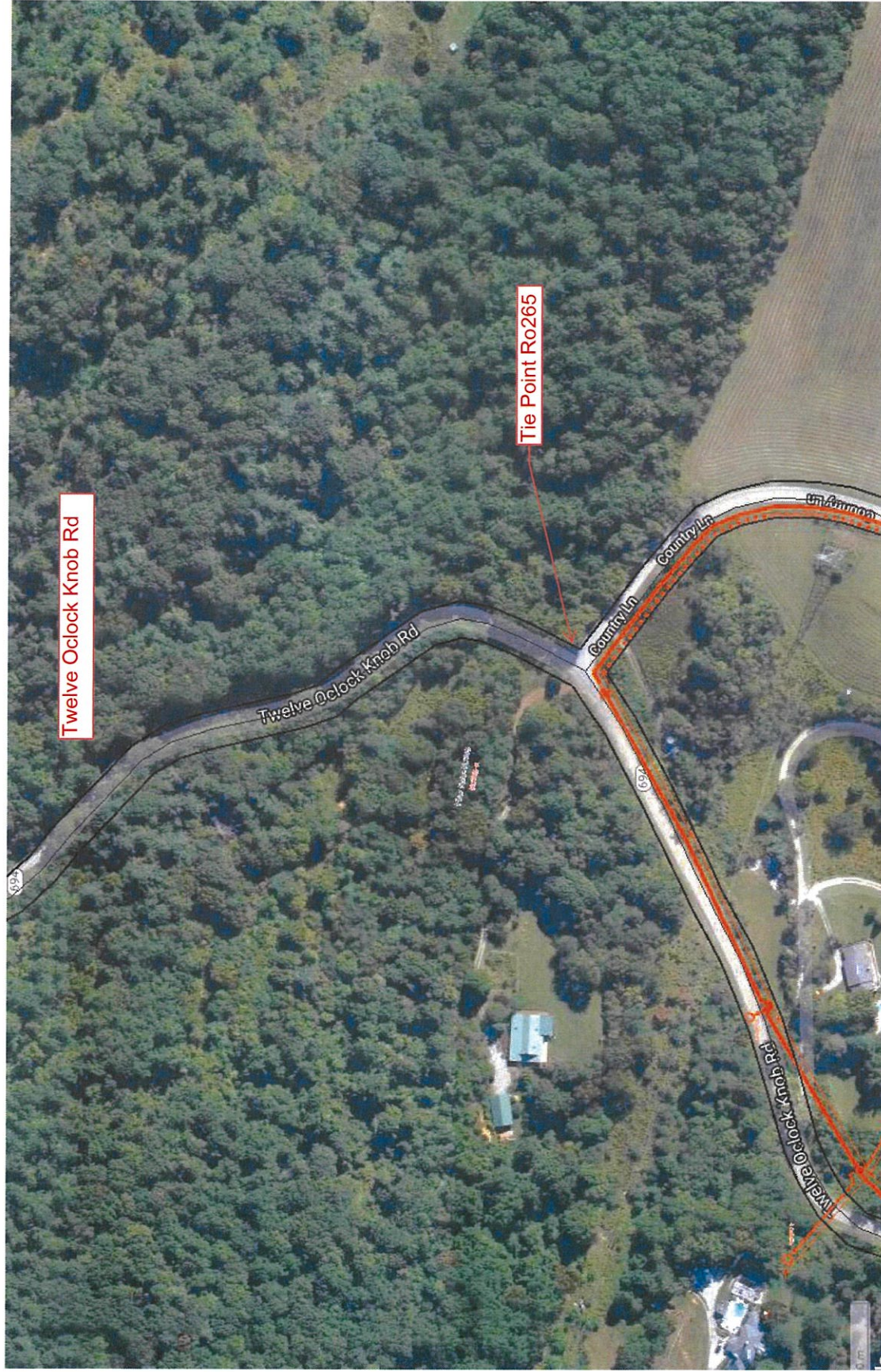
Roanoke Universal Cox Partnership

Notes:

Thank you for the opportunity to extend broadband service to the unserved residence of Roanoke County. This project meets both the spirit and intent of the Virginia Telecommunication Initiative (VATI). I believe these investments have a significant impact on economic development by increasing options for residents to engage in virtual learning, access to telehealth, and telework. These projects also allow opportunities for more home-based businesses to thrive. With the demand for broadband connectivity higher than ever, I am optimistic that VATI submissions like these will be ranked in the top of submissions by the Department of Housing and Community Development.









Poor Mountain Rd

Tie Point Ro104



Details Layers Help

Search: []

Layers: []

Details: []

Attributes Details

Amplifier: 2VAU1 19

Construction Status: In South

Specifics: (AMP-FIX) LARK 1, 2, 3 (R) 2/1

Map Date: 7/20/19

Map Name: []

Display Emergency Range: M

Total Flooding Area: 13.33

Location: []

Select Code: 18775529333 (R)

Project: []

Amplifier Model: 2A 2200W 750/20

Powering Mode: Through

Map Date: 7/20/19

Map Name: 180905

Optical Path End: R01805E

Optical Path Leg End: []

Date Installed: []

Associated Structures: []

Map Date: 7/20/19

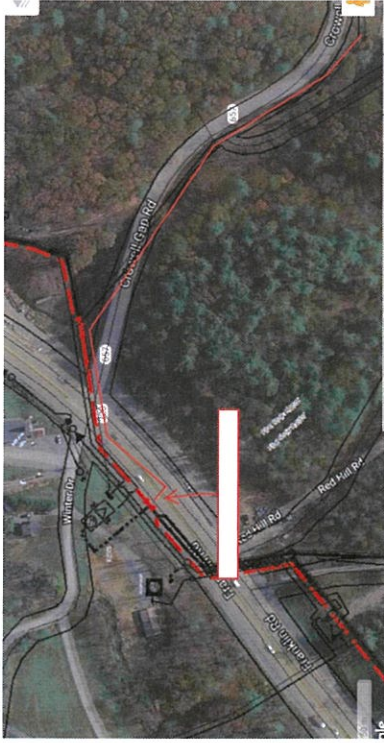
Map Name: 180905

Signal Details

Data Capture Forms

Related Photos

Screenshot







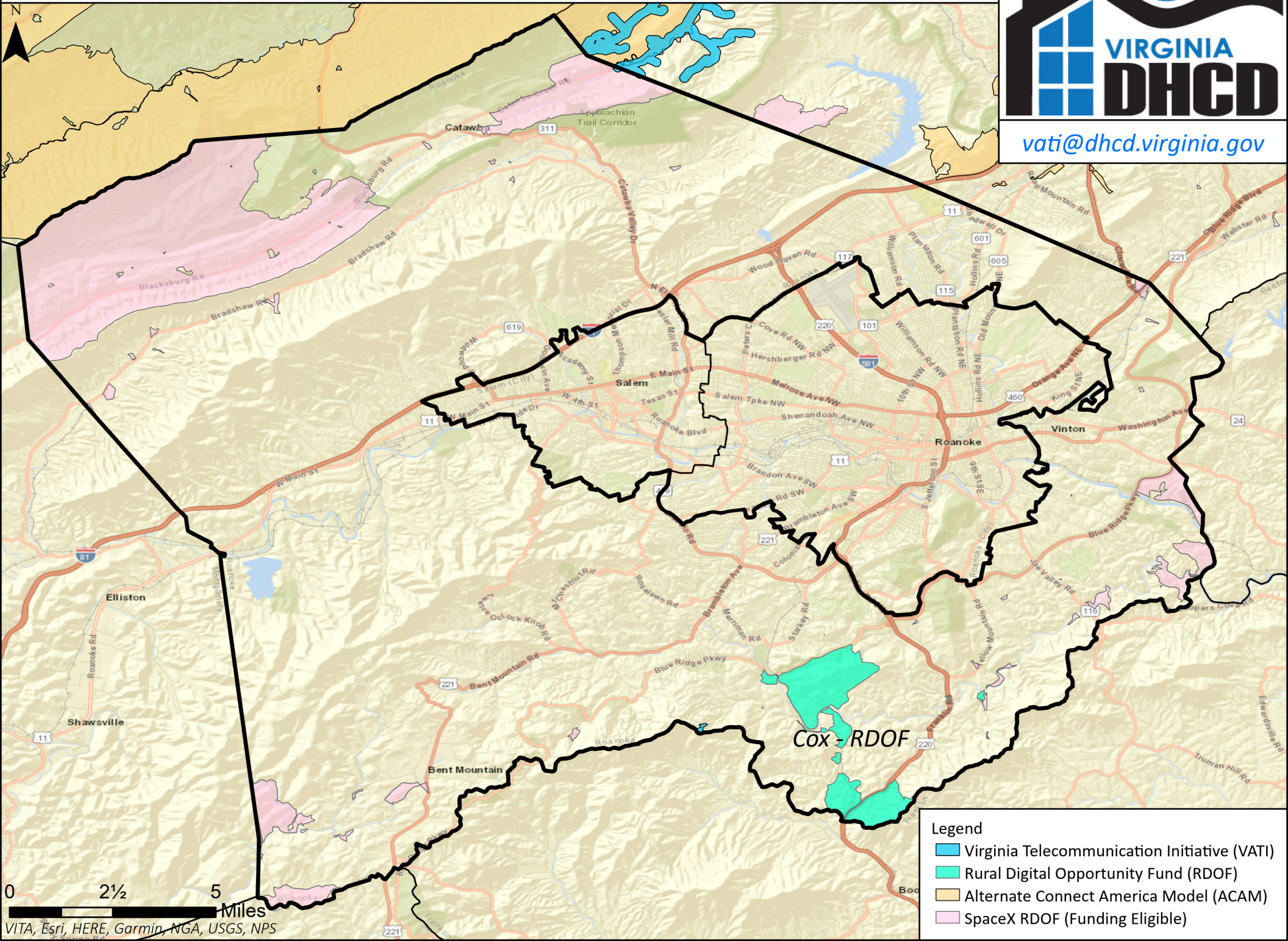




Broadband Funding in Roanoke County



vati@dhcd.virginia.gov



Legend

- Virginia Telecommunication Initiative (VATI)
- Rural Digital Opportunity Fund (RDOF)
- Alternate Connect America Model (ACAM)
- SpaceX RDOF (Funding Eligible)

0 2 1/2 5 Miles
VITA, Esri, HERE, Garmin, NGA, USGS, NPS

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 ¹
Residential	30
Businesses (non-home based)	0
Businesses (home-based)	0
Community Anchors	0
Non-residential	0
Total Number of RDOF Passings	30

*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.

Number	Street	City/County	State	Zip	Validation
8610	Willow Branch Rd	Roanoke	Virginia	24065	Adjacent to, but outside of, CBG 511610309003
8617	Willow Branch Rd	Roanoke	Virginia	24065	Adjacent to, but outside of, CBG 511610309003
8731	Willow Branch Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8768	Willow Branch Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8770	Willow Branch Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8779	Willow Branch Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8780	Willow Branch Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8781	Willow Branch Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8785	Willow Branch Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8840	Willow Branch Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8840	Willow Branch Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8860	Willow Branch Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8875	Willow Branch Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8881	Willow Branch Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
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8735	Wild Turkey Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8761	Wild Turkey Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8773	Wild Turkey Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8783	Wild Turkey Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
8790	Wild Turkey Rd	Roanoke	Virginia	24065	Not in or immediately adjacent to RDOF CBGs
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7877 Franklin Rd	Roanoke	Virginia	24065	Inside CBG 511610309003
7920 Franklin Rd	Roanoke	Virginia	24065	Inside CBG 511610309003
7963 Franklin Rd	Roanoke	Virginia	24065	Inside CBG 511610309003
7965 Franklin Rd	Roanoke	Virginia	24065	Inside CBG 511610309003
7826 Spotswood Dr	Roanoke	Virginia	24065	Inside CBG 511610309003
7842 Spotswood Dr	Roanoke	Virginia	24065	Inside CBG 511610309003
7880 Spotswood Dr	Roanoke	Virginia	24065	Inside CBG 511610309003
7883 Spotswood Dr	Roanoke	Virginia	24065	Inside CBG 511610309003
7924 Spotswood Dr	Roanoke	Virginia	24065	Inside CBG 511610309003
7964 Dunahoo Dr	Roanoke	Virginia	24065	Inside CBG 511610309003
7965 Dunahoo Dr	Roanoke	Virginia	24065	Inside CBG 511610309003
7966 Dunahoo Dr	Roanoke	Virginia	24065	Inside CBG 511610309003
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**County of Roanoke
Information Technology**
5925 Cove Road
Roanoke, Virginia 24019



To Whom it may Concern,

The areas proposed in this application meet the 2022 VATI unserved criteria.

These areas are defined as having broadband speeds at or below 25 Megabits per second (Mbps) download and 3 Megabits (Mbps) upload.

The areas proposed by the County of Roanoke meet these criteria.

William F. Hunter
Director, Communications and Information Technology

2022 Virginia Telecommunication Initiative (VATI) Passing Form

Type of Passings	Total Number of Passings in the Project Area ¹	Passings in the Project Area, without Special Construction Costs Required ²	Passings with Special Construction Costs budgeted in the Application ³	Number of Passings with Speeds at 10/1 or below in Project Area ⁴
Residential	366	366	0	366
Businesses (non-home based)	0	0	0	0
Businesses (home-based)	20	20	0	0
Community Anchors	0	0	0	0
Non-residential	0	0	0	0
Total	366	366	0	366

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.

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

² 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.

³ 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.

⁴ 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.

**MEMORANDUM OF UNDERSTANDING
BETWEEN THE COUNTY OF ROANOKE,
VIRGINIA, THE ECONOMIC DEVELOPMENT
AUTHORITY OF ROANOKE COUNTY,
VIRGINIA, AND COX COMMUNICATIONS
FOR APPLYING FOR VIRGINIA
TELECOMMUNICATIONS INITIATIVE FUNDING FOR
PROVIDING BROADBAND SERVICES**

I. PARTIES AND PURPOSE

This Memorandum of Understanding (MOU) is made and entered into as of the ____ day of September 2021, by and between Roanoke County, Virginia (the "County"), a political subdivision of the Commonwealth of Virginia, the Economic Development Authority of Roanoke County, Virginia (the "Authority"), a political subdivision of the Commonwealth of Virginia, and Cox Communications ("Cox"), for the purpose of creating a partnership to prepare and submit an application for grant funding through the Virginia Telecommunications Initiative (VATI) the Virginia Department of Housing and Community Development in an effort to expand and improve broadband services to the citizens of Roanoke County, Virginia.

The County and Authority recognize that in order to attain and maintain a high-quality level of broadband service to the citizens of Roanoke County, a close working relationship with the private internet providers is desirable and will be made possible in large part through state and federal grant funding opportunities.

The Authority is a political subdivision of the Commonwealth of Virginia, authorized to make grants for the purposes of promoting industry, developing trade, and inducing manufacturing, industrial, governmental, nonprofit and commercial enterprises and institutions to locate, remain, or expand facilities in the Commonwealth, under Section 15.2-4905 of the Code of Virginia, 1950, as amended.

The County wishes to make certain funds available to the Authority, and the Authority wishes to make a grant to Cox, for the purposes of incentivizing Cox to expand its facilities in Roanoke County, increase jobs and employment, enhance learning opportunities for students, and otherwise expand the tax base of the County while simultaneously assisting in preserving public health in the midst of the COVID-19 crisis.

II. SCOPE OF WORK

The County, Authority, and Cox desire to cooperatively work together to prepare and apply for grant funding through the 2021 Virginia Telecommunications Initiative (VATI) Funding Program managed by the Virginia DHCD to provide fiber broadband service in several areas of the County by extending their existing fiber network. The application for funding anticipates coverage to be made available to approximately 396 households and businesses in eleven (11) geographical areas of the County that are currently unserved/underserved. Service is envisioned to be

provided through the following infrastructure improvements:

- Placement of approximately twenty (20) miles of underground fiber optic cable.
- Placement of approximately sixteen (16) miles of aerial fiber optic cable.
- Associated construction and make-ready work.

The County, Authority, and Cox agree to provide the necessary funding to construct the projects above to deliver internet service to the homes/businesses in these areas by providing minimum average internet speeds ranging from 50 Mbps/10 Mbps to 1 Gbps. The total cost of these projects is estimated at \$3,133,191.

To obtain necessary project funding, the County agrees to complete a grant funding application, with assistance from Cox through the DHCD VATI Funding Program requesting \$1,535,263 (approximately 49% of the estimated project cost) to be allocated to the above projects. The County will contribute not more than \$814,630 (approximately 26% of the estimated project cost) toward completion of the projects. Cox agrees to provide the remaining project funding to complete the above projects (which is anticipated to be \$783,298, or approximately 25% of the project cost).

The parties confirm that a detailed agreement shall be executed if funding is approved to outline all the obligations of the County, Authority, and Cox and providing performance guarantees for service delivery and maintenance. If funding is approved from DHCD, the parties confirm and understand that Cox will be responsible for providing the remaining of the funding necessary to complete the project for which DHCD funding was received.

Signatures on following page

IN WITNESS WHEREOF, the parties have executed this Memorandum of Understanding on the day, month, and year indicated:

FOR ROANOKE COUNTY, VIRGINIA:

By: _____
Daniel R. O'Donnell
County Administrator

COMMONWEALTH OF VIRGINIA
COUNTY OF ROANOKE, to wit:

The foregoing instrument was acknowledged before me this ____ day of September 2021 by Daniel R. O'Donnell, on behalf of Roanoke County, Virginia.

My commission expires _____

Registration No. _____

Approved as to form:

By: _____
Peter S. Lubeck
County Attorney

FOR THE ECONOMIC DEVELOPMENT AUTHORITY OF ROANOKE COUNTY:

By: _____
Steven A. Musselwhite
Chairman

COMMONWEALTH OF VIRGINIA
COUNTY OF ROANOKE, to wit:

The foregoing instrument was acknowledged before me this ____ day of September 2021 by Steven A. Musselwhite, on behalf of the Economic Development Authority of Roanoke County, Virginia.

My commission expires _____

Registration No. _____

FOR COX COMMUNICATIONS:

By: _____

[name]

[title]

COMMONWEALTH OF VIRGINIA

COUNTY OF ROANOKE, to wit:

The foregoing instrument was acknowledged before me this ____ day of September 2021 by
_____, on behalf of Cox.

My commission expires _____

Registration No. _____

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	\$ 1,535,264.00	49	Pending
	\$		
COX COMMUNICATIONS	\$ 783,298.00	25	COMMITTED
	\$		
COUNTY OF ROANOKE	\$ 814,629.00	26	COMMITTED
	\$		
	\$		
TOTAL	\$ 3,133,191.00	100 %	

ATTACHMENT 10 – Documentation of Match Funding



Government and Public Affairs
1341 Crossways Blvd.
Chesapeake, VA 23320

August 31, 2021

Mr. Bill Hunter
Communications & Information Technology
PO Box 29800
Roanoke, VA 24018

Dear Mr. Hunter,

We are pleased to again partner with Roanoke County to apply for grant funding to extend broadband service to residents who remain unserved in the County.

The intent of this letter is to confirm our commitment to matching funds for this project and to provide assurance of our financial ability to do so.

Cox Communications is the largest private telecom company in America, proudly serving six million homes and businesses across 18 states. Cox Communications is the largest division of Cox Enterprises, a family-owned, global company founded in 1898 by Governor James M. Cox, that reported \$21B in annual revenues in 2019.

Cox will be providing all the planning, engineering, materials and labor for the installation of the fiber facilities necessary for this project. The cash value of the Cox contribution that is not reimbursed by VATI or other matching funds from Roanoke County is \$783,298. Cox is committed to provide this amount of match funding.

Please accept this letter in lieu of a financial statement documenting current assets due to our position as a privately-held company.

Sincerely,

A handwritten signature in black ink, appearing to read 'Sarah'.

Sarah Buck
Sr. Manager, Public Affairs

Memorandum

COMMUNICATIONS &



To: DHCD

From: William F. Hunter, Director

Date: September 13, 2021

Re: Matching Funds

The County of Roanoke has committed \$814,629.00 in Capital Improvement Funds toward the completion of the Cox Communications project applied for in the VATI Grant Application submission.

Attachment 11 – Letter of Support



Government and Public Affairs
1341 Crossways Blvd.
Chesapeake, VA 23320

August 31, 2021

Mr. Dan O'Donnell
Roanoke County Administrator
5204 Bernard Drive, Fourth Floor
Roanoke, VA 24018

Dear Mr. O'Donnell,

Thank you for the opportunity to work with the County on a grant application to extend broadband service to unserved residents in Roanoke. Cox is a committed partner to this project, and we are appreciative for the opportunity to coordinate with your team to submit a VATI grant application again this year.

Cox has been providing video and telecommunications service in the Commonwealth for more than 40 years and we have continually worked to enhance and expand our network to meet the needs of our customers. Over the past decade, Cox has invested billions of dollars in its Virginia network to bring gigabit service to all Cox residential customers; we've committed \$10B more nationwide over the next five years to continue the work that needs to be done to meet the needs of our customers, which we anticipate will be 10 gigabits in the very near future. These investments and services have significant impact on economic development by increasing opportunities for residents to engage in virtual learning, access to telehealth options, telework, and allowing more home-based businesses to thrive.

With the demand for broadband connectivity as high as it's ever been, partnering to reach the unserved is of the utmost importance. It's an exciting time and we appreciate the County trusting Cox to deliver the connectivity its residents desire and deserve.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Sarah'.

Sarah Buck
Sr. Manager, Public Affairs

Good morning,

I am hoping to soon be among the many other citizens of Roanoke County that can say I have an internet provider. I unfortunately am in an area that is currently under served -- 7592 Willow Branch Rd. Boones Mill (but on the Roanoke County side) Cox services Roanoke County but not my area as there are not enough houses to be beneficial to them and I have checked with providers in Franklin County and they tell me they can't cross the county line so I am in NO MAN'S LAND. I would love for my area to be launched into the 21st century.

Thanks for your time & consideration,
Bettie Haupt

We have been without Internet Service since we moved to this rural area some 5 years ago. When I contacted one Internet provider I learned it would cost us \$8000 to get broadband installed. Satellite monthly costs are way outside our budget because we are retired. So I used the library until Covid closed them.

Have you ever tried to do your taxes on a cell phone? Not easy! Our cell phone is our only access to the internet and doing things on a 5.5 x 2.5 screen gets old fast! Also, cell phone access is never at full bars.

We need low cost internet access!

Thank you,

Diane Carter

3663 Bradshaw Rd, Salem, VA 24153

Good morning. I received word you are the gentleman to contact to hopefully receive internet in our area. My husband and I live at 5449 Bandy Road. I have attempted multiple times in our almost 8 years in our home to get reliable internet. I have contacted Cox Communications multiple times, as they serve both ends of our road, but not the small stretch we are located at. The last time I contacted Cox I was told they would have to go through the "forest", and it would cost us \$100,000. We are currently using an unreliable Jet Pack from Verizon Wireless, a jet pack from US Cellular has the same unreliable service. Satellite services like B2X were unavailable to my address, last time I checked.

Our need for reliable internet is extremely important to us as we are both RNs and my husband is planning to obtain his BSN soon, and these programs are almost all distanced learning these days. Our 2 children had the most difficult time getting anything completed when the pandemic first hit when Roanoke County offered online classes until they were able to return to school.

Lastly, I need it for my job. My current role is the unit director/manager for the Transfer Center/Bed Placement @ Carilion Clinic. Sometimes with my job I need to access our applications from home after hours, or in emergency situations, or if my children are sick and I cannot make it into the office. My fear is that schools are going to be closed again due to COVID and I would need the ability to work from home, for childcare purposes.

Thank you for your time.

Constance Aaron, RN, BSN

August 19, 2021

Mr. Bill Hunter
Director, Communications & Information Technology
County of Roanoke, Virginia

Subject: Community need for internet

Dear Mr. Hunter,

I am writing to let you know of my need for internet. I am a resident of the Mount Pleasant Area and currently have no internet options, whatsoever, for my home. Having internet available at my home would mean the ability to manage bank accounts and finances from home, communicate with friends, family and co-workers, find and purchase goods not locally available, have information on the most current news, and lastly enhance educational opportunities for my children. This last item is huge, as I know you would agree. I have three school age children and without internet access there is no opportunity for them to do any meaningful online work, and hence fall into the risk of falling behind their peers.

Sincerely,

Danielle Bishop
4928 Brookridge Road
Roanoke, VA 24014

To Whom it May Concern,

My name is Dyanna Desforges and my husband and I live at 4699 Brookridge Rd in Roanoke, VA. We currently run two businesses out of our home and high speed internet is crucial for our productivity. We have satellite internet now that is mediocre at best. Very slow internet speeds. The internet doesn't work when it rains or snows. With high speed internet, we could be much more productive with our business and ultimately make more money not only for ourselves, but for the state as well. The world is so dependent on high speed internet these days. It doesn't make sense that some houses on our street have access to it and some don't. We have fought multiple times with Cox Cable to service to our home. We have even offered to rent a ditch witch and run the cables down our driveway ourselves. Having high speed internet would also increase the value of homes in the area. Please feel free to reach out to me if needed. Thank you and we appreciate your consideration for a VATI Grant.

Dyanna Desforges

Bill,

We have had satellite internet since we moved to Catawba twenty years ago. It's so slow it doesn't allow us to do most things people take for granted. Here are a few examples.

After my husband's surgery last month his doctor in North Carolina wanted to see a photo of an incision that wasn't healing properly. My husband had to drive over twenty miles to the Roanoke County library to send the picture, as our uplink speeds are so slow the doctor's app repeatedly timed out.

We can't have remote doctor appointments because we're unable to use Zoom or to video chat, a problem exacerbated by the pandemic. When the roads are bad in the winter, we can't have video appointments then, either.

Yesterday there was severe weather in our area and a tornado a few miles away. Because we have no cell phone service here, we couldn't receive radar, forecasts, or emergency information because we lose our internet in rainy weather. We're literally in the dark when we need weather information to be safe.

We're can't use video in any form to communicate with our family members and friends.

Even with theses limitations, we pay a lot to try to have access to communication and entertainment. Our satellite TV bill is \$197/month, our internet is 94.51, and our land line is 69.05. In spite of that we can never stream anything -- Netflix, sports, Hulu, Peacock, for example - and even the services we pay for (like HBO) are streaming more and more of their content.

Our land line also tends to fail in rainy weather. Then, we have zero access to emergency services.

We need high speed internet!

Thanks, Elizabeth Kayser
7860 Miller Cove Road
Catawba VA 24070

CDBG Derivation of Cost

Product	Total	Cox Contribution	Balance	Source of Estimate	Date
Construct approx. 107,518' of new UG coaxial network to include electronics @ \$31.27 per ft.	\$ 2,193,233	\$ 548,308	\$ 1,644,925	Cox Communications	9/9/2021
Construct approx. 85,323' of new aerial coaxial network to include electronics @ \$10.30 per ft.	\$ 626,638	\$ 156,660	\$ 469,979	Cox Communications	9/9/2021
Perform network engineering & design & make-ready	\$ 313,319	\$ 78,330	\$ 234,989	Cox Communications	9/9/2021
	\$ -	\$ -	\$ -		
Total Cost of Project	\$ 3,133,190	\$ 783,298	\$ 2,349,893		

ATTACHMENT 13 – Documentation of Supporting Cost Estimates



Government and Public Affairs
1341 Crossways Blvd.
Chesapeake, VA 23320

August 31, 2021

Mr. Bill Hunter
Communications & Information Technology
PO Box 29800
Roanoke, VA 24018

Dear Mr. Hunter,

In reviewing the VATI grant application it has come to our attention that documents are required to verify or back up our cost estimates for the chosen project area(s).

As a nationwide company, Cox uses internal employees and corporate contracted resources to complete and perform the proposed works as outlined in this grant application. Cox is able to leverage its scale when it comes to the purchasing of equipment and establishing reasonable contract rates for additional labor as needed. Therefore, we have the benefit of not having to request quotes for individual projects; the costs are standard so we're able to build them into the costs presented in the table provided and are not adjusted based on geographic location, project size, source of funding, or any other factors. Contracted rates are considered proprietary.

It is our hope that this letter will be sufficient in demonstrating to the review board that our company has done its due diligence to negotiate rates that reflect a reasonable use of resources both for the planning and completion of these last mile projects.

Please accept this letter as an explanation for the absence of attached documentation of supporting cost estimates as requested in the 2022 VATI grant application (attachment 13).

Sincerely,

A handwritten signature in black ink, appearing to read 'Sarah Buck'.

Sarah Buck
Sr. Manager, Public Affairs

[Skip to main content](#)[Skip to footer and contact information](#)



(RETAIN FOR YOUR RECORDS) Form 477 Filing Summary

FRN:

0001834696

Data as of:

Jun 30, 2020

Operations:

Non-ILEC

Submission Status:

Original - Submitted

Last Updated:

Aug 24, 2020 09:38:26

Filer Identification

Section	Question	Response
Filer Information	Company Name	Cox Communications
	Holding Company Name	Cox Communications, Inc.
	SAC ID	279011, 439003, 549017
	499 ID	827138

Section	Question	Response
Data Contact Information	Data Contact Name	Paul Cain
	Data Contact Phone Number	(404) 269-8139
	Data Contact E-mail	paul.cain@cox.com
Emergency Operations Contact Information	Emergency Operations Name	Mark Peay
	Emergency Operations Phone Number	(404) 227-6704
	Emergency Operations E-mail	mark.peay@cox.com
Certifying Official Contact Information	Certifying Official Name	Joiava T. Philpott
	Certifying Official Phone Number	(404) 269-0983
	Certifying Official E-mail	joiava.philpott@cox.com

Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	Fixed_Broadband_Deployment_FCC_06302020.txt	Aug 3, 2020 16:00:46	314097
Fixed Broadband Subscription	Fixed_Broadband_Subscription_FCC_06302020.txt	Aug 4, 2020 14:20:30	111104
Fixed Voice Subscription	Voice_Telephone_Subscription_Detail_06302020.txt	Aug 5, 2020 14:39:59	6332

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Arizona	Cox Communications	Cable Modem – DOCSIS 3.0	1687
		Cable Modem – DOCSIS 3.1	54642
		Optical Carrier/Fiber to the End User	4835

State	DBA Name	Technology	Blocks
Arkansas	Cox Communications	Cable Modem – DOCSIS 3.1	12767
		Optical Carrier/Fiber to the End User	212
California	Cox Communications	Cable Modem – DOCSIS 3.0	1340
		Cable Modem – DOCSIS 3.1	27554
		Optical Carrier/Fiber to the End User	1109
Connecticut	Cox Communications	Cable Modem – DOCSIS 3.1	6066
		Optical Carrier/Fiber to the End User	51
District of Columbia	Cox Communications	Cable Modem – DOCSIS 3.1	5
		Optical Carrier/Fiber to the End User	3

State	DBA Name	Technology	Blocks
Florida	Cox Communications	Cable Modem – DOCSIS 3.0	13
		Cable Modem – DOCSIS 3.1	14048
		Optical Carrier/Fiber to the End User	150
Georgia	Cox Communications	Cable Modem – DOCSIS 3.0	6
		Cable Modem – DOCSIS 3.1	5426
		Optical Carrier/Fiber to the End User	97
Idaho	Cox Communications	Cable Modem – DOCSIS 3.1	742
		Optical Carrier/Fiber to the End User	8
Iowa	Cox Communications	Cable Modem – DOCSIS 3.1	1450

State	DBA Name	Technology	Blocks
		Optical Carrier/Fiber to the End User	7
Kansas	Cox Communications	Cable Modem – DOCSIS 3.0	24
		Cable Modem – DOCSIS 3.1	28932
		Optical Carrier/Fiber to the End User	190
Louisiana	Cox Communications	Cable Modem – DOCSIS 3.0	8
		Cable Modem – DOCSIS 3.1	36052
		Optical Carrier/Fiber to the End User	344
Massachusetts	Cox Communications	Cable Modem – DOCSIS 3.1	101
		Optical Carrier/Fiber to the End User	1

State	DBA Name	Technology	Blocks
Nebraska	Cox Communications	Cable Modem – DOCSIS 3.0	10
		Cable Modem – DOCSIS 3.1	12187
		Optical Carrier/Fiber to the End User	339
Nevada	Cox Communications	Cable Modem – DOCSIS 3.0	17
		Cable Modem – DOCSIS 3.1	17132
		Optical Carrier/Fiber to the End User	352
North Carolina	Cox Communications	Cable Modem – DOCSIS 3.1	24
		Optical Carrier/Fiber to the End User	2
Ohio	Cox Communications	Cable Modem – DOCSIS 3.0	1

State	DBA Name	Technology	Blocks
		Cable Modem – DOCSIS 3.1	2109
		Optical Carrier/Fiber to the End User	4
Oklahoma	Cox Communications	Cable Modem – DOCSIS 3.0	12
		Cable Modem – DOCSIS 3.1	30012
		Optical Carrier/Fiber to the End User	992
Rhode Island	Cox Communications	Cable Modem – DOCSIS 3.0	2
		Cable Modem – DOCSIS 3.1	18570
		Optical Carrier/Fiber to the End User	53
Virginia	Cox Communications	Cable Modem – DOCSIS 3.0	27

State	DBA Name	Technology	Blocks
		Cable Modem – DOCSIS 3.1	34158
		Optical Carrier/Fiber to the End User	224
Total			314097

Fixed Broadband Subscription

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

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Arizona	Cable Modem	19408	1223891	89287	1313178
	Optical Carrier/Fiber to the End User	4769	78130	4480	82610
Arkansas	Cable Modem	2342	133306	12043	145349

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
	Optical Carrier/Fiber to the End User	445	4261	454	4715
California	Cable Modem	11723	844658	55928	900586
	Optical Carrier/Fiber to the End User	2525	23570	5485	29055
Connecticut	Cable Modem	1985	121046	9864	130910
	Optical Carrier/Fiber to the End User	177	1042	147	1189
District of Columbia	Optical Carrier/Fiber to the End User	3	0	3	3
Florida	Cable Modem	3352	238491	19148	257639

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
	Optical Carrier/Fiber to the End User	542	5382	744	6126
Georgia	Cable Modem	1244	77307	6578	83885
	Optical Carrier/Fiber to the End User	233	3148	235	3383
Idaho	Cable Modem	75	6836	655	7491
	Optical Carrier/Fiber to the End User	7	0	8	8
Iowa	Cable Modem	431	18962	1275	20237
	Optical Carrier/Fiber to the End User	50	94	48	142

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Kansas	Cable Modem	5213	263229	20776	284005
	Optical Carrier/Fiber to the End User	684	1829	819	2648
Louisiana	Cable Modem	9249	425052	36497	461549
	Optical Carrier/Fiber to the End User	1712	6363	2444	8807
Massachusetts	Cable Modem	25	1118	15	1133
	Optical Carrier/Fiber to the End User	2	0	2	2
Nebraska	Cable Modem	3494	202249	14905	217154

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
	Optical Carrier/Fiber to the End User	835	8734	745	9479
Nevada	Cable Modem	8130	574154	40791	614945
	Optical Carrier/Fiber to the End User	1686	28533	2063	30596
North Carolina	Cable Modem	19	488	9	497
	Optical Carrier/Fiber to the End User	3	0	3	3
Ohio	Cable Modem	1291	49377	3009	52386
	Optical Carrier/Fiber to the End User	43	119	44	163

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Oklahoma	Cable Modem	9127	421317	40352	461669
	Optical Carrier/Fiber to the End User	2432	13809	3478	17287
Rhode Island	Cable Modem	4137	201258	17257	218515
	Optical Carrier/Fiber to the End User	380	1176	451	1627
Virginia	Cable Modem	11527	557531	53323	610854
	Optical Carrier/Fiber to the End User	1804	7991	2743	10734
Total		111104	5544451	446108	5990559

Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
0.256	0.256	0	157	157
0.384	0.384	0	3490	3490
0.512	0.512	0	5	5
0.768	0.768	0	1	1
1.000	0.256	0	5	5
1.000	1.000	0	47	47
1.500	0.384	0	230	230
1.500	0.512	0	2	2
1.500	1.500	0	266	266

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
2.000	0.384	0	76	76
2.000	2.000	0	2582	2582
3.000	0.512	0	1349	1349
3.000	3.000	0	130	130
4.000	4.000	0	7	7
5.000	1.000	36	584	620
5.000	2.000	0	471	471
5.000	5.000	0	311	311
6.000	1.000	0	790	790

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
6.000	2.000	0	45	45
6.000	6.000	0	53	53
7.000	7.000	0	3	3
8.000	2.000	0	7	7
8.000	8.000	0	6	6
9.000	1.000	0	820	820
9.000	9.000	0	1	1
10.000	1.000	243916	0	243916
10.000	2.000	0	55526	55526

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
10.000	3.000	0	49	49
10.000	10.000	0	988	988
15.000	1.500	0	1	1
15.000	2.000	18146	0	18146
15.000	3.000	0	6236	6236
15.000	5.000	0	356	356
15.000	15.000	0	15	15
15.500	5.000	0	30	30
20.000	3.000	0	9380	9380

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
20.000	4.000	0	4	4
20.000	20.000	0	1678	1678
25.000	3.000	155539	0	155539
25.000	4.000	0	1478	1478
25.000	5.000	21578	82730	104308
25.000	10.000	0	75	75
25.000	15.000	0	2	2
25.000	25.000	0	55	55
28.000	4.000	0	152	152

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
30.000	10.000	0	155	155
30.000	30.000	0	761	761
40.000	40.000	0	318	318
45.000	45.000	0	7	7
50.000	3.000	838118	0	838118
50.000	5.000	0	6708	6708
50.000	10.000	98002	105590	203592
50.000	15.000	0	166	166
50.000	50.000	0	3624	3624

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
60.000	15.000	0	129	129
60.000	60.000	0	14	14
70.000	70.000	0	9	9
75.000	10.000	0	4	4
75.000	25.000	0	602	602
75.000	75.000	0	16	16
80.000	10.000	0	5	5
80.000	20.000	0	23	23
80.000	80.000	0	2	2

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
90.000	90.000	0	3	3
100.000	10.000	33124	95	33219
100.000	20.000	0	95192	95192
100.000	30.000	0	86	86
100.000	40.000	0	1	1
100.000	50.000	0	1	1
100.000	100.000	0	6482	6482
120.000	120.000	0	1	1
130.000	130.000	0	2	2

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
140.000	30.000	0	4	4
150.000	10.000	2581188	26	2581214
150.000	20.000	5988	669	6657
150.000	40.000	0	8	8
150.000	150.000	0	117	117
155.000	155.000	0	10	10
200.000	10.000	241430	0	241430
200.000	20.000	0	26053	26053
200.000	50.000	0	1	1

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
200.000	200.000	0	2256	2256
250.000	250.000	0	58	58
300.000	30.000	864745	15910	880655
300.000	50.000	0	2	2
300.000	75.000	0	14	14
300.000	80.000	0	1	1
300.000	300.000	0	1140	1140
400.000	400.000	0	242	242
500.000	35.000	0	3460	3460

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
500.000	500.000	0	1200	1200
600.000	600.000	0	22	22
700.000	700.000	0	18	18
800.000	800.000	0	3	3
900.000	900.000	0	1	1
1000.000	35.000	404628	2592	407220
1000.000	1000.000	38013	1782	39795
2000.000	2000.000	0	127	127
3000.000	3000.000	0	39	39

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
4000.000	4000.000	0	22	22
5000.000	5000.000	0	58	58
6000.000	6000.000	0	4	4
8000.000	8000.000	0	5	5
10000.000	10000.000	0	67	67
12000.000	12000.000	0	1	1
20000.000	20000.000	0	2	2
40000.000	40000.000	0	2	2
100000.000	100000.000	0	3	3

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Total		5544451	446108	5990559

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

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Cable Modem	0.256	0.256	0	152	152
	0.384	0.384	0	3483	3483
	1.000	0.256	0	5	5
	1.500	0.384	0	230	230
	1.500	1.500	0	3	3
	2.000	0.384	0	76	76
	2.000	2.000	0	2497	2497

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	3.000	0.512	0	1349	1349
	3.000	3.000	0	16	16
	5.000	1.000	31	554	585
	5.000	2.000	0	449	449
	5.000	5.000	0	3	3
	6.000	1.000	0	790	790
	6.000	2.000	0	44	44
	9.000	1.000	0	820	820
	10.000	1.000	240288	0	240288

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	10.000	2.000	0	55503	55503
	10.000	10.000	0	2	2
	15.000	1.500	0	1	1
	15.000	2.000	18116	0	18116
	15.000	3.000	0	6127	6127
	15.000	5.000	0	121	121
	20.000	3.000	0	9380	9380
	20.000	4.000	0	4	4
	20.000	20.000	0	4	4

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	25.000	3.000	154700	0	154700
	25.000	4.000	0	1478	1478
	25.000	5.000	21497	82600	104097
	25.000	15.000	0	2	2
	28.000	4.000	0	152	152
	30.000	10.000	0	155	155
	30.000	30.000	0	2	2
	50.000	3.000	821871	0	821871
	50.000	5.000	0	6708	6708

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	50.000	10.000	95651	105342	200993
	50.000	15.000	0	8	8
	60.000	15.000	0	129	129
	80.000	10.000	0	5	5
	100.000	10.000	32909	95	33004
	100.000	20.000	0	94973	94973
	140.000	30.000	0	4	4
	150.000	10.000	2504935	26	2504961
	150.000	20.000	5956	669	6625

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	200.000	10.000	239491	0	239491
	200.000	20.000	0	25939	25939
	300.000	30.000	824688	15786	840474
	500.000	35.000	0	3442	3442
	1000.000	35.000	400137	2584	402721
Optical Carrier/Fiber to the End User	0.256	0.256	0	5	5
	0.384	0.384	0	7	7
	0.512	0.512	0	5	5
	0.768	0.768	0	1	1

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	1.000	1.000	0	47	47
	1.500	0.512	0	2	2
	1.500	1.500	0	263	263
	2.000	2.000	0	85	85
	3.000	3.000	0	114	114
	4.000	4.000	0	7	7
	5.000	1.000	5	30	35
	5.000	2.000	0	22	22
	5.000	5.000	0	308	308

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	6.000	2.000	0	1	1
	6.000	6.000	0	53	53
	7.000	7.000	0	3	3
	8.000	2.000	0	7	7
	8.000	8.000	0	6	6
	9.000	9.000	0	1	1
	10.000	1.000	3628	0	3628
	10.000	2.000	0	23	23
	10.000	3.000	0	49	49

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	10.000	10.000	0	986	986
	15.000	2.000	30	0	30
	15.000	3.000	0	109	109
	15.000	5.000	0	235	235
	15.000	15.000	0	15	15
	15.500	5.000	0	30	30
	20.000	20.000	0	1674	1674
	25.000	3.000	839	0	839
	25.000	5.000	81	130	211

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	25.000	10.000	0	75	75
	25.000	25.000	0	55	55
	30.000	30.000	0	759	759
	40.000	40.000	0	318	318
	45.000	45.000	0	7	7
	50.000	3.000	16247	0	16247
	50.000	10.000	2351	248	2599
	50.000	15.000	0	158	158
	50.000	50.000	0	3624	3624

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	60.000	60.000	0	14	14
	70.000	70.000	0	9	9
	75.000	10.000	0	4	4
	75.000	25.000	0	602	602
	75.000	75.000	0	16	16
	80.000	20.000	0	23	23
	80.000	80.000	0	2	2
	90.000	90.000	0	3	3
	100.000	10.000	215	0	215

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	100.000	20.000	0	219	219
	100.000	30.000	0	86	86
	100.000	40.000	0	1	1
	100.000	50.000	0	1	1
	100.000	100.000	0	6482	6482
	120.000	120.000	0	1	1
	130.000	130.000	0	2	2
	150.000	10.000	76253	0	76253
	150.000	20.000	32	0	32

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	150.000	40.000	0	8	8
	150.000	150.000	0	117	117
	155.000	155.000	0	10	10
	200.000	10.000	1939	0	1939
	200.000	20.000	0	114	114
	200.000	50.000	0	1	1
	200.000	200.000	0	2256	2256
	250.000	250.000	0	58	58
	300.000	30.000	40057	124	40181

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	300.000	50.000	0	2	2
	300.000	75.000	0	14	14
	300.000	80.000	0	1	1
	300.000	300.000	0	1140	1140
	400.000	400.000	0	242	242
	500.000	35.000	0	18	18
	500.000	500.000	0	1200	1200
	600.000	600.000	0	22	22
	700.000	700.000	0	18	18

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	800.000	800.000	0	3	3
	900.000	900.000	0	1	1
	1000.000	35.000	4491	8	4499
	1000.000	1000.000	38013	1782	39795
	2000.000	2000.000	0	127	127
	3000.000	3000.000	0	39	39
	4000.000	4000.000	0	22	22
	5000.000	5000.000	0	58	58
	6000.000	6000.000	0	4	4

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	8000.000	8000.000	0	5	5
	10000.000	10000.000	0	67	67
	12000.000	12000.000	0	1	1
	20000.000	20000.000	0	2	2
	40000.000	40000.000	0	2	2
	100000.000	100000.000	0	3	3
Total			5544451	446108	5990559

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
Alabama	0	0	46	0
Arizona	1326	0	586445	370596
Arkansas	0	0	56265	26155
California	3884	1	512848	314347
Colorado	0	0	1120	0
Connecticut	4	0	80974	58324
Florida	0	0	106487	61241
Georgia	0	0	38272	23126
Idaho	0	0	3191	2079

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Illinois	0	0	33	0
Indiana	0	0	36	0
Iowa	2	0	13990	8375
Kansas	449	0	137632	68626
Louisiana	35	1	239513	135485
Maryland	0	0	101	0
Massachusetts	0	0	92	0
Minnesota	0	0	4	0
Missouri	0	0	58	0

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Nebraska	807	0	128334	68779
Nevada	0	0	284475	184464
Ohio	0	0	24839	18240
Oklahoma	3358	0	280159	135782
Oregon	0	0	48	0
Pennsylvania	0	0	48	0
Rhode Island	260	0	157315	92589
South Dakota	0	0	4	0
Tennessee	0	0	145	0

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Texas	0	0	236	0
Utah	0	0	65	0
Virginia	7423	114	390277	204992
Washington	0	0	18	0
West Virginia	0	0	13	0
Total	17548	116	3043083	1773200

Fixed Voice Subscription (VGE Lines)

VGE Lines Provided to Unaffiliated Providers by State

State	Wholesale	UNE-L
Arizona	0	0

State	Wholesale	UNE-L
California	0	0
Connecticut	0	0
Iowa	0	0
Kansas	0	0
Louisiana	0	0
Nebraska	0	0
Oklahoma	0	0
Rhode Island	0	0
Virginia	0	0

State	Wholesale	UNE-L
Total	0	0

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
Arizona	1326	37	1289	0	0	909	417
California	3884	93	3791	0	1	2399	1484
Connecticut	4	0	4	0	0	3	1
Iowa	2	0	2	0	0	1	1
Kansas	449	12	437	0	0	328	121

State	Total	by Bundle		by Product Type			
		Sold w/ Internet	Sold w/o Internet	Consumer		Bus-Govt	
				& No PIC	& PIC	& No PIC	& PIC
Louisiana	35	4	31	0	1	31	3
Nebraska	807	19	788	0	0	622	185
Oklahoma	3358	69	3289	0	0	1785	1573
Rhode Island	260	18	242	0	0	123	137
Virginia	7423	92	7331	1	113	5877	1432
Total	17548	344	17204	1	115	12078	5354

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
Arizona	1326	1221	105	0	8	1318	0	0
California	3884	3503	381	0	1113	2771	0	0
Connecticut	4	4	0	0	0	4	0	0
Iowa	2	2	0	0	0	2	0	0
Kansas	449	427	22	0	0	449	0	0
Louisiana	35	32	3	0	10	25	0	0
Nebraska	807	783	24	0	0	807	0	0
Oklahoma	3358	3093	265	0	358	3000	0	0

State	Total	by Ownership			by Last-mile Medium			
		Owned	UNE-L	Resale	FTTP	Coax	Fixed Wireless	Copper
Rhode Island	260	252	8	0	0	260	0	0
Virginia	7423	7065	358	0	470	6953	0	0
Total	17548	16382	1166	0	1959	15589	0	0

Fixed Voice Subscription (iVoIP)

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

State	Total	Consumer	Business / Govt
Alabama	46	0	46
Arizona	565	0	565
Arkansas	354	0	354
California	7831	0	7831

State	Total	Consumer	Business / Govt
Colorado	1120	0	1120
Connecticut	11	0	11
Florida	129	0	129
Georgia	23	0	23
Idaho	52	0	52
Illinois	33	0	33
Indiana	36	0	36
Iowa	74	0	74
Kansas	1145	0	1145

State	Total	Consumer	Business / Govt
Louisiana	247	0	247
Maryland	101	0	101
Massachusetts	82	0	82
Minnesota	4	0	4
Missouri	58	0	58
Nebraska	804	0	804
Nevada	542	0	542
Ohio	67	0	67
Oklahoma	503	0	503

State	Total	Consumer	Business / Govt
Oregon	48	0	48
Pennsylvania	48	0	48
Rhode Island	89	0	89
South Dakota	4	0	4
Tennessee	145	0	145
Texas	236	0	236
Utah	65	0	65
Virginia	2499	0	2499
Washington	18	0	18

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
Connecticut	80963	58324	22639	70541	10422	284	80679	0	0
Florida	106358	61241	45117	90591	15767	1656	104702	0	0
Georgia	38249	23126	15123	33394	4855	656	37593	0	0
Idaho	3139	2079	1060	2755	384	0	3139	0	0
Illinois	0	0	0	0	0	0	0	0	0
Indiana	0	0	0	0	0	0	0	0	0
Iowa	13916	8375	5541	10635	3281	25	13891	0	0
Kansas	136487	68626	67861	103541	32946	678	135809	0	0

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
Louisiana	239266	135485	103781	194981	44285	1598	237668	0	0
Maryland	0	0	0	0	0	0	0	0	0
Massachusetts	10	0	10	0	10	10	0	0	0
Minnesota	0	0	0	0	0	0	0	0	0
Missouri	0	0	0	0	0	0	0	0	0
Nebraska	127530	68779	58751	96219	31311	1625	125905	0	0
Nevada	283933	184464	99469	244363	39570	7077	276856	0	0
Ohio	24772	18240	6532	21725	3047	26	24746	0	0

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	387778	204992	182786	289354	98424	3954	383824	0	0
Washington	0	0	0	0	0	0	0	0	0
West Virginia	0	0	0	0	0	0	0	0	0
Total	3026091	1773200	1252891	2423129	602962	70109	2955982	0	0

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(RETAIN FOR YOUR RECORDS) Form 477 Filing Summary

FRN:

0001834696

Data as of:

Dec 31, 2020

Operations:

Non-ILEC

Submission Status:

Original - Submitted

Last Updated:

Mar 1, 2021 13:47:48

Filer Identification

Section	Question	Response
Filer Information	Company Name	Cox Communications
	Holding Company Name	Cox Communications, Inc.
	SAC ID	279011, 439003, 549017
	499 ID	827138
Data Contact Information	Data Contact Name	Paul Cain
	Data Contact Phone Number	(404) 269-8139
	Data Contact E-mail	paul.cain@cox.com

Section	Question	Response
Emergency Operations Contact Information	Emergency Operations Name	Mark Peay
	Emergency Operations Phone Number	(404) 227-6704
	Emergency Operations E-mail	mark.peay@cox.com
Certifying Official Contact Information	Certifying Official Name	Joiava T. Philpott
	Certifying Official Phone Number	(404) 269-0983
	Certifying Official E-mail	joiava.philpott@cox.com

Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	Fixed_Broadband_Deployment_FCC_12312020.txt	Feb 9, 2021 10:17:17	315393

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Subscription	Fixed_Broadband_Subscription_FCC_12312020.txt	Feb 10, 2021 08:16:25	117757
Fixed Voice Subscription	Voice_Telephone_Subscription_Detail_FCC_12312020.txt	Feb 10, 2021 08:41:02	6314

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Arizona	Cox Communications	Cable Modem – DOCSIS 3.0	1687
		Cable Modem – DOCSIS 3.1	54687
		Optical Carrier/Fiber to the End User	5284
Arkansas	Cox Communications	Cable Modem – DOCSIS 3.1	12776

State	DBA Name	Technology	Blocks
		Optical Carrier/Fiber to the End User	275
California	Cox Communications	Cable Modem – DOCSIS 3.0	302
		Cable Modem – DOCSIS 3.1	28640
		Optical Carrier/Fiber to the End User	1211
Connecticut	Cox Communications	Cable Modem – DOCSIS 3.1	6068
		Optical Carrier/Fiber to the End User	49
District of Columbia	Cox Communications	Cable Modem – DOCSIS 3.1	5
		Optical Carrier/Fiber to the End User	3
Florida	Cox Communications	Cable Modem – DOCSIS 3.0	5

State	DBA Name	Technology	Blocks
		Cable Modem – DOCSIS 3.1	14058
		Optical Carrier/Fiber to the End User	178
Georgia	Cox Communications	Cable Modem – DOCSIS 3.0	7
		Cable Modem – DOCSIS 3.1	5440
		Optical Carrier/Fiber to the End User	114
Idaho	Cox Communications	Cable Modem – DOCSIS 3.1	742
		Optical Carrier/Fiber to the End User	8
Iowa	Cox Communications	Cable Modem – DOCSIS 3.1	1451
		Optical Carrier/Fiber to the End User	25

State	DBA Name	Technology	Blocks
Kansas	Cox Communications	Cable Modem – DOCSIS 3.0	24
		Cable Modem – DOCSIS 3.1	28928
		Optical Carrier/Fiber to the End User	259
Louisiana	Cox Communications	Cable Modem – DOCSIS 3.0	9
		Cable Modem – DOCSIS 3.1	36068
		Optical Carrier/Fiber to the End User	426
Massachusetts	Cox Communications	Cable Modem – DOCSIS 3.1	101
		Optical Carrier/Fiber to the End User	1
Nebraska	Cox Communications	Cable Modem – DOCSIS 3.0	10

State	DBA Name	Technology	Blocks
		Cable Modem – DOCSIS 3.1	12191
		Optical Carrier/Fiber to the End User	410
Nevada	Cox Communications	Cable Modem – DOCSIS 3.0	16
		Cable Modem – DOCSIS 3.1	17129
		Optical Carrier/Fiber to the End User	443
North Carolina	Cox Communications	Cable Modem – DOCSIS 3.1	24
		Optical Carrier/Fiber to the End User	2
Ohio	Cox Communications	Cable Modem – DOCSIS 3.0	1
		Cable Modem – DOCSIS 3.1	2110

State	DBA Name	Technology	Blocks
		Optical Carrier/Fiber to the End User	4
Oklahoma	Cox Communications	Cable Modem – DOCSIS 3.0	12
		Cable Modem – DOCSIS 3.1	30053
		Optical Carrier/Fiber to the End User	1038
Rhode Island	Cox Communications	Cable Modem – DOCSIS 3.0	2
		Cable Modem – DOCSIS 3.1	18583
		Optical Carrier/Fiber to the End User	57
Virginia	Cox Communications	Cable Modem – DOCSIS 3.0	26
		Cable Modem – DOCSIS 3.1	34194

State	DBA Name	Technology	Blocks
		Optical Carrier/Fiber to the End User	257
Total			315393

Fixed Broadband Subscription

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

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Arizona	Cable Modem	20386	1287174	91447	1378621
	Optical Carrier/Fiber to the End User	5310	96451	5146	101597
Arkansas	Cable Modem	2455	136152	12044	148196
	Optical Carrier/Fiber to the End User	519	4989	519	5508

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
California	Cable Modem	12410	860192	55931	916123
	Optical Carrier/Fiber to the End User	2691	26499	5596	32095
Connecticut	Cable Modem	2081	123749	9875	133624
	Optical Carrier/Fiber to the End User	196	1216	173	1389
District of Columbia	Optical Carrier/Fiber to the End User	4	0	4	4
Florida	Cable Modem	3501	244012	19400	263412
	Optical Carrier/Fiber to the End User	612	6348	860	7208

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Georgia	Cable Modem	1286	80145	6690	86835
	Optical Carrier/Fiber to the End User	283	3663	275	3938
Idaho	Cable Modem	81	7176	697	7873
	Optical Carrier/Fiber to the End User	9	0	13	13
Iowa	Cable Modem	456	19211	1273	20484
	Optical Carrier/Fiber to the End User	59	162	53	215
Kansas	Cable Modem	5505	271194	20758	291952

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
	Optical Carrier/Fiber to the End User	767	2188	902	3090
Louisiana	Cable Modem	9683	437696	36825	474521
	Optical Carrier/Fiber to the End User	1836	7492	2617	10109
Massachusetts	Cable Modem	26	1075	14	1089
	Optical Carrier/Fiber to the End User	2	0	2	2
Nebraska	Cable Modem	3688	203576	14877	218453
	Optical Carrier/Fiber to the End User	917	10869	818	11687

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Nevada	Cable Modem	8620	595992	41757	637749
	Optical Carrier/Fiber to the End User	1851	35231	2236	37467
North Carolina	Cable Modem	21	515	9	524
	Optical Carrier/Fiber to the End User	3	0	3	3
Ohio	Cable Modem	1345	50506	2995	53501
	Optical Carrier/Fiber to the End User	47	127	49	176
Oklahoma	Cable Modem	9607	428780	40387	469167

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
	Optical Carrier/Fiber to the End User	2708	16436	3685	20121
Rhode Island	Cable Modem	4322	200562	17336	217898
	Optical Carrier/Fiber to the End User	412	1630	476	2106
Virginia	Cable Modem	12132	566476	53615	620091
	Optical Carrier/Fiber to the End User	1926	10216	2863	13079
Total		117757	5737700	452220	6189920

Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
0.256	0.256	0	143	143
0.384	0.384	0	3720	3720
0.512	0.512	0	4	4
1.000	0.256	0	6	6
1.000	1.000	0	44	44
1.500	0.384	0	226	226
1.500	0.512	0	2	2
1.500	1.500	0	241	241
2.000	0.384	0	71	71

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
2.000	2.000	0	2375	2375
3.000	0.512	0	1110	1110
3.000	3.000	0	112	112
4.000	4.000	0	6	6
5.000	1.000	10	521	531
5.000	2.000	0	515	515
5.000	5.000	0	295	295
6.000	1.000	0	716	716
6.000	2.000	0	40	40

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
6.000	6.000	0	45	45
7.000	7.000	0	3	3
8.000	2.000	0	7	7
8.000	8.000	0	3	3
9.000	1.000	0	714	714
9.000	9.000	0	1	1
10.000	1.000	226333	0	226333
10.000	2.000	0	48805	48805
10.000	3.000	0	40	40

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
10.000	10.000	0	939	939
15.000	2.000	15337	0	15337
15.000	3.000	0	5671	5671
15.000	5.000	0	307	307
15.000	15.000	0	10	10
15.500	5.000	0	27	27
20.000	3.000	0	9703	9703
20.000	4.000	0	2	2
20.000	20.000	0	1585	1585

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
25.000	3.000	170729	0	170729
25.000	4.000	0	1393	1393
25.000	5.000	18273	75932	94205
25.000	10.000	0	64	64
25.000	15.000	0	2	2
25.000	25.000	0	49	49
28.000	4.000	0	126	126
30.000	10.000	0	128	128
30.000	30.000	0	764	764

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
40.000	40.000	0	304	304
45.000	45.000	0	7	7
50.000	3.000	847686	0	847686
50.000	5.000	0	6654	6654
50.000	10.000	0	106059	106059
50.000	15.000	0	146	146
50.000	50.000	0	3771	3771
60.000	15.000	0	108	108
60.000	60.000	0	13	13

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
70.000	70.000	0	6	6
75.000	10.000	0	4	4
75.000	25.000	0	539	539
75.000	75.000	0	13	13
80.000	10.000	0	4	4
80.000	20.000	0	19	19
80.000	80.000	0	1	1
90.000	90.000	0	3	3
100.000	10.000	27789	104	27893

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
100.000	20.000	0	103299	103299
100.000	30.000	0	69	69
100.000	50.000	0	1	1
100.000	100.000	0	7045	7045
130.000	130.000	0	1	1
140.000	30.000	0	4	4
150.000	10.000	2590853	40	2590893
150.000	20.000	4407	739	5146
150.000	40.000	0	6	6

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
150.000	150.000	0	128	128
155.000	155.000	0	5	5
200.000	10.000	190041	0	190041
200.000	20.000	0	31168	31168
200.000	200.000	0	2562	2562
250.000	250.000	0	56	56
300.000	30.000	646284	19119	665403
300.000	50.000	0	2	2
300.000	75.000	0	12	12

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
300.000	80.000	0	1	1
300.000	300.000	0	1378	1378
400.000	400.000	0	292	292
500.000	10.000	372539	0	372539
500.000	35.000	0	4749	4749
500.000	500.000	0	1382	1382
600.000	600.000	0	22	22
700.000	700.000	0	17	17
800.000	800.000	0	3	3

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
900.000	900.000	0	3	3
1000.000	35.000	577483	3275	580758
1000.000	1000.000	49936	2214	52150
2000.000	2000.000	0	142	142
3000.000	3000.000	0	43	43
4000.000	4000.000	0	26	26
5000.000	5000.000	0	66	66
6000.000	6000.000	0	3	3
8000.000	8000.000	0	7	7

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
10000.000	10000.000	0	103	103
20000.000	20000.000	0	4	4
30000.000	30000.000	0	1	1
40000.000	40000.000	0	6	6
100000.000	100000.000	0	5	5
Total		5737700	452220	6189920

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

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Cable Modem	0.256	0.256	0	138	138
	0.384	0.384	0	3714	3714

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	1.000	0.256	0	6	6
	1.500	0.384	0	226	226
	1.500	1.500	0	9	9
	2.000	0.384	0	71	71
	2.000	2.000	0	2304	2304
	3.000	0.512	0	1110	1110
	3.000	3.000	0	15	15
	5.000	1.000	10	495	505
	5.000	2.000	0	497	497

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	5.000	5.000	0	3	3
	6.000	1.000	0	716	716
	6.000	2.000	0	39	39
	9.000	1.000	0	714	714
	10.000	1.000	222665	0	222665
	10.000	2.000	0	48775	48775
	10.000	10.000	0	1	1
	15.000	2.000	15307	0	15307
	15.000	3.000	0	5571	5571

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	15.000	5.000	0	99	99
	20.000	3.000	0	9703	9703
	20.000	4.000	0	2	2
	20.000	20.000	0	3	3
	25.000	3.000	169517	0	169517
	25.000	4.000	0	1393	1393
	25.000	5.000	18191	75786	93977
	25.000	15.000	0	2	2
	28.000	4.000	0	126	126

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	30.000	10.000	0	128	128
	30.000	30.000	0	2	2
	50.000	3.000	828613	0	828613
	50.000	5.000	0	6654	6654
	50.000	10.000	0	105727	105727
	50.000	15.000	0	9	9
	60.000	15.000	0	108	108
	80.000	10.000	0	4	4
	100.000	10.000	27602	104	27706

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	100.000	20.000	0	102988	102988
	140.000	30.000	0	4	4
	150.000	10.000	2500165	40	2500205
	150.000	20.000	4376	739	5115
	200.000	10.000	188393	0	188393
	200.000	20.000	0	30991	30991
	300.000	30.000	613354	18935	632289
	500.000	10.000	354462	0	354462
	500.000	35.000	0	4720	4720

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	1000.000	35.000	571528	3259	574787
Optical Carrier/Fiber to the End User	0.256	0.256	0	5	5
	0.384	0.384	0	6	6
	0.512	0.512	0	4	4
	1.000	1.000	0	44	44
	1.500	0.512	0	2	2
	1.500	1.500	0	232	232
	2.000	2.000	0	71	71
	3.000	3.000	0	97	97

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	4.000	4.000	0	6	6
	5.000	1.000	0	26	26
	5.000	2.000	0	18	18
	5.000	5.000	0	292	292
	6.000	2.000	0	1	1
	6.000	6.000	0	45	45
	7.000	7.000	0	3	3
	8.000	2.000	0	7	7
	8.000	8.000	0	3	3

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	9.000	9.000	0	1	1
	10.000	1.000	3668	0	3668
	10.000	2.000	0	30	30
	10.000	3.000	0	40	40
	10.000	10.000	0	938	938
	15.000	2.000	30	0	30
	15.000	3.000	0	100	100
	15.000	5.000	0	208	208
	15.000	15.000	0	10	10

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	15.500	5.000	0	27	27
	20.000	20.000	0	1582	1582
	25.000	3.000	1212	0	1212
	25.000	5.000	82	146	228
	25.000	10.000	0	64	64
	25.000	25.000	0	49	49
	30.000	30.000	0	762	762
	40.000	40.000	0	304	304
	45.000	45.000	0	7	7

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	50.000	3.000	19073	0	19073
	50.000	10.000	0	332	332
	50.000	15.000	0	137	137
	50.000	50.000	0	3771	3771
	60.000	60.000	0	13	13
	70.000	70.000	0	6	6
	75.000	10.000	0	4	4
	75.000	25.000	0	539	539
	75.000	75.000	0	13	13

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	80.000	20.000	0	19	19
	80.000	80.000	0	1	1
	90.000	90.000	0	3	3
	100.000	10.000	187	0	187
	100.000	20.000	0	311	311
	100.000	30.000	0	69	69
	100.000	50.000	0	1	1
	100.000	100.000	0	7045	7045
	130.000	130.000	0	1	1

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	150.000	10.000	90688	0	90688
	150.000	20.000	31	0	31
	150.000	40.000	0	6	6
	150.000	150.000	0	128	128
	155.000	155.000	0	5	5
	200.000	10.000	1648	0	1648
	200.000	20.000	0	177	177
	200.000	200.000	0	2562	2562
	250.000	250.000	0	56	56

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	300.000	30.000	32930	184	33114
	300.000	50.000	0	2	2
	300.000	75.000	0	12	12
	300.000	80.000	0	1	1
	300.000	300.000	0	1378	1378
	400.000	400.000	0	292	292
	500.000	10.000	18077	0	18077
	500.000	35.000	0	29	29
	500.000	500.000	0	1382	1382

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	600.000	600.000	0	22	22
	700.000	700.000	0	17	17
	800.000	800.000	0	3	3
	900.000	900.000	0	3	3
	1000.000	35.000	5955	16	5971
	1000.000	1000.000	49936	2214	52150
	2000.000	2000.000	0	142	142
	3000.000	3000.000	0	43	43
	4000.000	4000.000	0	26	26

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	5000.000	5000.000	0	66	66
	6000.000	6000.000	0	3	3
	8000.000	8000.000	0	7	7
	10000.000	10000.000	0	103	103
	20000.000	20000.000	0	4	4
	30000.000	30000.000	0	1	1
	40000.000	40000.000	0	6	6
	100000.000	100000.000	0	5	5
Total			5737700	452220	6189920

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
Alabama	0	0	46	0
Arizona	1148	0	566546	349060
Arkansas	0	0	53994	24761
California	2993	0	494349	298496
Colorado	0	0	1126	0
Connecticut	4	0	78175	55644
Florida	0	0	101764	56974
Georgia	0	0	36775	21683

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Idaho	0	0	3120	2014
Illinois	0	0	62	0
Indiana	0	0	38	0
Iowa	2	0	13444	8046
Kansas	401	0	132968	65300
Kentucky	0	0	4	0
Louisiana	33	0	228251	126779
Maryland	0	0	135	0
Massachusetts	0	0	92	0

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Michigan	0	0	25	0
Missouri	0	0	63	0
Nebraska	685	0	125098	65921
Nevada	0	0	270915	171771
New York	0	0	4	0
Ohio	0	0	23427	16998
Oklahoma	2636	0	267197	127983
Oregon	0	0	48	0
Pennsylvania	0	0	48	0

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Rhode Island	111	0	150718	86838
South Carolina	0	0	4	0
South Dakota	0	0	4	0
Tennessee	0	0	164	0
Texas	0	0	449	0
Utah	0	0	76	0
Virginia	5796	0	375915	190655
Washington	0	0	18	0
West Virginia	0	0	13	0

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Total	13809	0	2925075	1668923

Fixed Voice Subscription (VGE Lines)

VGE Lines Provided to Unaffiliated Providers by State

State	Wholesale	UNE-L
Arizona	0	0
California	0	0
Connecticut	0	0
Iowa	0	0
Kansas	0	0
Louisiana	0	0

State	Wholesale	UNE-L
Nebraska	0	0
Oklahoma	0	0
Rhode Island	0	0
Virginia	0	0
Total	0	0

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
Arizona	1148	27	1121	0	0	761	387

State	Total	by Bundle		by Product Type			
		Sold w/ Internet	Sold w/o Internet	Consumer		Bus-Govt	
				& No PIC	& PIC	& No PIC	& PIC
California	2993	65	2928	0	0	1752	1241
Connecticut	4	0	4	0	0	3	1
Iowa	2	0	2	0	0	1	1
Kansas	401	8	393	0	0	328	73
Louisiana	33	3	30	0	0	30	3
Nebraska	685	12	673	0	0	532	153
Oklahoma	2636	50	2586	0	0	1394	1242
Rhode Island	111	10	101	0	0	7	104

State	Total	by Bundle		by Product Type			
		Sold w/ Internet	Sold w/o Internet	Consumer		Bus-Govt	
				& No PIC	& PIC	& No PIC	& PIC
Virginia	5796	66	5730	0	0	4782	1014
Total	13809	241	13568	0	0	9590	4219

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
Arizona	1148	1057	91	0	8	1140	0	0
California	2993	2700	293	0	902	2091	0	0
Connecticut	4	4	0	0	0	4	0	0

State	Total	by Ownership			by Last-mile Medium			
		Owned	UNE-L	Resale	FTTP	Coax	Fixed Wireless	Copper
Iowa	2	2	0	0	0	2	0	0
Kansas	401	381	20	0	0	401	0	0
Louisiana	33	30	3	0	10	23	0	0
Nebraska	685	664	21	0	0	685	0	0
Oklahoma	2636	2428	208	0	152	2484	0	0
Rhode Island	111	108	3	0	0	111	0	0
Virginia	5796	5512	284	0	467	5329	0	0
Total	13809	12886	923	0	1539	12270	0	0

Fixed Voice Subscription (iVoIP)

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

State	Total	Consumer	Business / Govt
Alabama	46	0	46
Arizona	555	0	555
Arkansas	362	0	362
California	7551	0	7551
Colorado	1126	0	1126
Connecticut	11	0	11
Florida	142	0	142
Georgia	23	0	23
Idaho	53	0	53

State	Total	Consumer	Business / Govt
Illinois	62	0	62
Indiana	38	0	38
Iowa	76	0	76
Kansas	1116	0	1116
Kentucky	4	0	4
Louisiana	245	0	245
Maryland	135	0	135
Massachusetts	82	0	82
Michigan	25	0	25

State	Total	Consumer	Business / Govt
Missouri	63	0	63
Nebraska	932	0	932
Nevada	436	0	436
New York	4	0	4
Ohio	67	0	67
Oklahoma	580	0	580
Oregon	48	0	48
Pennsylvania	48	0	48
Rhode Island	88	0	88

State	Total	Consumer	Business / Govt
South Carolina	4	0	4
South Dakota	4	0	4
Tennessee	164	0	164
Texas	449	0	449
Utah	76	0	76
Virginia	2543	0	2543
Washington	18	0	18
West Virginia	13	0	13
Total	17189	0	17189

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
Alabama	0	0	0	0	0	0	0	0	0
Arizona	565991	349060	216931	467903	98088	14623	551368	0	0
Arkansas	53632	24761	28871	43310	10322	470	53162	0	0
California	486798	298496	188302	391248	95550	26363	460435	0	0
Colorado	0	0	0	0	0	0	0	0	0
Connecticut	78164	55644	22520	67847	10317	335	77829	0	0
Florida	101622	56974	44648	86630	14992	1735	99887	0	0
Georgia	36752	21683	15069	32070	4682	669	36083	0	0

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
Massachusetts	10	0	10	0	10	10	0	0	0
Michigan	0	0	0	0	0	0	0	0	0
Missouri	0	0	0	0	0	0	0	0	0
Nebraska	124166	65921	58245	93463	30703	1811	122355	0	0
Nevada	270479	171771	98708	233004	37475	7417	263062	0	0
New York	0	0	0	0	0	0	0	0	0
Ohio	23360	16998	6362	20456	2904	34	23326	0	0
Oklahoma	266617	127983	138634	202034	64583	11790	254827	0	0

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	373372	190655	182717	276004	97368	4354	369018	0	0
Washington	0	0	0	0	0	0	0	0	0
West Virginia	0	0	0	0	0	0	0	0	0
Total	2907886	1668923	1238963	2330578	577308	72369	2835517	0	0