Application to DHCD Submitted through CAMS

Rockbridge County

Rockbridge County - Brightspeed VATI 2023 Project

Application ID:	95707192022082912
Application Status:	Pending
Program Name:	Virginia Telecommunication Initiative 2023 - Application
Organization Name:	Rockbridge County
Organization Address:	150 S. Main Street Lexington, VA 24450
Profile Manager Name:	Brandy Flint
Profile Manager Phone:	(540) 463-1473
Profile Manager Email:	bflint@rockbridgecountyva.gov
Project Name:	Rockbridge County - Brightspeed VATI 2023 Project
Project Contact Name:	Spencer Suter
Project Contact Phone:	(540) 463-1460
Project Contact Email:	ssuter@rockbridgecountyva.gov
Project Location:	150 South Main Street Lexington, VA 24450-2359
Project Service Area:	Rockbridge County
Total Requested Amount:	$7,395,160.00
Required Annual Audit Status:	Accepted

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Budget Information:

Cost/Activity Category	DHCD Request	Other Funding	Total
Telecommunications	**$7,395,160.00**	**$3,717,020.00**	**$11,112,180.00**
Administration	$0.00	$50,000.00	$50,000.00
Construction	$6,436,883.00	$3,191,841.00	$9,628,724.00
Construction Related Soft Costs	$371,429.00	$184,180.00	$555,609.00
Other: Customer Connect Costs	$586,848.00	$290,999.00	$877,847.00
Total:	**$7,395,160.00**	**$3,717,020.00**	**$11,112,180.00**

Budget Narrative:

The total construction costs are $11,112,180 to construct 102 Miles of fiber. Brightspeed and Rockbridge County are seeking a grant of $7,395,160, 67% of the total construction costs, with Brightspeed providing funding of $2,444,680 (22%) and Rockbridge County providing the remaining funds of $1,272,340 (11%).

Questions and Responses:

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Rockbridge County - Brightspeed VATI 2023 Project

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:

Access to high-speed internet is the foundation for nearly every aspect of the future – commerce, entertainment, healthcare, and education, yet rural Virginia lacks sufficient broadband access, limiting opportunities for economic growth. In 2021 the Commonweath announced a $750M grant program, the Virginia Telecommunications Initiative (VATI), to expand internet access across the Commonwealth. Upon receiving notice for the available 2023 VATI grants, Rockbridge County (Rockbridge) began the process of securing a portion of these funds to deploy broadband infrastructure that fully connects unserved residents and businesses under its jurisdiction. Rockbridge recognized the value and economies of scale possible in working with the Central Shenandoah Planning District Commission (CSPDC) and Brightspeed (broadband provider) to submit a multi-partner grant application to fully connect residents and businesses in the region.

Rockbridge proposes to build on over ten years of intense focus on rural broadband expansion by concentrating on locations that are partially served, or are adjacent to areas served, by Rural Digital Opportunity Fund awards and Connect America funds, as well as locations that are already within Brightspeed's footprint. This will allow for the deployment of broadband in an efficient, cost-effective manner that increases service availability to some of the most remote and hard-to-reach regions in Rockbridge County.

This application consists of one project providing high-speed internet to 2,332 premises (includes 312 RDOF locations for which expenses are not included)many are which are located in remote areas with difficult topography. The project area will further expand the country's fiber-to-the-premise (FTTP) network access across difficult to reach areas where broadband access is needed. This effort and application is in concert with a simultaneous application being submitted by the County and BARC Connects, to jointly achieve functional universal broadband coverage in the County.

The unified goal is to connect all remaining unserved residences and businesses in Rockbridge County as comprehensively as possible by using Brightspeed's fiber network, along with the County's BARC application. This project, along with the County's BARC application, will complete the County's goal of functional universal coverage of the project area, with all locations having the option to be connected. High-cost locations due to issues such as long driveways, will have opportunities to be connected through LECAP. We estimate approximately 350 locations (not included in the 2,332 total), or less than 10% of all the locations within the census blocks to be served by this project are high-cost and require LECAP assistance to be economically feasible given the limitations in match percentage by the program. The County has had difficulty obtaining comprehensive data from ISPs to determine the full extent of any remaining unserved areas beyond the scope of this application; however, based on all available information, we believe that the two applications will achieve universal broadband coverage. Rockbridge County is the applicant for this multi-partner proposal including private partners Brightspeed and CSPDC. All applicants have worked together to identify areas unserved by 100/20 internet speeds for this proposed project area utilizing the most current Center for Innovative Technology (CIT) map and Federal Communications Commission (FCC) maps, attempting outreach to other ISPs, and speaking with residents in the proposed project areas to identify areas with mapping inaccuracies.

Please see attachment 1, for a map of the project area.

Attached documents:
Attachment 1 – Project Area Map

2. List existing providers in the proposed project area and the speeds offered. Describe your outreach efforts to identify existing providers and how this information was compiled with source(s).

Answer:

While Rockbridge conducted extensive research on the unserved areas under its jurisdiction, the County was unable to gather enough data from attempted outreach to ISPs to ensure a “challenge-free” proposal. To limit the probability of challenges, Rockbridge eliminated areas already served at a level of at least 25/3. In doing so, Rockbridge removed the BARC Connects, RANA and VTS areas which are either built or are planned to be built via other funding sources. Rockbridge also reached out to Comcast, achieving some success in identifying and eliminating a portion of the areas served by Comcast.

Based on resident feedback and the data the County did obtain, the County asserts that these project areas are unserved unless/until an ISP currently operating in Rockbridge can prove otherwise. ISPs currently operating in Rockbridge County include BARC Connects, Virginia Technology Services (VTS), Comcast, CenturyLink, ShenTel, Lumos, and Ting.

Rockbridge additionally does not have complete data on existing coverage levels or areas of coverage as other broadband providers currently operating in the county are privately held companies [and have been unwilling to share location specific speed data on areas they cover].As a result, the County along with Brightspeed, used publicly available data supplemented by community input.

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. Label Map: Attachment 2 – Documentation on Federal Funding Area.

Answer:

Accompanying the existing provider map is Attachment 2, showing the CAF and RDOF funded areas in Rockbridge County. As shown, Brightspeed (via its predecessor, CenturyLink) was awarded RDOF funding in certain areas that are not included in this application. Some of the proposed project areas under this application overlap with small portions of the RDOF funded areas of the Co-op Connections Consortium, as shown in Attachments 2 and 3 in VATI areas. However, these VATI builds will allow Brightspeed to expand its fiber network to adjacent unserved areas beyond the CAF and RDOF census blocks, increasing service availability to some of the most remote and hard-to-reach regions in Rockbridge County. It would not be possible to buildout to these areas without crossing CAF and RDOF funded areas. Rockbridge does not seek VATI funds to serve locations within CAF or RDOF census blocks; it intends to use VATI funds to serve the adjacent unserved areas around these areas to achieve the goal of ubiquitous broadband service throughout the entire County.

Attached documents:
Attachment 2 – Documentation on Federal Funding Area

4. 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 100/20 Mbps and with less than 25% service overlap within the project area for wireless projects and 20% 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 3 – Documentation Unserved Area VATI Criteria.

Answer:

As discussed above, Rockbridge County conducted extensive research and has knowledge of the unserved areas. The County attempted outreach to known ISPs offering broadband service. The County was unable to obtain complete county-wide data. Based on resident feedback and the data the County did obtain, the County asserts that these project areas are unserved unless/until an ISP can prove otherwise. Prior to putting this grant application together, Rockbridge attempted outreach to service providers known to provide service in the County and to discern areas already served with at least 100/20Mbps service. In doing so, Rockbridge removed the BARC Connects, RANA and VTS areas which are either built or are planned to be built using other funding sources. Rockbridge reached out to Comcast via phone and email conversations. It signed a non-disclosure agreement and received some limited information from which to work, but detail such as specific address points and speeds was not provided. Due to the lack of additional responses, Rockbridge does not have complete data on existing coverage levels or area of coverage as Comcast is a private company that does not make this information public. The County then referenced maps that are publicly available from the FCC to further determine the types of coverage and areas, and supplemented the map information with local knowledge. There are areas within census blocks that are considered served, but are likely not and are included in the application.

Attached documents:
Attachment 3 – Documentation Unserved Area VATI Criteria

5. Total Passings: Provide the number of total serviceable units in the project area. Applicants are encouraged to prioritize areas lacking 25 Megabits per second download and 3 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 4 – Passings Form.

   a. Of the total number of VATI passings, provide the number of residential, business, non-residential, and community anchors in the proposed project area.

   b. 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.

   c. 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.

   d. 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.

   e. Provide the number of passings in the project area that have 25/3 Mbps or less. Describe the methodology used for these projections. (up to 15 points)

Answer:

a) Residential: 1,952
Business: 55
Community Anchors: 13

b) There are approximately 312 RDOF passings included in the proposed project area. As mentioned above, no funding is requested related to these locations but will be passed to reach eligible locations outside of the RDOF areas.

c) 19 locations are considered to require special construction costs since they will exceed the standard 150 meters drop cable length.

d) 19 locations are considered to require special construction costs since they will exceed the standard 150 meters drop cable length.

e) 257 passings in the project area are not served by at least 25/3 Mbps, based on public FCC Form 477 census block data. The proposed number of passings were matched to their corresponding census blocks, then compared to FCC Form 477 data attesting to the maximum provided speeds in a census block, to identify the number of passings not served by 25/3. This number is likely severely understated given the known inaccuracies of Form 477 mapping data.

Attached documents:
Attachment 4 – Passings Form

6. Describe if any blocks awarded in Rural Digital Opportunity Fund (RDOF) are included in the VATI application area. If RDOF areas 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 5 – RDOF Awarded Areas Form in VATI Area

Answer:

There are approximately 312 locations that were awarded RDOF funding to Lumen (and will subsequently be inherited by Brightspeed) that are included in the application to be connected. Attachment 5 provides a breakdown of the locations by Census Block ID as well as by type of passing.

Separately, there are approximately 80 locations that were awarded RDOF funding for Co-op Connections Consortium that are included in this application that are considered unserved. Please see Attachment 2 for the map and these 80 locations are included in Attachment 4 – Passings Form

While certain areas of Lumen-won RDOF overlap the VATI proposed area, we are not seeking subsidy related to this build and have only included them in the application area for additional point consideration and to capture the route from which locations outside of the RDOF area will be served.

Attached documents:
Attachment 5 – RDOF Awarded Areas Form in VATI Area

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. 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:

Our proposal includes the deployment of state-of-the-art 10G symmetrical network equipment ("XGSPON") and the fiber necessary to deliver fiber-to-the-premises ("FTTP") service directly to customers' homes and businesses. Our base speed fiber offering provides 200 Mbps/200 Mbps (download/upload) speeds, and our top-end service will be at least a 1 Gbps symmetrical (i.e., 1 Gbps upstream and 1 Gbps downstream) speed service (or higher).

XGSPON is a 10 gigabit per second (Gbps) symmetrical Passive Optical Network delivered via a dedicated fiber loop to the customer's premises. This grant award will allow Brightspeed to provide high-speed data transfer rates up to 2 Gbps transported on a single fiber from the ILEC central office (CO) to the customer's home or business. In addition to having super-fast data throughput speeds, the network Brightspeed is deploying allows for symmetrical data transfer rates (the upload and download speeds are the same), which is the state-of-the-art for network design. The XGSGPON infrastructure eliminates the need for active electronics (and the associated power and real estate needs and maintenance costs) in the distribution plant. See attachment 18 for a white paper from Calix for more information. In deploying this infrastructure, Brightspeed will make use of the more efficient TAP network architecture. A TAP architecture can support a similar number of homes as a traditional centralized architecture using fewer fiber cables and less distribution equipment which allows for faster deployment and more cost savings see attachment 19 for a white paper from Corning for more information.

Brightspeed will provide XGSPON via a dedicated fiber loop to the customer's premises. This will require construction of approximately 102 miles of fiber throughout the grant area, plus the necessary electronics and terminals. Brightspeed will take-over and upgrade, as needed, CenturyLink's existing Central Offices, which contain the core fiber routers that connect to the remainder of the Brightspeed network and to the internet.

The capabilities of a fiber or Optical Distribution Network (ODN) are essentially limitless, offering customers an extremely reliable medium that is resilient in the face of bad weather - there is no service fade. XGSPON is a state-of-the-art Passive Optical Network (PON) technology that could scale up to 10 gigabits per second (GBPS) for both upload and download (i.e., symmetrical) data speeds. Together these products will easily serve customers' needs for decades to come.

The proposed network and technology solution is also upgradeable and will have the ability to be upgraded to faster speeds in the future. The useful life of fiber is approximately 20 years, giving the project a long lifespan during which it can continue to better the community. The maximum speed that can be marketed in 10 years will be at least 1G/1G, with opportunities to scale to faster speeds.

Middle mile facilities for transporting information from the originating central offices to internet servers will also require equipment upgrades for project execution that will be considered in the project design. Brightspeed will upgrade the existing backhaul network infrastructure as required, using state-of-the-art transport and routing technologies, substantially increasing the bandwidth capacity with a fault tolerant design, fully supporting the XGSPON broadband services.

Attached documents:
Attachment 18 – Calix White Paper
Attachment 19 – CRR Corning DTAP

9.

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 100/20 Mbps. (up to 10 points)

Answer:

Service Name

Technology Type

Upload/Download Speeds

Data Cap

Price

ACP Eligible Offer

Fiber

200 Mbps/200 Mbps

None-Unlimited

Under Evaluation

200 Mbps

Fiber

200 Mbps/200 Mbps

None - Unlimited

$72

500 Mbps

Fiber

500 Mbps/500 Mbps

None - Unlimited

$92

1 Gbps

Fiber

940 Mbps /940 Mbps

None - Unlimited

$120

* Each home will have a dedicated fiber strand that is aggregated. These prices represent maximum initial prices offered.

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:

Access to high-speed Internet is the foundation for nearly every aspect of the future – commerce, entertainment, healthcare, and education, sustainability, yet for most parts of rural Virginia broadband is lacking, negatively impacting economic growth, education, and quality of life. This project will create a brighter future for all rural residents in Rockbridge County. It has the potential to create economic growth opportunities; drive new housing starts and sales of existing homes; create telecommuting opportunities; and stimulate economic growth in the creation of new small and home-based businesses. It will attract new business to the area and enable the expansion of existing businesses. High-speed broadband will help the county to retain a trained, competitive workforce better able to compete with more densely populated regions that currently have broadband infrastructure in place to meet residential and business needs. With Brightspeed's broadband expansion supported by VATI, this region of Virginia is poised to experience long-term sustainable economic growth.

Although Rockbridge has placed intense focus on building more access to high-speed Internet service over the past 10 years, there are still low-density areas in the county that lack this access. Due to high costs for construction, larger carriers have not invested the dollars needed to reach these areas. In response, Rockbridge has partnered with Brightspeed to expand the availability of highspeed Internet service. Leveraging Brightspeed's planned RDOF builds, Rockbridge is able to propose a project that is more cost effective to the community. Nearly all locations will be served across the county which will reach universal coverage. There are select locations with extremely high costs (>$15,000 per home) which compose around 15% of the remaining homes which will ultimately be served via Virginia's LECAP program to reach a point in the county where all citizens who want high speed broadband will be able to have it. Funding of this grant will help Rockbridge to achieve its goal of providing access to affordable, reliable high-speed Internet service to areas that are unserved or underserved. The unified goal of both applications is to connect all remaining unserved residences and businesses in Rockbridge County as comprehensively as possible by using Brightspeed's and BARC's fiber network along with supported middle-mile fiber from Dominion.

Rockbridge's project with Brightspeed will leverage Brightspeed's existing wire centers to expand Brightspeed's broadband service network to deploy 102 total miles of gigabit last mile fiber infrastructure providing Fiber-To-The-Premise (FTTP) service to unserved residents and businesses. This fiber project expansion will pass 2,258 residences, 55 businesses, and 13 community anchor institutions in Rockbridge. A total of 2,332 residences/businesses will be served through this project (which includes approx. 312 RDOF awarded locations). The VATI-requested funding will be allocated solely to connecting homes and businesses in the unserved areas of Rockbridge as identified in our mapped attachments. The match provided by Brightspeed will be used for fiber construction to build to the unserved areas, as well as inside the unserved areas, making FTTP service available to all customers along the routes. Grant funding is required to help offset the high capital costs associated with bringing reliable broadband service to these unserved and low-density rural residences and businesses.

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 are encouraged to extensively discuss, where applicable, easements relating to railroad crossings, federally-owned lands and parks, partnerships with the Virginia Department of Transportation, and mobile home parks. 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 10 points)

Answer:

Brightspeed will undertake commercial best efforts to complete the project within 24 months of the execution of the Grant Agreement, given the size of the project. We fully expect to achieve this goal and note that like any major construction project the schedule is subject to change and to various factors, including delays due to weather or Act of God events, obtaining necessary permits in a timely manner, and difficulty in obtaining and deploying necessary fiber, equipment, labor, and other resources needed to complete the project as scheduled.

Attached documents:
Attachment 7 – Timeline/Project Management Plan
Attachment 8 – MOU/MOA between Applicant/Co-Applicant

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

Answer:

The CSPDC submitted a VATI application on behalf of Rockbridge County with co-applicant BARC Electric Cooperative in 2019 and was awarded a $2.2 million grant. The project brought broadband access to 470 unserved homes and businesses in Rockbridge County resulting in approximately 118 miles of gigabit last mile fiber infrastructure and a total cost of $4.4 million dollars. The CSPDC served as the grant administrator and worked with Rockbridge County and BARC through the completion of the project. This project was completed in April 2022.

In 2021, Brightspeed's predecessor, CenturyLink, in partnership with Albemarle County, was awarded a $2.2 million grant to provide connectivity to 1,675 locations with construction of approximately 100 miles of fiber-optic cable.

13. Matching funds: Complete the funding sources table indicating the cash match and inkind 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 minimum20% match is required to be eligible for VATI, the private sector provider must provide10% 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. If applicants and co-applicants are seeking to include prior expended funds as matching funds, Attachment 11 must be completed. Label Attachments: Attachment 9 - Funding Sources Table; Attachment 10 – Documentation of Match Funding; Attachment 11 - Prior Expended Match Form

Answer:

Brightspeed is committing 22% ($2,442,680) and Rockbridge County is committing 11% ($1,272,340) of the overall project cost. The County's commitment is via dedication of 90% of its overall ARPA funds to the Brightspeed and BARC 2023 VATI project applications.

Attached documents:
Attachment 9 – Funding Sources Table
Attachment 10 – Documentation of Match Funding – Not Included
Attachment 11 – Prior Expended Match Form - Not Included

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:

This project is a joint effort by Rockbridge County and Brightspeed, and CSPDC to bring reliable, affordable highspeed internet service to the residents and businesses that are unserved in the defined project areas of Rockbridge County. All parties are committed to connecting the rural areas in Rockbridge identified in this proposed project area to reliable high -speed internet. Rockbridge County and the CSPDC have provided extensive in-kind support to the regional planning process and in identifying unserved areas included in the scope of the project areas within the application. The project includes 4 main identified areas that are unserved in Rockbridge County. If funded, this project will leverage Brightspeed's existing wire centers to expand the fiber network, making FTTP service available to low-density areas including almost 2,332 homes and businesses in Rockbridge County. To accomplish this, Brightspeed plans to expand its fiber-optic internet network throughout Rockbridge, utilizing 67% VATI funding, 11% county funding, and 22% of Brightspeed matching funds for the fiber build. In leveraging partnerships with all applicants and the CSPDC, broadband service in the County will create potential economic growth opportunities; telecommuting opportunities and improve the rural quality of life; it will provide opportunities for new business attraction and expansion; it will retain a trained, competitive workforce; and it will compete with more densely populated regions that currently have broadband infrastructure in place to meet residential and business needs. This project will position Rockbridge to take advantage of recent trends of outmigration from urban environments for those seeking a better quality of life while still retaining access to modern, digital needs.

15. Communications Plan: Describe efforts to keep the public informed of project progress and the broadband adoption plan.

    a. Explain how you plan on communicating the project status to stakeholders, including but not limited to County leadership, project areas residents, etc. (Up to 10 points)

    b. 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)

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

Answer:

a) Both Rockbridge and the CSPDC will provide significant local assistance to assist with this project to ensure its success in the region. Through grant admin services, the CSPDC will hold monthly project management team meetings. The CSPDC will distribute monthly meeting summaries to all team members. The CSPDC can also share the monthly reports submitted to DHCD. The County can use information from both to update the board. The CSPDC can share any project news through their newsletter, and/or social media platforms. These activities will include organizing meaningful community meetings with leaders, residents, and businesses in the County to discuss the project; mobilizing GIS resources to assist Brightspeed with defining the project boundaries to clearly identify who will be eligible for service; and provide assistance to Brightspeed staff to respond to residents' questions or concerns related to the project. Additionally, the county will assist with the distribution of information including marketing materials; pricing for available services; guidance to sign-up for selected services. If needed, Rockbridge agrees to assist in areas related to permits, rights of way, easements and any other issues that may hinder or delay the proposed project. However, Brightspeed anticipates few issues, as it has existing ROW to customers previously served through Century Link.

b) Brightspeed will utilize effective marketing campaigns and informational resources to drive broadband adoption in the area. Face to face marketing teams will be available to engage and educate prospects on Brightspeed internet product details and ordering processes, and local teams will work to determine other marketing methods with wide reach that will be effective in the area. These may include direct mail, a prelaunch website, a dedicated website for the service area, yard signs, door hangers, press releases, and/or mobile marketing. Community education forums may be conducted through launch events where customers can ask questions and register for service. We will evaluate customized joint marketing programs for applicability and mutual benefit with partners closer to service launch.

To acquire customers, Brightspeed will utilize standard go-to-market plans for fiber-to-the-home launches. Brightspeed's local teams will determine, based on the geography of the impacted households, the best method of marketing the launch. Like the marketing/customer segmentation strategy, the sales strategy will be determined by local Brightspeed teams to ensure the highest degree of efficacy within the targeted communities.

We anticipate a take rate between 55% and 65%. This would be consistent with historical experience in rural areas with a single provider.

c) Community education forums may also be conducted through launch events where customers can ask questions and register for service. Customized joint marketing programs could be evaluated for applicability and mutual benefit. In addition, the local Chamber of Commerce supports this application and provides a mechanism for reaching the business sector. Similarly, the Rockbridge County Public School Division is a supporter and will assist in reaching families of the student population.

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.

Answer:

Individual

Position

Experience

Bob Mudge

Chief Executive Officer

Bob's leadership roles at Verizon and other telecommunications entities span the gamut from network operations to marketing and strategy. He has deep expertise in public and private companies and has served as an advisor to multiple private equity firms.

Chris Creager

Chief Administration Officer

Chris brings a wealth of leadership experience in transforming wireline telecom businesses and driving customer growth. During his tenure with Verizon, he led large network and multi-billion-dollar business units that created powerful fiber optic access to millions of homes and businesses.

Tom Maguire

Chief Operating Officer

Tom's telecommunications experience spans four decades, from an early career as a field technician to subsequently leading many facets of the business. This experience brings a unique perspective to Brightspeed's business model and influences Tom's belief that operations is most effective when it works with other parts of the organization to provide the best customer experience.

John Livecchi

Director of Engineering

A results-oriented decision-maker with 30+ years of technical and hands-on experience, leading large and small teams working across OSP engineering, construction, operations, regulatory, supply chain, and sourcing.Extensive FTTx Engineering, Design, Inventory Planning, and Regulatory Compliance experience at major telecom firms including Charter and Verizon

Spencer Suter

Rockbridge County Administrator

Responsible for overseeing Rockbridge County VATI grant and matching contributions for grant. Executes contracts, MOUs, and agreements. .

Hunter Moore

CSPDC Regional Planner

Grant administration and coordination with localities, DHCD and ISP providers. Prepares progress reports and assists with mapping and GIS.

17. **Project Budget and Cost Appropriateness**

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

Answer:

The total construction costs are **$11,112,180** to construct **102** Miles of fiber. Brightspeed and Rockbridge County are seeking a grant of **$7,395,160, 67%** of the total construction costs, with Brightspeed providing funding of **$2,442,680 (22%)** and Rockbridge County providing the remaining funds of **$1,272,340 (11%)**. Brightspeed has included only costs directly associated with construction of the Rockbridge County project. The funding received will not subsidize Brightspeed expenses or the monthly bills of its customers and will not contribute to Brightspeed operating costs or profits. Absent receipt of the broadband expansion grant, Brightspeed will not undertake the project to the extent proposed.

The total construction cost includes Outside Plant (OSP) (Fiber, Material & Equipment) along with Inside Plant (Install, Contract, Labor) cost amounts. Brightspeed will own and operate the facilities as part of its telecommunications network. The construction costs are related to project planning, obtaining construction permits, construction of facilities, and installation and testing of the broadband service being constructed. For more information on the anticipated distribution of the project budget, including across the categories of Central Office/Electronics, Labor, Materials by Fiber Type, Customer Connect Costs, and other related expenses, please see Attachment 12 & 13.

To achieve efficiencies in expenditures, Brightspeed intends to leverage existing construction plans in the project area, part of the various planned fiber builds that the organization has planned in the state already. This project will also be able to leverage four existing Lumen central offices within the project area. These existing resources will allow the project to be as economically as possible, and their existence offers Brightspeed greater budget flexibility in executing this project. Discussing competitive procurement, Brightspeed consistently engages in competitive capital expenditure through RFPs for all major purchases.

Attached documents:
Attachment 12 – Derivation of Costs
Attachment 13 – Documentation of Supporting Cost Estimates

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

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

Answer:

a. Total VATI funding request: $7,395,160
b. Number of serviceable units: 2,020 **Does not include RDOF locations as those locations have costs not included

19.

Commonwealth Priorities (Up to 50 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 100/20 mbps, include information regarding the internet service provider's participation in the Affordable Connectivity Program

d. The co-applicant's efforts to mitigate supply chain constraints, including labor shortages and order-to-delivery delays on telecommunications materials required to construct broadband networks.

e. The applicant's and co-applicant's efforts to promote broadband adoption, including, but not limited to: telehealth, smart farming, e-entrepreneurship, and distance learning.

Answer:

a) Please see Attachment 20 for a list of community anchors and businesses in the project area.

Attached documents:
Attachment 20 – List of Community Anchors and Businesses

b) As a stand-alone ISP, Brightspeed will build all necessary infrastructure and connections. However and as noted in 15© above, the County and Brightspeed will partner with the Lexington/Rockbridge Chamber of Commerce and the Rockbridge County Public Schools to market the offering. Additionally, and though not a direct partnership, this application and that of the County/BARC application are complementary in achieving the goal of universal broadband coverage.

c) Brightspeed's predecessor CenturyLink was a long-time provider of Lifeline services through the FCC Lifeline program and provided either the voice or the broadband credit to qualifying customers. CenturyLink also participated in the federal Emergency Broadband Benefit (EBB) program and Brightspeed plans to participate in the new federal Affordable Connectivity Program, which replaced EBB in 2022. All Brightspeed Customers who qualify for ACP can get the $30 ACP discount on any plan. Additionally, Brightspeed plans to make available to ACP qualified customers a plan that is $0 Monthly after the $30 subsidy. Where Fiber is available, that plan will be a 200Mbps with no data caps and no additional fees. In DSL areas, that plan will provide best available speeds. Lastly, Brightspeed is currently working on other innovative pricing and marketing activities to help further the reach of low-cost, high-speed internet to previously underserved areas.

d) Brightspeed is aware of the current and likely ongoing supply chain constraints as well as labor shortages. To address both issues, we have proactively entered into an agreement with a national material distributor, KGPco, to facilitate timely procurement, stocking and distribution to our infrastructure services providers that we will be partnering with to complete any awarded fiber deployment. Additionally, we have entered into long term contracts with key material suppliers, i.e. Corning, Calix, Prysmian, to secure future manufacturing capacity and provide forecast of anticipated needs. From a labor perspective, Brightspeed has already secured capacity under contract from multiple national infrastructure services provides that are experienced with fiber deployment and have additional labor capacity secured via line extension agreements which are being assigned to Brightspeed from Lumen for contractor build capacity.

e) Brightspeed will utilize effective marketing campaigns and informational resources to drive adoption in the area. Face to face marketing teams will be available to engage and educate prospects on Brightspeed internet product details and ordering processes, and local teams will work to determine other marketing methods with wide reach that will be effective in the area. These may include direct mail, a prelaunch website, a dedicated website for the service area, yard signs, door hangers, press releases, and/or mobile marketing. Community education forums may be conducted through launch events where customers can ask questions and register for service. We will evaluate customized joint marketing programs for applicability and mutual benefit with partners closer to service launch. In addition to working with our supportive school division and Chamber of Commerce to get the word out to students/parents and businesses, the County will work with the active membership Rockbridge Farm Bureau to ensure that the significant number of farm businesses contained in the project area are apprised of the benefit of broadband connection.

To acquire customers, Brightspeed will utilize standard go-to-market plans for fiber-to-the-home launches. Brightspeed's local teams will determine, based on the geography of the impacted households, the best method of marketing the launch. Like the marketing/customer segmentation strategy, the sales strategy will be determined by local Brightspeed teams to ensure the highest degree of efficacy within the targeted communities.

Application to DHCD Submitted through CAMS

20. **Additional Information**

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 14 – Letters of Support.

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 15 –Two most recent Form 477 submitted to the FCC or equivalent

b. Attachment 16 - Point and Polygon shapefiles, in.zip file form, showing proposed passings and project area

c. Attachment 17 - For wireless applicants: shapefiles, in .zip file form, indicating RSSI projections in the application area

d. Attachment 18 – XXXXXXX

e. Attachment 19 – XXXXXXX

f. Attachment 20 – XXXXXXX

Answer:

N/A

Attachments:

Map(s) of project area, including proposed infrastructure

Attachment1ProjectAreaMap8252022123847.pdf

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

Attachment2DocumentationonFederalFundingArea8252022123920.pdf

Documentation that proposed project area is unserved based on VATI criteria

Attachment3DocumentationUnservedAreaVATICriteria8252022123935.pdf

Application to DHCD Submitted through CAMS

Rockbridge County

Rockbridge County - Brightspeed VATI 2023 Project

Passings Form (Use template provided)

Attachment4PassingsForm8252022123956.pdf

Documentation of RDOF awarded area in VATI project Area (Use template provided)

Attachment5RDOFAwardedAreasForminVATIApplication8252022124031.pdf

Propagation Map if Wireless Project

Attachment6PropagationMapNA8252022124100.pdf

Timeline/Project Management Plan

Attachment7TimelineProjectManagementPlan8252022124115.pdf

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

Attachment8MOUMOAbetweenApplicantCoApplicant8252022124135.pdf

Funding Sources Table (Use template provided)

Attachment9FundingSourcesTable825202231524.pdf

Documentation of Match Funding

Attachment10DocumentationofMatchFunding8252022124200.pdf

Prior Expended Match Form (use template provided)

Attachment11PriorExpendedMatchFormNA8252022124230.pdf

Derivation of Cost/Project Budget (Use template provided)

Attachment12DerivationOfCostsFOIAexemptCAMS8252022124244.pdf

Documentation of Supporting Cost Estimates

Attachment13DocumentationofSupportingCostEstimatesFOIAexemptCAMS8252022124308.pdf

Letters of Support

Attachment14LettersofSupport8252022124351.pdf

Application to DHCD Submitted through CAMS

Rockbridge County

Rockbridge County - Brightspeed VATI 2023 Project

Two most recent Form 477 submitted to the FCC or equivalent

Attachment15TwomostrecentForm477submittedtotheFCCorequivalent8252022124415.pdf

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

Attachment16PointandPolygonshapefiles825202210013.zip

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

Attachment17RSSIProjectionShapefileNA825202210020.pdf

Optional

Attachment18CalixWhitePaper825202210039.pdf

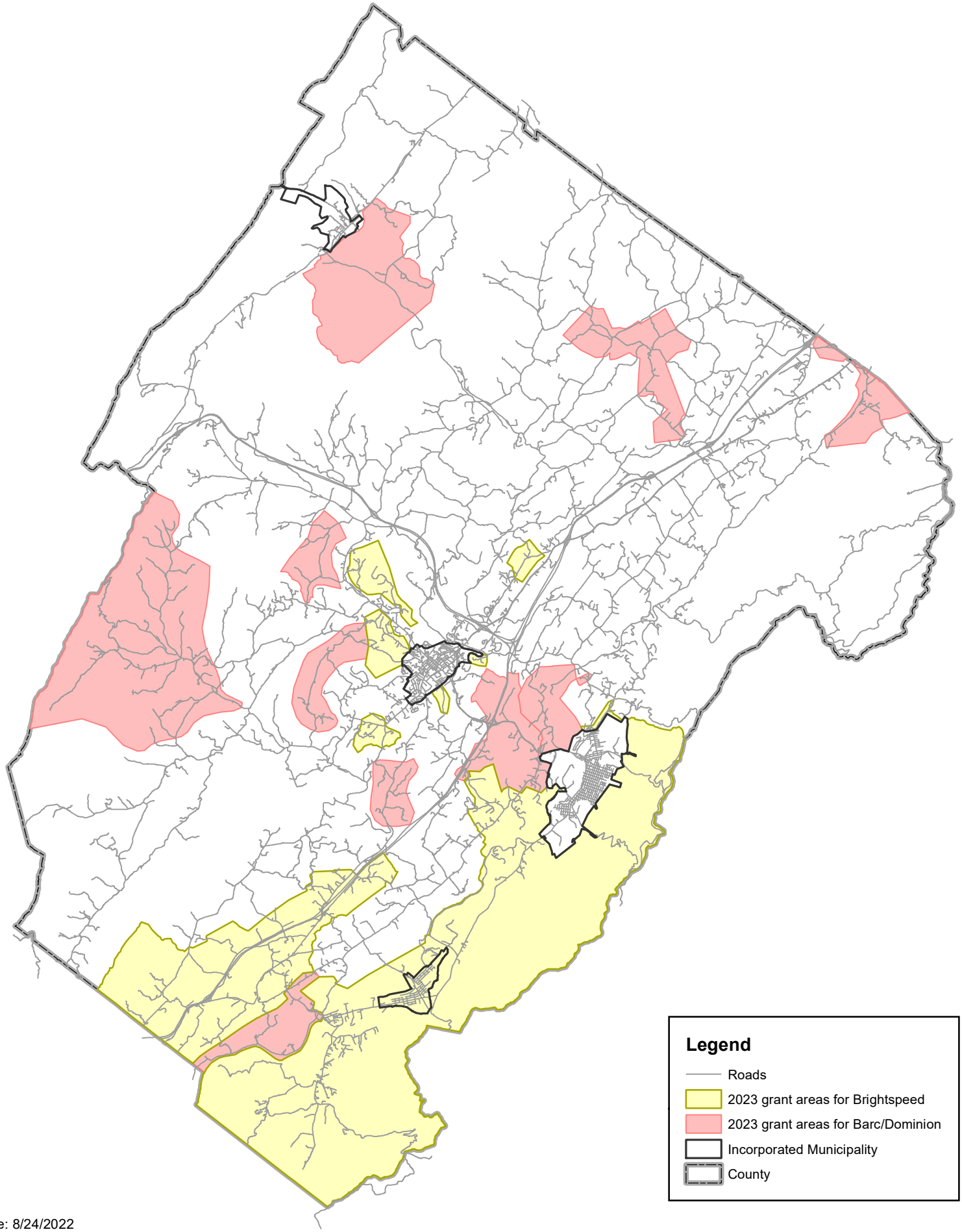
Optional

Attachment19CorningWhitePaper825202210048.pdf

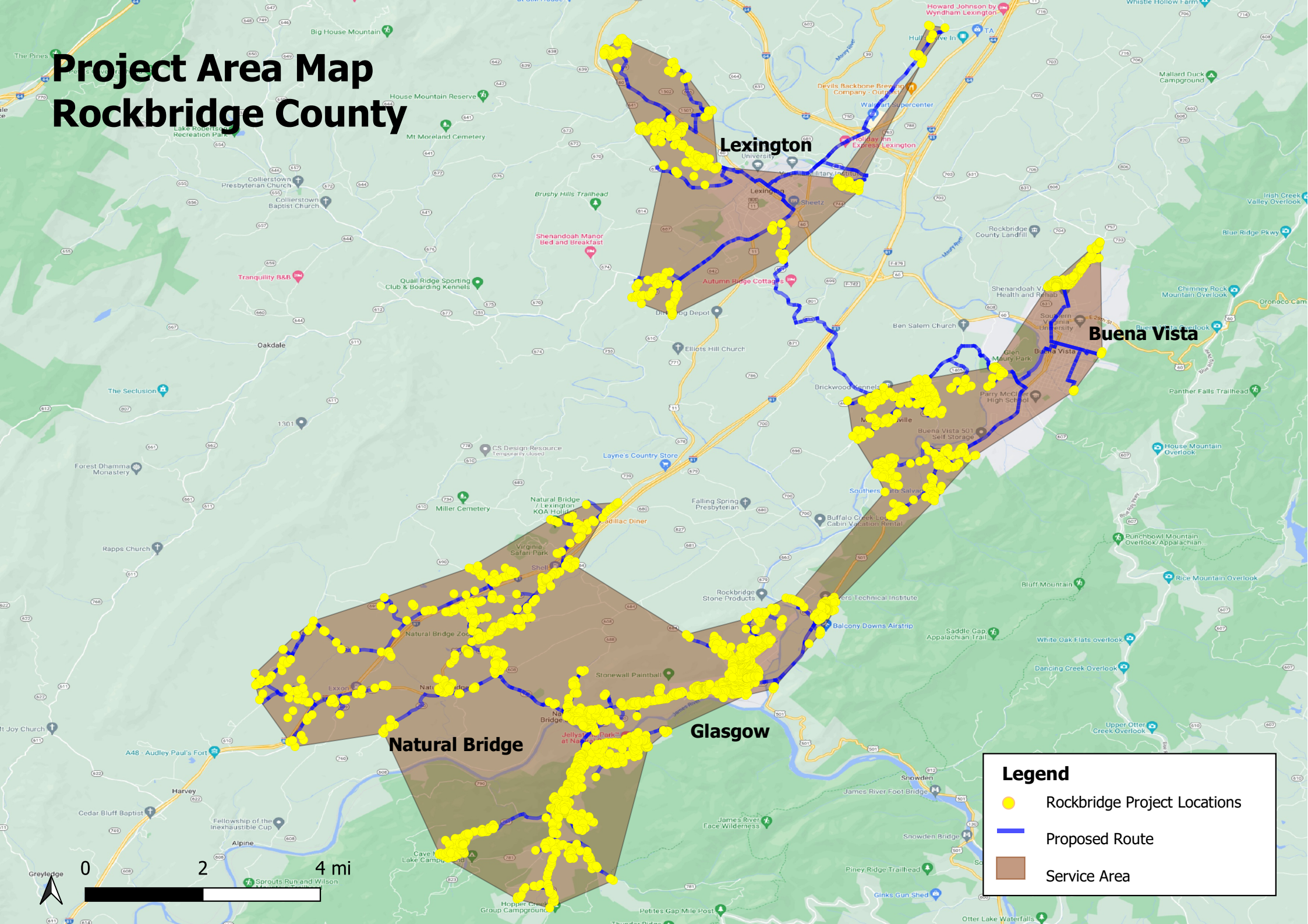
Optional

Attachment20ListofCommunityAnchorsandBusinesses825202210100.pdf

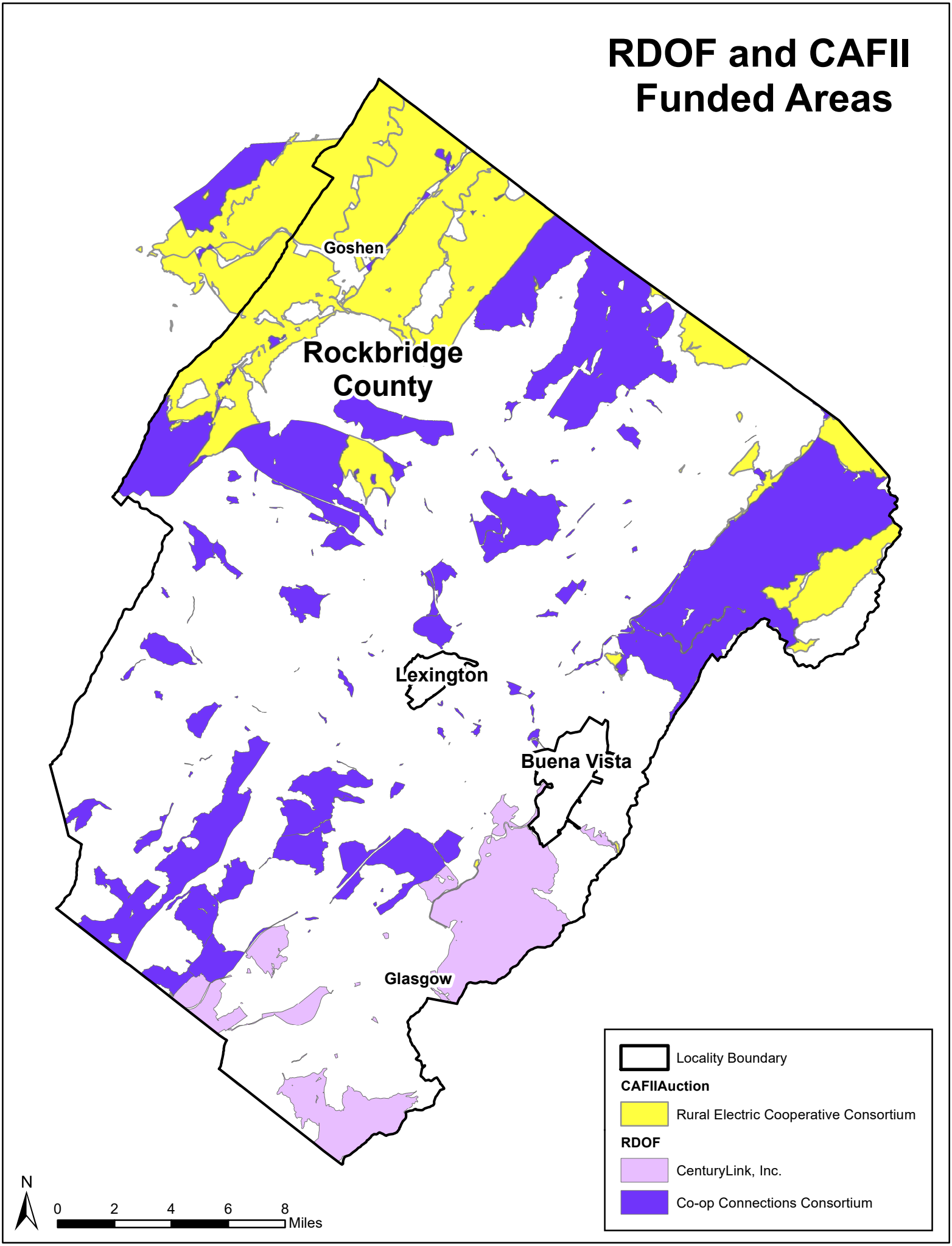
Rockbridge County VA
2023 VATI Grant Areas
Barc/Dominion and Brightspeed

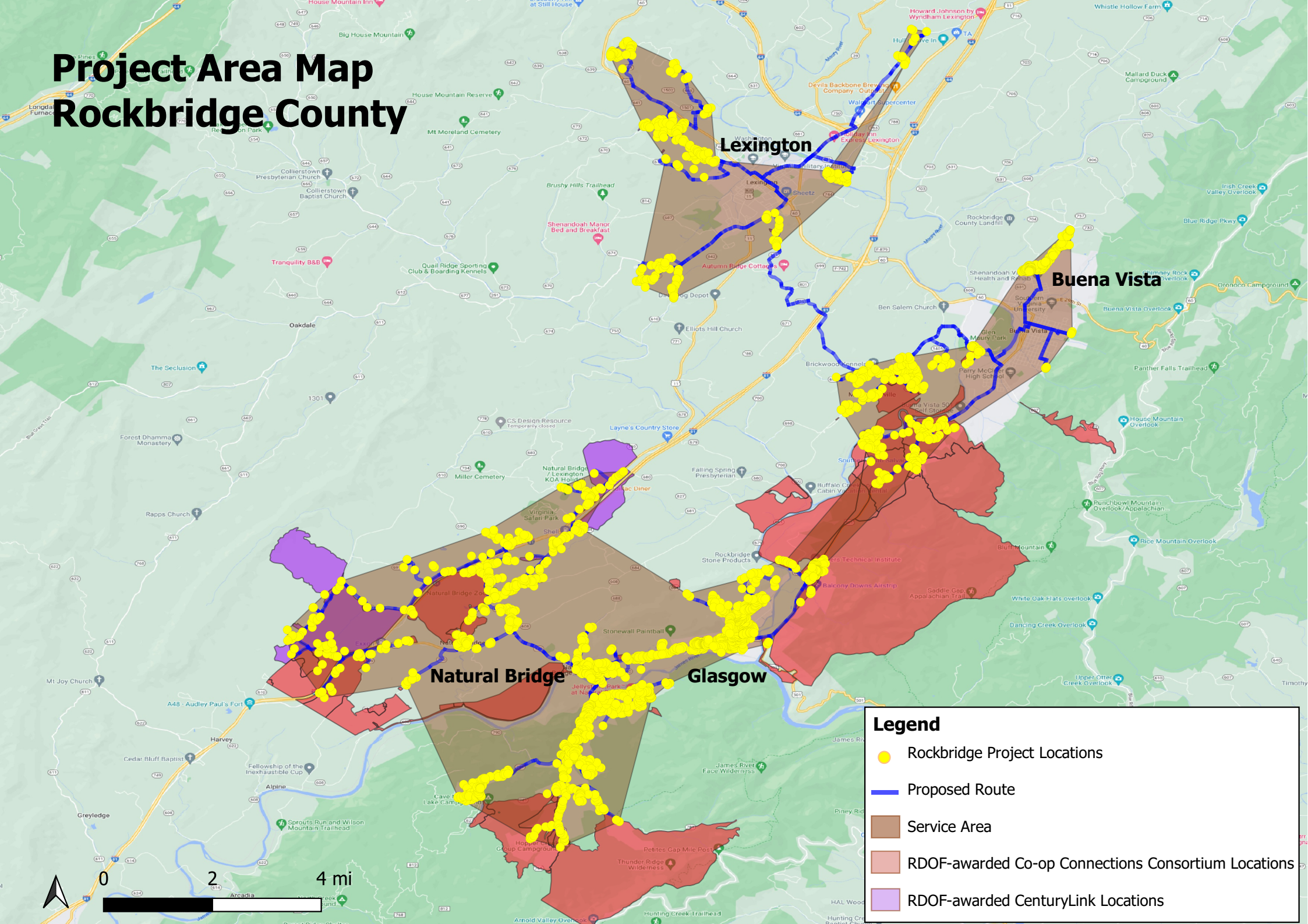


Date: 8/24/2022

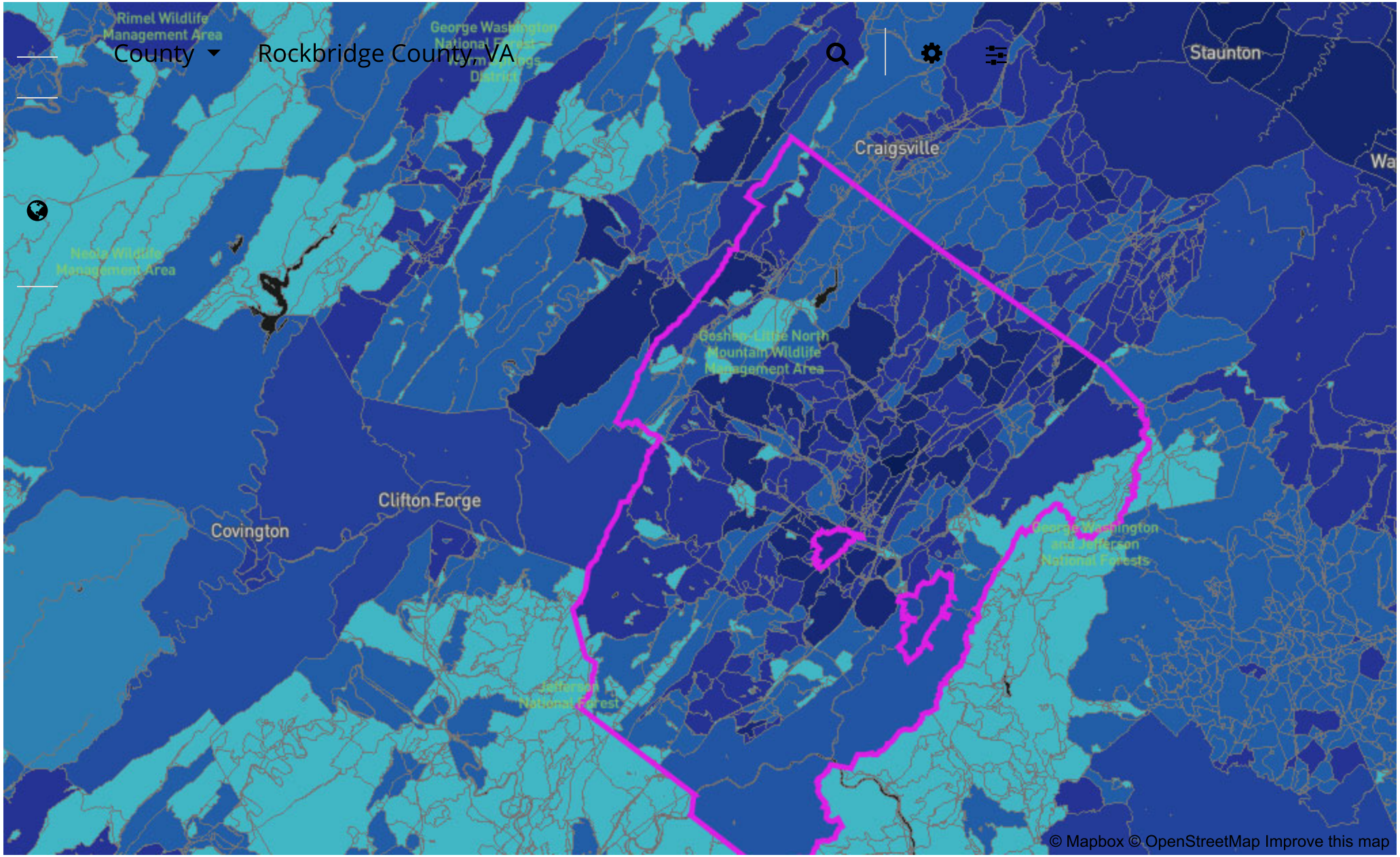

Project Area Map
Rockbridge County
Lexington
Buena Vista
Natural Bridge
Glasgow
Legend
Rockbridge Project Locations
Proposed Route
Service Area
0
2
4 mi

RDOF and CAFII Funded Areas




Project Area Map
Rockbridge County
Lexington
Buena Vista
Natural Bridge
Glasgow
Legend
Rockbridge Project Locations
Proposed Route
Service Area
RDOF-awarded Co-op Connections Consortium Locations
RDOF-awarded CenturyLink Locations
0
2
4 mi

Area Summary



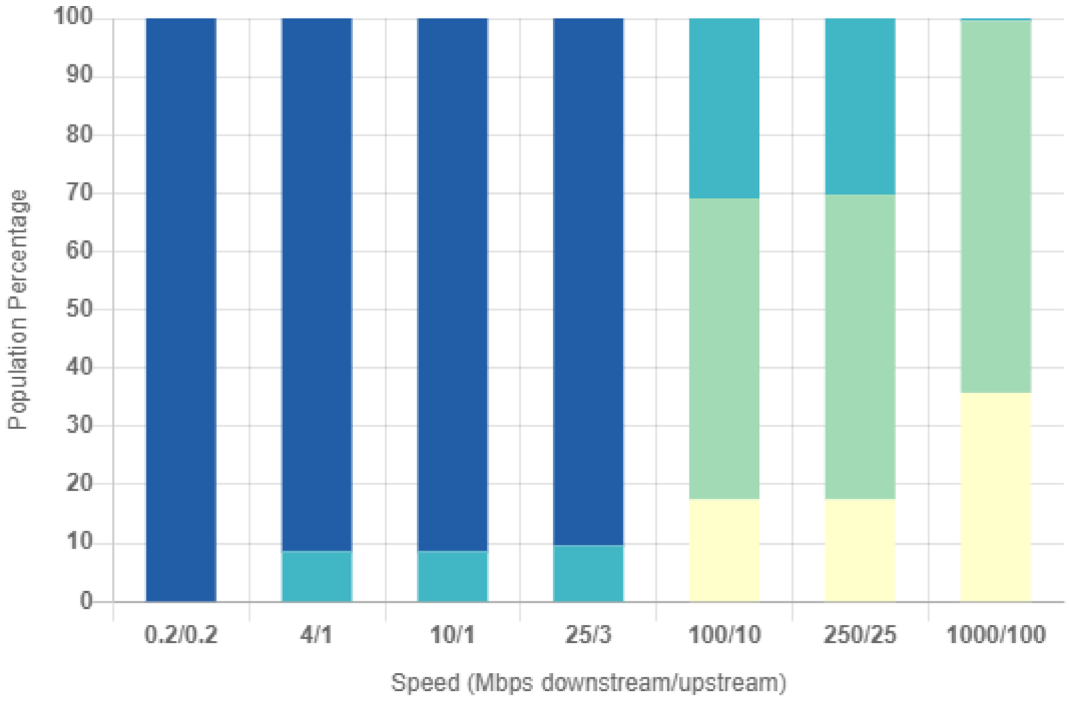
Rockbridge County, VA

Number of Fixed Residential Broadband Providers

0	1	2	3	4	6	12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2020 *(latest public release)*



Virginia Broadband Availability Map and Integrated Broadband Planning and Analysis Toolbox

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Rockbridge County

Show Results

ON

Coverage Query Results

Provider	Technology	Consumer Upload Speed	Consumer Download Speed	Business Upload Speed	Business Download Speed

Va. Funding Query Results

County	Partner	Year	Award Amount	Units Contracted to Pass	Funding Program

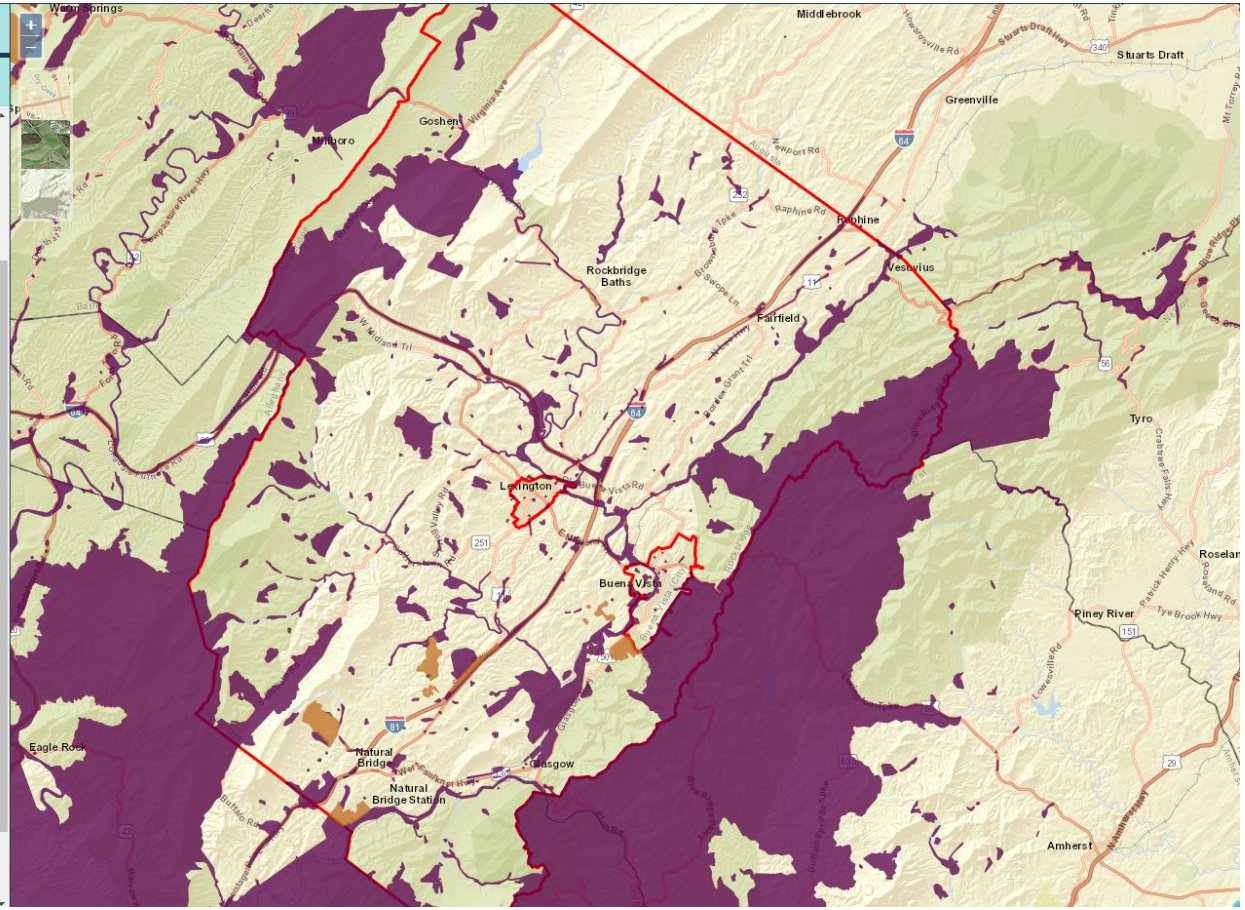
Broadband Layers

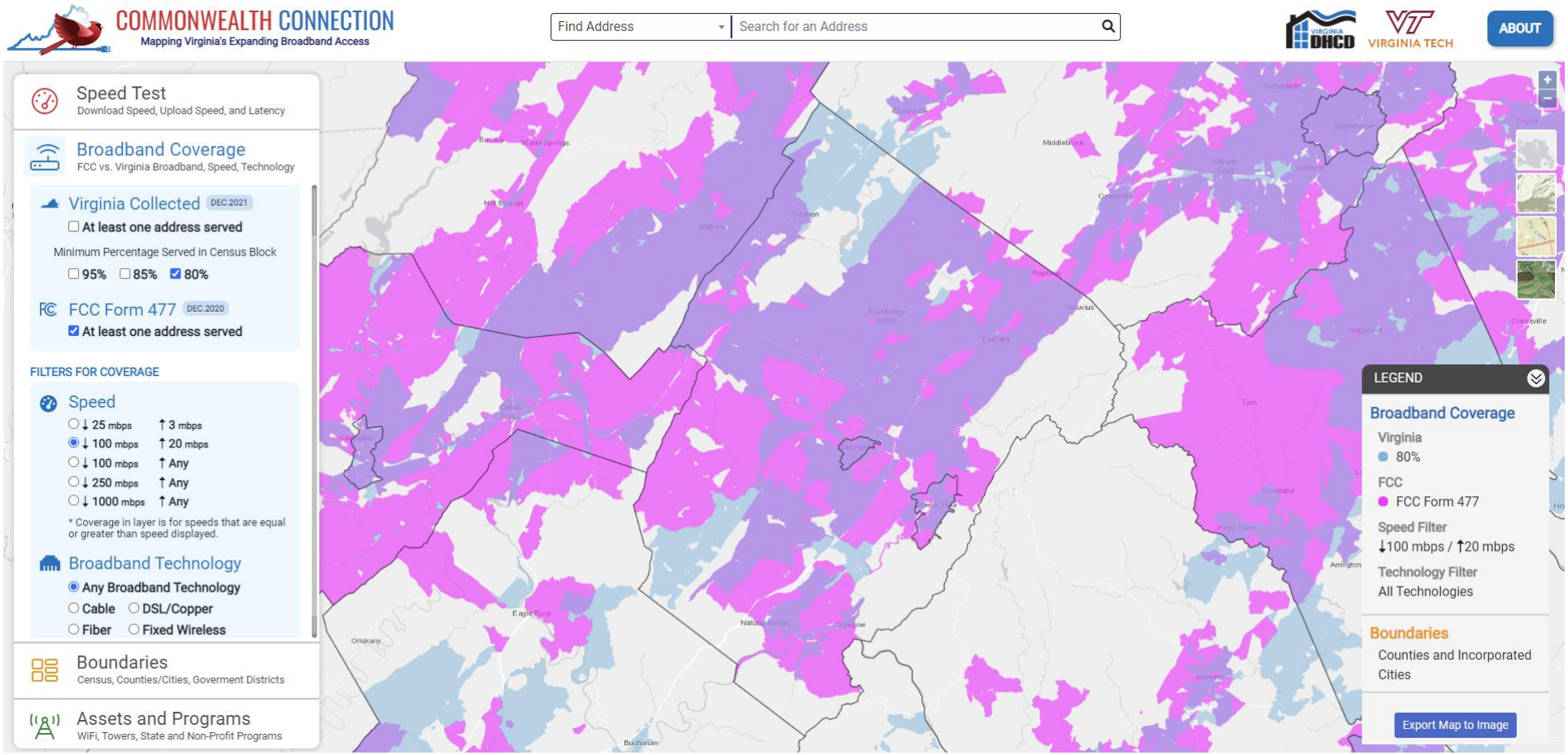
Export to Image

- Cable Wireline Coverage (June 2020)
- DSL/Copper Coverage (June 2020)
- Fiber Optic Coverage (June 2020)
- Fixed Wireless Coverage (June 2020)
- Mobile Wireless Coverage (Dec. 2018)
- 4G/LTE Wireless Coverage (Dec. 2018)
- Satellite Coverage (Dec. 2018)
- Virginia Telecommunication Initiative (VATI) Funding
- Tobacco Region Revitalization Commission (TRRC) Funding
- Underserved Areas (June 2020)
  Greater than 10 Mbps download and 1 Mbps upload and less than 25 Mbps download and 3 Mbps upload.
- Unserved Areas (June 2020)
  Below or equal to 10 Mbps download and 1 Mbps upload.
- No Residential Broadband Reported (June 2020)
  25 Mbps download and 3 Mbps upload.

Other Layers

- Cities/Counties
- Vertical Assets (updated daily)
- 2010 Census Population
  - 0 - 71




COMMONWEALTH CONNECTION
Mapping Virginia's Expanding Broadband Access
Find Address
Search for an Address
VIRGINIA DHCD
VIRGINIA TECH
ABOUT
Speed Test
Download Speed, Upload Speed, and Latency
Broadband Coverage
FCC vs. Virginia Broadband, Speed, Technology
Virginia Collected
DEC 2021
At least one address served
Minimum Percentage Served in Census Block
95%
85%
80%
FCC Form 477
DEC 2020
At least one address served
FILTERS FOR COVERAGE
Speed
↓ 25 mbps ↑ 3 mbps
↓ 100 mbps ↑ 20 mbps
↓ 100 mbps ↑ Any
↓ 250 mbps ↑ Any
↓ 1000 mbps ↑ Any
* Coverage in layer is for speeds that are equal or greater than speed displayed.
Broadband Technology
Any Broadband Technology
Cable
DSL/Copper
Fiber
Fixed Wireless
Boundaries
Census, Counties/Cities, Goverment Districts
Assets and Programs
WiFi, Towers, State and Non-Profit Programs
LEGEND
Broadband Coverage
Virginia
80%
FCC
FCC Form 477
Speed Filter
↓100 mbps / ↑20 mbps
Technology Filter
All Technologies
Boundaries
Counties and Incorporated Cities
Export Map to Image

2023 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 25/3 or below in Project Area [4]
Residential	1,952	1,933	19	257
Businesses (non-home based)	55	55	0	0
Businesses (home-based)	0	0	0	0
Community Anchors	13	13	0	0
Non-residential	0	0	0	0
Total	2,020	2,001	19	257

***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 25 mbps download and 3 mbps 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.

2023 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	312
Businesses (non-home based)	0
Businesses (home-based)	0
Community Anchors	0
Non-residential	0
Total Number of RDOF Passings	312

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

Brightspeed Note – only includes Lumen awarded (to be Brightspeed) RDOF locations; Does not include RDOF locations awarded to Co-Op Consortium – refer to the number of passings form for total locations that are non-co-applicant RDOF passings

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.

The following is a list of all Census Block Group IDs with RDOF locations included in the application:

BLOCKCE10
4110
4098
2128
3196
1010
1036
4057
4056
1074
4095
3175
1042
3033
4046
4091
1062
1055
4087
1038
1013
1092
1066
3197
3172
1080
1040
1028
1099
1096
1100
1014
1031
1072
1071
1063
1032
1033
1039
1044
1093
1065

1095
3078
3049
3052
3045
4088
3027
3030
3029
3086
4009
4076
4075
4097
4096
4100
4099
4112
4111

Attachment 6

This project will not implement wireless infrastructure, so a propagation and heat map are not applicable.

Attachment 7 – Timeline/Project Management Plan

Brightspeed's deployment plan is as follows: Upon award and execution of the grant contract, Brightspeed's network planning team will create the project narrative and related final design for the Company's network implementation teams and that will be completed within 30-60 days. Once the project narrative is released Brightspeed's detailed engineering will begin, which includes design engineering and any other required permits. An additional 60-90 days are required to finalize designs, work to obtain permits, and complete construction plans. Thereafter Brightspeed will begin project construction using its own line extension contracts or open the construction to a competitive bid. As construction takes place it is our intent to market and launch portions of the project as they are completed, and to have construction completed in all project areas within twenty-four months of executing the Grant Agreement. We expect this project to take longer than the suggested 18-months given the rural nature, challenging rock terrain, and extensiveness of the project with over 100 miles planned. Below is the estimated quarterly project timeline.

Project Milestones and Timeline

Project Objectives and Activities	Year 1 (2022)		Year 1/Year 2 (2023)				Year 2 (2024)			
	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4	Qtr. 1	Qtr. 2	Qtr. 3	Qtr. 4
Receive Award		X								
Complete Construction Drawings (Final Design)		X	X							
Create Bill of Materials			X							
Order Materials			X							
Submit Permits and Make Ready			X	X						
Receive Materials				X	X	X				
Distribution Fiber (approx. 102 miles)				X	X	X	X	X		
Fiber splicing and Testing						X	X	X		
All Access Fiber Construction Complete								X	X	
Begin Sales Efforts							X	X	X	
Customer Installs (average 40 per week, 35 weeks)								X	X	X

VATI Applicant and Co-Applicant Agreement

This agreement is made on August 23, 2022
between **Rockbridge County Board of Supervisors** 150 South Main Street, Lexington, Virginia 24450 , and Connect Holding II LLC d/b/a Brightspeed ("Brightspeed"), 1120 South Tryron Street, Suite 700, Charlotte, NC 28203.

RECITALS:

A. Whereas, the Department of Housing and Community Development (DHCD) will be implementing the 2023 Virginia Telecommunications Initiative (VATI) grant program; and
B. Whereas, the primary objective of the VATI is to provide financial assistance to supplement construction costs by private sector broadband service providers, in partnership with local units of government to extend service to areas that presently are unserved by any broadband provider; and
C. Whereas, applications must be submitted by a unit of government (Towns, Cities, Counties, EDA/IDA, Broadband/Wireless Authorities, Planning District Commissions, etc.) with a private sector provider(s) as a co-applicant; and
D. Whereas, Rockbridge County, as the Applicant, has designated Brightspeed as the co-applicant, and
E. Whereas, Rockbridge County and Brightspeed will partner for a grant application for the VATI grant program to serve areas in Rockbridge County.

NOW, therefore, the parties agree that they will uphold the following

responsibilities:

Rockbridge County :

1. Rockbridge County, through an agreement with the Central Shenandoah Planning District Commission (CSPDC) will act as fiscal agent for the project and maintain accurate records of the financial expenditures of the VATI monies, including, but not limited to financial reports, monthly funding draws; approval of Brightspeed expenditures and invoices, documentation of matching funds, distribution of funds, etc.; and
2. Through an agreement with Rockbridge County, the CSPDC will provide overall grant management of the VATI project and provide coordination and administration of the project by working as a liaison between the County, Brightspeed and DHCD.
3. Through an agreement with Rockbridge County, the CSPDC will provide assistance with GIS mapping and project performance reporting

Brightspeed:

1. Will provide the required information for the management of the VATI grant, including, but not limited to progress reports and monthly invoices; and

2. Will provide the required documents to the County for zoning and permit applications; and
3. Will design, engineer, construct and implement broadband services as designated in the VATI application by the grant deadline, and
4. Will guarantee that the standard bandwidth offerings for the projects will be a minimum 200 Mbps download and 200 Mbps upload.

This agreement will terminate when DHCD notifies the Rockbridge County that all grant requirements have been satisfied.

Witness the following authorized signatures on behalf of the parties:

8/22/22
Date

By: _____
Spencer Suter
Administrator, Rockbridge County

8/23/2022
Date

By: _____
Pamela H. Sherwood, Esq.
Senior Regulatory, Broadband Infrastructure and Compliance Counsel
Connect Holding II LLC d/b/a Brightspeed

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	$ 7,395,160	67	Pending
BRIGHTSPEED MATCH	$ 2,444,680	22	COMMITTED
COUNTY MATCH	$ 1,272,340	11	COMMITTED
	$		
	$		
	$		
	$		
TOTAL	**$ 11,112,180**	**100 %**	

1120 South Tryon St.
Suite 700
Charlotte, NC 28203
brightspeed.com

Ms. Tamarah Holmes, Ph.D.
Associate Director
Project Management Office
Virginia Department of Housing & Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Letter of Support for Rockbridge County 2022 VATI Application and Match Certification

Dear Dr. Holmes:

Connect Holding II LLC d/b/a Brightspeed is pleased to support and partner on Rockbridge County's 2022 Virginia Telecommunication Initiative ("VATI") application as a co-applicant and Internet Service Provider for the project. Brightspeed is the entity created through the acquisition of the Incumbent Local Exchange Company ("ILEC") assets of Lumen, Inc. On August 3, 2021, Apollo Global Management, Inc. and Lumen Technologies, Inc. announced a definitive agreement for Apollo to acquire the assets of Lumen's ILECs currently operating under the CenturyLink brands, among others. The new company, Connect Holding II LLC, will operate under the name, Brightspeed. After the transaction closes, which we expect will be on or about October 3, 2022, Brightspeed will take over all CenturyLink ILEC operations in Virginia (and 19 other states).

At Brightspeed, a core part of our mission is to promote digital inclusion and developing solutions that increase connectivity is something that we intend to actively pursue, both in Virginia and beyond. Brightspeed's motto is "Internet equals opportunity," which is the foundational idea on which the company is run. Virginia has a need to provide broadband to underserved areas to stimulate educational and entrepreneurial growth, as well as improve local workforce opportunities. Brightspeed will utilize its extensive broadband background and partnership with Virginia Counties like Rockbridge to bring maximum broadband coverage allowing homes and businesses within the community to compete globally, pursue educational opportunities, and provide access to healthcare.

In line with the Governor's universal broadband initiative in the Commonwealth of Virginia, Rockbridge County proposes to partner with Brightspeed to develop and implement last mile fiber to approximately 2,332 homes and businesses in the unserved areas of the County. This project will provide critical broadband services that will enhance the quality of life and help stimulate the economy in this rural region.

Furthermore, this letter confirms that if VATI funding requested in this application is awarded, Brightspeed is committing to make investments (matching funds) up to $2,495,000 depending on the match provided through the engineering, design and construction of the Brightspeed construction portion of certain project areas. These matching funds have been allocated in Brightspeed's current budget and any unspent funds will be carried forward into future fiscal years as necessary. Our matching funds represent 22% of the total project cost.

Activities that will be paid for with these funds include equipment purchases, contractual services, outside plant materials, and fiber construction, among other things.

Please be assured of Brightspeed's complete support of this application and of our appreciation for your consideration.

Sincerely,

Pamela H. Sherwood, Esq.
Senior Regulatory, Broadband Infrastructure and
Compliance Counsel
Pamela.Sherwood@Brightspeed.com
(704)314-2249 Office

www.co.rockbridge.va.us

SPENCER H. SUTER
County Administrator
Office: (540) 463-1460
Fax: (540) 463-4346
ssuter@rockbridgecountyva.gov

County of Rockbridge

Office of the County Administrator

150 South Main Street

Lexington, Virginia 24450

August 23, 2022

Dr. Tamarah Holmes, Ph.D.
Virginia Department of Housing
& Community Development
600 E. Main Street, Suite 300
Richmond, VA 23210

Re: Letter of Commitment for Rockbridge County 2023 VATI Application - Brightspeed

Dear Dr. Holmes:

On behalf of the Rockbridge County Board of Supervisors, I am happy to submit a 2023 Virginia Telecommunication Initiative ("VATI") application to achieve universal broadband coverage in Rockbridge County. This is one of two applications being submitted by the County with our partners, BARC and Brighspeed.

In line with the Governor's universal broadband initiative in the Commonwealth of Virginia, Rockbridge County proposes to partner with Brightspeed to develop and implement last mile fiber to approximately 2,332 homes and businesses in the unserved areas of the County. This project will provide critical broadband services that will enhance the quality of life and help stimulate the economy in this rural region.

Let this letter confirm that the Rockbridge County Board of Supervisors has approved $1,272,340 in local American Rescue Program Funds to match the VATI funds in this application.

Furthermore, if VATI funding requested in this application is awarded, co-applicants Brightspeed is committing to make investments representing no less than 22% of the total cost of this project.

Please be assured of Rockbridge County's complete support of this application and our appreciation for your consideration of this request. We appreciate your consideration of this effort, which is critical for so many of our residents.

Sincerely,

Spencer H. Suter

Spencer Suter
Rockbridge County Administrator

Attachment 11

This project has no prior expended match and this form is not applicable.

Attachment 12

The Derivaton of Cost (Project Budget) is FOIA exempt, and will be sent to DHCD directly.

1120 South Tryon St.
Suite 700
Charlotte, NC 28203
brightspeed.com

August 25, 2022

Ms. Tamarah Holmes, Ph.D.
Associate Director
Project Management Office
Virginia Department of Housing & Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Freedom of Information Act ("FOIA") Exemption Request

Dear Dr. Holmes:

Connect Holding II LLC d/b/a Brightspeed is planning to support and partner on Rockbridge County's 2022 Virginia Telecommunication Initiative ("VATI") application as a co-applicant and Internet Service Provider for the project. Brightspeed is the entity created through the acquisition of the Incumbent Local Exchange Company ("ILEC") assets of Lumen, Inc. On August 3, 2021, Apollo Global Management, Inc. and Lumen Technologies, Inc. announced a definitive agreement for Apollo to acquire the assets of Lumen's ILECs currently operating under the CenturyLink brands, among others. The new company, Connect Holding II LLC, will operate under the name, Brightspeed. After the transaction closes, which we expect will be on or about October 3, 2022, Brightspeed will take over all CenturyLink ILEC operations in Virginia (and 19 other states).

Prior to submitting financial information with the VATI application, Brightspeed submits this FOIA Exemption Request to the Virginia Department of Housing & Community Development ("DHCD") pursuant to Section 2.2-3705.6-32 of the Code of Virginia ("Va. Code"). That VA Code section provides that DHCD has the legal authority to exempt from the mandatory disclosure provisions of the Virginia Freedom of Information Act the following types of information contained in a public record:

> Information related to a grant application, or accompanying a grant application, submitted to the Department of Housing and Community Development that would (i) reveal (a) trade secrets, (b) financial information of a grant applicant that is not a public body, including balance sheets and financial statements, that are not generally available to the public through regulatory disclosure or otherwise, or (c) research-related information produced or collected by the applicant in the conduct of or as a result of study or research on medical, rehabilitative, scientific, technical, technological, or scholarly issues, when such information has not been publicly released, published, copyrighted, or patented, and (ii) be harmful to the competitive position of the applicant.

To ensure this type of information is exempted from a FOIA request, and protected from disclosure, VATI requires applicants seeking a FOIA exemption to make a written request to the Department:

1. Invoking such exclusion upon submission of the data or other materials for which protection from disclosure is sought;
2. Identifying with specificity the data, information, or other materials for which protection is sought; and
3. Stating the reasons why protection is necessary.

Brightspeed will submit the confidential version of financial information pursuant to its request for exemption. Those portions of documents marked confidential contain the confidential financial data, assumptions about costs underlying various build plans, and information about anticipated partners where confidential negotiations are on-going. This type of information, if disclosed, would be harmful to Brightspeed's competitive position and its business interests. This information is not otherwise publicly available.

Brightspeed requests that the information marked confidential be granted an exemption from FOIA obligations and treated as confidential in accordance with the VATI guidelines.

Sincerely,

Pamela H. Sherwood, Esq.
Senior Regulatory, Broadband Infrastructure and
Compliance Counsel
Pamela.Sherwood@Brightspeed.com
(704)314-2249 Office

Glenn Youngkin
Governor

Caren Merrick
Secretary of
Commerce and Trade

COMMONWEALTH of VIRGINIA

DEPARTMENT OF
HOUSING AND COMMUNITY DEVELOPMENT

Bryan W. Horn
Director

August 25, 2022

Pamela H. Sherwood, Esq.
Senior Regulatory, Broadband Infrastructure and Compliance Counsel
Brightspeed
1120 South Tryon St.
Suite 700
Charlotte NC 28203

Ms. Sherwood:

This letter is in response to your August 25, 2022 request for Freedom of Information (FOIA) exemption for information provided in regards to Rockbridge County's FY23 Virginia Telecommunication Initiative applications in partnership with Brightspeed. Pursuant to 2.2-3705.6-32 of the Code of Virginia, the Department of Housing and Community Development (DHCD) must make a written determination within ten (10) days of the request as to whether a FOIA exemption will be afforded as well the nature and scope of the protection. Upon receipt of the written determination from DHCD, documents must be submitted to vati@dhcd.virginia.gov and signified as exempted materials in the file name of each document(s). All exempted information will be securely maintained and accessed by Office of Broadband staff only. After careful review, DHCD has determined the following:

- The request for an exemption pursuant to § 2.2-3705.6-32 of the Code of Virginia for the "confidential financial data, assumptions about costs underlying various build plans, and information about anticipated partners where confidential negotiations are on-going." as defined in Brightspeed's request of August 25, 2022 is granted. The Exempt Materials have been deemed to include trade secrets and financial information, the release of which would be harmful to the competitive position of Brightspeed and its affiliates.

Please contact vati@dhcd.virginia.gov if you have any questions regarding the determination of your FOIA exemption request. Thank you again for your interest in the VATI program.

Sincerely,

Tamarah Holmes, Ph.D.
Director, Office of Broadband

Attachment 13

The Documentation of Supporting Costs is FOIA exempt, and will be sent to DHCD directly.

1120 South Tryon St.
Suite 700
Charlotte, NC 28203
brightspeed.com

August 25, 2022

Ms. Tamarah Holmes, Ph.D.
Associate Director
Project Management Office
Virginia Department of Housing & Community Development
600 East Main Street, Suite 300
Richmond, Virginia 23219

RE: Freedom of Information Act ("FOIA") Exemption Request

Dear Dr. Holmes:

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> Information related to a grant application, or accompanying a grant application, submitted to the Department of Housing and Community Development that would (i) reveal (a) trade secrets, (b) financial information of a grant applicant that is not a public body, including balance sheets and financial statements, that are not generally available to the public through regulatory disclosure or otherwise, or (c) research-related information produced or collected by the applicant in the conduct of or as a result of study or research on medical, rehabilitative, scientific, technical, technological, or scholarly issues, when such information has not been publicly released, published, copyrighted, or patented, and (ii) be harmful to the competitive position of the applicant.

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1. Invoking such exclusion upon submission of the data or other materials for which protection from disclosure is sought;
2. Identifying with specificity the data, information, or other materials for which protection is sought; and
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Brightspeed will submit the confidential version of financial information pursuant to its request for exemption. Those portions of documents marked confidential contain the confidential financial data, assumptions about costs underlying various build plans, and information about anticipated partners where confidential negotiations are on-going. This type of information, if disclosed, would be harmful to Brightspeed's competitive position and its business interests. This information is not otherwise publicly available.

Brightspeed requests that the information marked confidential be granted an exemption from FOIA obligations and treated as confidential in accordance with the VATI guidelines.

Sincerely,

Pamela H. Sherwood, Esq.
Senior Regulatory, Broadband Infrastructure and
Compliance Counsel
Pamela.Sherwood@Brightspeed.com
(704)314-2249 Office

Glenn Youngkin
Governor

Caren Merrick
Secretary of
Commerce and Trade

COMMONWEALTH of VIRGINIA

DEPARTMENT OF
HOUSING AND COMMUNITY DEVELOPMENT

Bryan W. Horn
Director

August 25, 2022

Pamela H. Sherwood, Esq.
Senior Regulatory, Broadband Infrastructure and Compliance Counsel
Brightspeed
1120 South Tryon St.
Suite 700
Charlotte NC 28203

Ms. Sherwood:

This letter is in response to your August 25, 2022 request for Freedom of Information (FOIA) exemption for information provided in regards to Rockbridge County's FY23 Virginia Telecommunication Initiative applications in partnership with Brightspeed. Pursuant to 2.2-3705.6-32 of the Code of Virginia, the Department of Housing and Community Development (DHCD) must make a written determination within ten (10) days of the request as to whether a FOIA exemption will be afforded as well the nature and scope of the protection. Upon receipt of the written determination from DHCD, documents must be submitted to vati@dhcd.virginia.gov and signified as exempted materials in the file name of each document(s). All exempted information will be securely maintained and accessed by Office of Broadband staff only. After careful review, DHCD has determined the following:

- The request for an exemption pursuant to § 2.2-3705.6-32 of the Code of Virginia for the "confidential financial data, assumptions about costs underlying various build plans, and information about anticipated partners where confidential negotiations are on-going." as defined in Brightspeed's request of August 25, 2022 is granted. The Exempt Materials have been deemed to include trade secrets and financial information, the release of which would be harmful to the competitive position of Brightspeed and its affiliates.

Please contact vati@dhcd.virginia.gov if you have any questions regarding the determination of your FOIA exemption request. Thank you again for your interest in the VATI program.

Sincerely,

Tamarah Holmes, Ph.D.
Director, Office of Broadband

www.rockbridgecountyva.gov

Brandy Flint
Director of Economic Development
Office: (540) 463-1473
Fax: (540) 463-5981
bflint@rockbridgecountyva.gov

County of Rockbridge

Office of Economic Development

150 South Main Street

Lexington, Virginia 24450

August 24, 2022

Dr. Tamarah Holmes, Ph.D.
Office of Broadband
Virginia Department of Housing & Community Development
600 E. Main Street, Suite 300
Richmond, VA 23210

RE: Rockbridge County 2023 VATI Application

Dear Dr. Holmes,

The Rockbridge County Economic Development Authority fully supports Rockbridge County's 2022 VATI application to provide universal broadband to the many unserved homes and businesses throughout Rockbridge County.

Economic growth and advancement within Rockbridge County cannot exist without the continued development of reliable, universal internet access throughout the County. Homebased businesses depend on broadband services to perform their job duties and to reach their customers. Students rely on broadband for their education. Improving economic and social conditions within our rural locality relies on the "last-mile" installation of broadband.

The Rockbridge County Economic Development Authority strongly supports this application that will improve our citizens' and businesses' overall health, wealth, and well-being. Implementing universal broadband in Rockbridge will move the needle forward in our economic growth and prosperity.

Sincerely,

Janie Harris

Janie Harris
Vice-Chairman, Rockbridge County EDA

Phillip Thompson, Ed.D.
Division Superintendent

Timothy J. Martino, M.Ed.
Assistant Superintendent

August 17, 2022

Dr. Tamarah Holmes, Ph.D.
Office of Broadband
VA Department of Housing
and Community Development
600 E. Main Street, Suite 300
Richmond, VA 23210

RE: Rockbridge County 2022 VATI Application

Dear Dr. Holmes,

Without reservation, please accept this letter as endorsement of Rockbridge County's VATI application to increase internet availability to currently unserved homes throughout Rockbridge County.

Online access for students, teachers, and parents has never been more critical for Rockbridge County. As the pandemic introduces wider-scale distance learning for students and work-from- home for teachers, our rural, dispersed population in Rockbridge County continues to struggle with spotty and unreliable internet coverage, especially in far reaches of the county. The universal broadband plan outlined in the County's 2023 applications with BARC Connects and BrightSpeed would have a tremendous positive impact in our ability to educate children in the Rockbridge County Public School System.

Please be assured of Rockbridge County Public School's complete support of this application, and, on behalf of the students, teachers, and parents, of our appreciation for your consideration.

Sincerely,

Phillip Thompson

Phillip Thompson, Ed.D.
Division Superintendent

CHAMBER OF COMMERCE
Serving Lexington, Buena Vista, and Rockbridge County

August 17, 2022

Dr. Tamarah Holmes, Ph.D.
Office of Broadband
Virginia Department of Housing and Community Development
600 E. Main Street, Suite 300
Richmond, VA 23210

RE: Rockbridge County 2023 VATI Application

Dear Dr. Holmes,

On behalf of our Board of Directors, I am writing in support of Rockbridge County's 2023 VATI application to provide universal broadband to the many unserved homes and businesses throughout Rockbridge County.

Business growth in the region depends on reliable, universal internet access, which is not yet widely available throughout Rockbridge County. Many businesses in the County are home-based businesses, located in 'last-mile' zones that are targeted for coverage in this application. Broadband is essential to strengthening our small businesses, diversifying our economy, and creating and retaining jobs in Rockbridge, Lexington, and the Buena Vista region.

The Chamber of Commerce Serving Lexington, Buena Vista and Rockbridge County is happy to endorse this application in the hope that its implementation will bolster business growth and community and economic development in Rockbridge County.

Sincerely,

Tracy E. Lyons

Tracy E. Lyons
Executive Director

18 E. Nelson Street, Suite 101 · Lexington, VA 24450
(540) 463-5375 · info@lexrockchamber.com · lexrockchamber.com

FARM BUREAU VIRGINIA®

ROCKBRIDGE COUNTY FARM BUREAU

2050 North Lee Highway • Lexington, Virginia 24450 • (540) 463-3603 or (804) 463-3593 • Fax (540) 463-5509

August 22, 2022

Dr. Tamarah Holmes, Ph.D.
Office of Broadband
Virginia Department of Housing&Community Development
600 E. Main Street, Suite 300
Richmond, VA 23210

RE: Support of Rockbridge County 2023 VATI Applications

Dear Dr. Holmes,

The Rockbridge County Farm Bureau fully supports Rockbridge County's 2023 VATI applications to provide universal broadband to the many unserved homes, farms and other businesses throughout Rockbridge County.

In a rapidly changing business environment, farmers and their families rely on a fast, consistent broadband connection, which is not yet available to many of our members. Farming is a cornerstone of Rockbridge County's economy, providing an economic engine while also feeding families both within and outside our borders and providing employment opportunities at home.

Via our meetings and frequent communications, we will gladly commit to actively market and promote broadband opportunities to our membership and all in the Rockbridge farming community, upon award of these greatly needed funds to expand services. We thank you in advance for your consideration of our needs in Rockbridge County.

Sincerely,

Mack R. Smith

Mack Smith – President
Rockbridge County Farm Bureau

Form 477 Filing Summary

FRN:	Data as of:	Operations:	Submission Status:	Last Updated:
0018626853	Dec 31, 2021	ILEC	Original - Submitted	Feb 28, 2022 01:16 PM

Filer Identification

Section	Field	Response
Filer Information	Company Name	CenturyLink, Inc.
	Holding Company Name	Lumen Technologies, Inc.
	Filing Type	ILEC
	SAC ID	160138,170209,190254,190567,210341,220356,230470,230471,230485,240506,250298,259788,259789,270434,280458,290552,290557,290567,290574,300630,30
	499 ID	801408,802182,802263,802890,803583,803998,804156,804159,804165,804168,804171,804180,804186,804192,804195,804201,804204,804207,804210,804213,80
Data Contact Information	Data Contact Name	Lynn Guzman
	Data Contact Phone Number	(720) 567-8542
	Data Contact E-mail	lynn.guzman@lumen.com
Emergency Operations Contact Information	Emergency Operations Name	Jacob Barlow
	Emergency Operations Phone Number	(303) 707-7004
	Emergency Operations E-mail	jacob.barlow@lumen.com
Certifying Official Contact Information	Certifying Official Name	Stacy Hartman
	Certifying Official Phone Number	(720) 578-3421
	Certifying Official E-mail	stacy.hartman@lumen.com

Fixed Broadband Subscription

Fixed Broadband Subscriptions by State, Technology and End User Type

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business/Govt.	Total
Virginia	Asymmetric xDSL	6,216	84,142	6,510	90,652
	Optical Carrier/Fiber to the End User	193	980	74	1,054
	Other Copper Wireline	133	0	199	199

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
Virginia	110,030	77,502	0	0

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

State	Total	by Bundle		by Product Type			
				Consumer		Business/Govt.	
		Sold w/ Internet	Sold w/o Internet	& No PIC	& PIC	& No PIC	& PIC
Virginia	110,030	51,081	58,949	12,654	64,848	12,221	20,307

OMB 3060-0816

Form 477 Filing Summary

FRN:	Data as of:	Operations:	Submission Status:	Last Updated:
0018626853	Jun 30, 2021	ILEC	Original - Submitted	Aug 30, 2021 02:06 PM

Filer Identification

Section	Field	Response
Filer Information	Company Name	CenturyLink, Inc.
	Holding Company Name	CenturyLink, Inc.
	Filing Type	ILEC
	SAC ID	160138,170209,190254,190567,210341,220356,230470,230471,230485,240506,250296,259788,259789,270434,280458,290552,290557,290567,290574,300630,300661,310671,310689,310702,310705,320747,320801,320832,330841,330857,330877,330884,330895,330898,330913,330
	499 ID	801408,802182,802263,802890,803583,803998,804156,804159,804165,804168,804171,804180,804186,804192,804195,804201,804204,804207,804210,804213,804216,804219,804222,804225,804228,804231,804234,804237,804246,804249,804255,804256,805564,805557,805725,806
Data Contact Information	Data Contact Name	Lynn Guzman
	Data Contact Phone Number	(720) 567-8542
	Data Contact E-mail	Lynn.Guzman@centurylink.com
Emergency Operations Contact Information	Emergency Operations Name	Jacob Barlow
	Emergency Operations Phone Number	(303) 707-7004
	Emergency Operations E-mail	Jacob.Barlow@centurylink.com
Certifying Official Contact Information	Certifying Official Name	Stacy Hartman
	Certifying Official Phone Number	(720) 578-3421
	Certifying Official E-mail	Stacy.Hartman@centurylink.com

Fixed Broadband Subscription

Fixed Broadband Subscriptions by State, Technology and End User Type

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business/Govt.	Total
Virginia	Asymmetric xDSL	5,292	87,423	6,903	94,326
	Optical Carrier/Fiber to the End User	193	806	36	842
	Other Copper Wireline	162	0	222	222

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
Virginia	117,677	82,806	900	0

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

State	Total	by Bundle		by Product Type			
				Consumer		Business/Govt.	
		Sold w/ Internet	Sold w/o Internet	& No PIC	& PIC	& No PIC	& PIC
Virginia	117,677	60,783	56,894	14,171	68,635	12,170	22,701

Fixed Voice Subscription (VGE Lines)

VGE Lines Provided to Unaffiliated Providers by State

State	Wholesale	UNE-L
Virginia	3,664	754

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
Virginia	117,677	117,677	0	0	392	0	0	117,285

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/Govt.	Sold w/ Internet	Sold w/o Internet	FTTP	Coax	Fixed Wireless	Copper
Virginia	900	0	900	900	0	0	0	0	900

Attachment 17

This project will not implement wireless infrastructure, so shapefiles indicating RSSI projections are not applicable.

Calix

White Paper

Drive Down Costs and Accelerate Service Innovation with Next Generation PON

EXECUTIVE SUMMARY

To meet the surging consumer demand for bandwidth-heavy data services, two new next-generation passive optical network (PON) technologies have been standardized and are now being deployed by broadband service providers (BSPs): XGS-PON and NG-PON2.

Like previous PON technologies, both transmit data through fiber-optic cables, offering very high-capacity connections to multiple subscribers. However, because they are intentionally designed to use different wavelengths than GPON, XGS-PON and NG-PON2 can co-exist on the same fiber, allowing for the re-use of many portions of the optical distribution network (ODN).

XGS-PON, which was officially standardized by the ITU in 2016 (ITU G.9807.1), can deliver up to 10 Gbps of symmetrical bandwidth. NG-PON2 (ITU-T G.989), standardized a year earlier, utilizes multiple wavelengths, and can deliver 40 Gbps—with 80 Gbps possible in the future—on a single fiber. The move to even higher-speed PONs is already underway, notably via 25G/50G-EPON (IEEE 802.3ca) and 50G-PON, the former being officially standardized in 2020.

MEET THE 10G PONS

According to the latest market forecasts[1], by 2023, nearly two-thirds of the global population (around 5.3 billion people) will have internet access, up from 3.9 billion (51 percent) in 2018. Meanwhile, the number of connected devices is expected to be more than three times the global population by 2023. This means there will be 29.3 billion networked devices by 2023—or 3.6 devices for every person on the planet, up from 2.4 devices per person in 2018. Globally, the consumer segment's share of total devices and connections will be 74 percent, with the business segment claiming the remaining 26 percent.

These new subscribers and devices are coming online as data traffic is surging. Video viewing is the main driver, accounting today for about 80 percent of all global internet traffic. These trends have been further accelerated by the impact of the COVID-19 pandemic, fueled by millions of people relying on bandwidth-consuming applications while working and schooling from home and accessing latency-sensitive online entertainment such as streaming and gaming. Zoom, a leading video conferencing platform, reported an astounding 535% rise in daily traffic in 2020. Work from anywhere and advanced home entertainment will continue to drive utilization as the world settles into the new normal–these social changes are not expected to decline. Network reliability, bandwidth capacity, and security have come under pressure as a result.

In response, BSPs are deploying next-generation PON networks to make the move from single gigabit to 10G services. Developed as successors to GPON—which for most of the past decade enabled BSPs to offer 2.5 Gbps downstream and 1.25 Gbps upstream—the two next-generation PON standards being deployed today are XGS-PON (ITU G.9807.1) and NG-PON2 (ITU-T G.989).

Like previous PON technologies, both transmit data through fiber-optic cables, offering very high-capacity connections to multiple subscribers. However, as they are intentionally designed to use different wavelengths other than GPON, XGS-PON and NG-PON2 can co-exist on the same fiber, allowing for the re-use of many portions of the ODN.

As the consumer appetite for bandwidth continues to rise, the ability to deliver 10 Gbps speeds to both businesses and households will be critical for fiber-based BSPs to deliver the subscriber experience and next-generation services required to compete—and win—in an increasingly crowded marketplace.

A CATALYST FOR TRANSFORMATION

By deploying XGS-PON or NG-PON2, BSPs now have technology options that provide more than just significantly enhanced speeds. Both technologies offer extensive improvements over previous generations of PON that make them ideal for delivering new, advanced services to multi-dwelling units (MDUs), supporting mission-critical business applications, and readying for the widespread adoption of 5G mobile technologies.

Their most valuable application, however, is as a catalyst for access network transformation. More than 225 BSPs are deploying 10G-PON from Calix today, including both XGS-PON and NG-PON2. The key technical difference between the two technologies is the fixed wavelength supported on XGS-PON versus the multiple wavelengths supported on NG-PON2. There are also costs, hardware development and availability, and speed-to-market considerations when choosing between the two.

An overview of the two standards is shown in Table 1.

Standard	Nomenclature	Bandwidth Options	Wavelengths	Primary Focus
XGS-PON (ITU G.9807.1)	10G GPON	10G Down 10G Up	1577nm Down 1270nm Up	Residential/ Business/MDU
NG-PON2 (ITU G.989)	NG-PON2	4 to 8 X 10G TDM Down 4 to 8 X 2.5G or 10G TDM up 8 P2P Up and Down @100GHz	1596-1603nm 1532-1539nm 1610-1625nm	Residential/ Business/ MDU 5G Transport

Table 1: Next-generation ITU PON standards, comparing NG-PON2 with XGS-PON

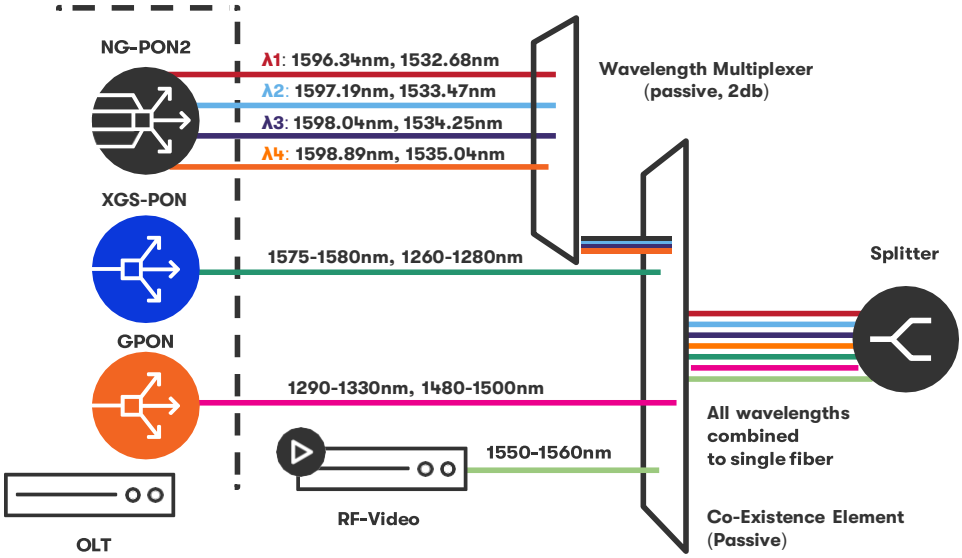
XGS-PON: THE PATH OF LEAST RESISTANCE TO 10G

XGS-PON (X=10, G=Gigabit, S=symmetrical) is the most recent standard and is similar to previous-generation GPON technology, except that it can deliver up to 10 Gbps of symmetrical bandwidth. It is therefore considered a simplified version of NG-PON2, because the technology uses a fixed wavelength. This means that it cannot harness multiple wavelengths in a single fiber to deliver more than 10 Gbps like NG-PON2 but provides more than enough bandwidth for the average needs of BSPs today and into the future.

WHY CHOOSE XGS-PON OVER OTHER PON TECHNOLOGIES:

- **XGS-PON simplifies deployment and upgrades**, you'll save time and money, and your subscribers get their new services in days, not weeks.
- Because XGS-PON uses wavelengths outside of the spectrum allocated to NG-PON2 or GPON, the three technologies can co-exist on the same fiber. This positions BSPs to deploy XGS-PON in a shortened timeframe, helping them to **immediately capture the benefits of offering a 10 Gbps service**. But it will not inhibit them from future network enhancements.

Figure 1: GPON Co-existence with NG-PON2 and XGS-PON



- NG-PON2 can be introduced later, without requiring a major upgrade to the network and without disrupting existing XGS-PON or GPON services. Alternatively, NG-PON2 can be introduced wavelength by wavelength, allowing for **a gradual investment strategy that can be set according to customer demand.**

With the ability to deliver 10 Gbps to an individual subscriber, new business opportunities are now possible, including:

- **MDUs and mission-critical business services:** Many existing structures lack in-building fiber optic cabling. When it is not possible to run fiber to each individual unit, existing "last mile" technologies—such as G.fast over copper—or newer Wi-Fi technologies are used to deliver connectivity. With the continued growth in MDU populations, and as the capacity of Wi-Fi continues to increase, it becomes increasingly important to have a technology like XGS-PON to deliver 10 Gbps to the building demarcation point. With NG-PON2 and the use of channel bonding, you can go even further with throughput increased to 40 Gbps and 80 Gbps in the future.
- **Marketing competition, and brand perception:** Let's be real, the average user does not need a 10 Gbps connection. But we live in a bigger is better society, so you must take that brand perception into account as you design your network and service offerings. Your network design impacts your marketing messaging and competitive advantage. Not to mention that you do not want to build an access network that will no longer be suitable in less than 10 years. Planning today for the bandwidth consumptions of tomorrow is smart business.

NG-PON2: COMBINING THE POWER OF FOUR WAVELENGTHS

The first of the two next-generation PONs to have approved standards, NG-PON2, allows for the convergence of multiple services networks onto a single ODN, resulting in a significant reduction in the total cost of ownership (TCO), while enabling the introduction of new, efficient architectures that are highly tuned to meet emerging subscriber demands.

Previous generation GPON transmits data using a single wavelength on each fiber. By contrast, NG-PON2 utilizes time and wavelength division multiplexing (TWDM) and supports a minimum of four wavelengths on each fiber, making it the industry's first multi-wavelength access standard. Each wavelength within a single fiber can deliver 10 Gbps symmetrical speed (upstream and downstream). When four wavelengths are combined, throughput can reach 40 Gbps and, in the future, it will be possible to combine eight wavelengths to deliver 80 Gbps. For this reason, NG-PON2 is often referred to as 40G (or 80G) PON.

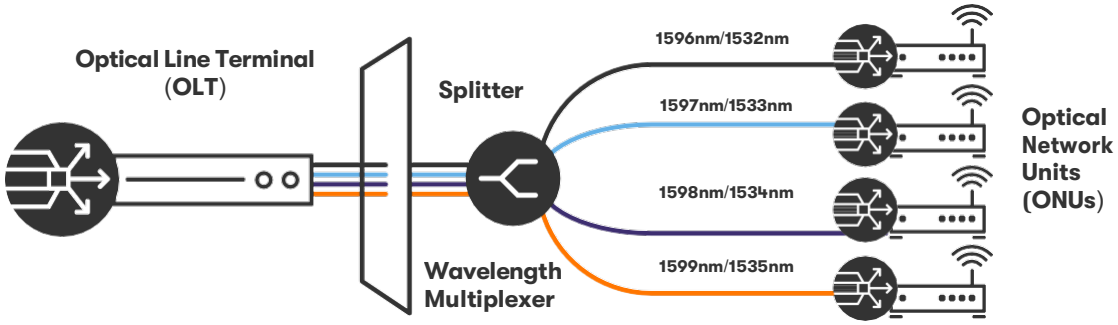


Figure 2: Multi-Wavelength NG-PON2 OLT, connected to ONUs with tunable lasers and receivers

As the industry continues its rapid migration to 5G cellular technology, wireless data rates may reach as high as 10 Gbps. To backhaul traffic from the mobile base station, connections exceeding 10 Gbps will be required. With NG- PON2, as the demand for bandwidth to a mobile base station increases, adding capacity is simply a matter of utilizing another wavelength over the existing fiber to the tower.

In addition to increased capacity, NG-PON2 has three advantages over other PON technologies:

- On-demand capacity management enables new service delivery opportunities and load balancing improvements. Provide operational protection by moving customers to another wavelength while fixing/resetting a card.
- Multiple wavelengths can be used to manage PON capacity. As utilization grows, PON capacity can be easily redistributed, with new channels turned on and ONUs switched over to different wavelengths without impacting the delivery of existing services.
- Support of eight point-to-point overlay wavelengths that can be used for dedicated services such as enterprise businesses, fronthaul, etc.

These changes can be done instantly, shifting and allocating capacity on-demand, enabling new time-of-day services, and maintaining load balancing. Physical resources within the access network will be able to meet the dynamic needs of subscribers, without human intervention.

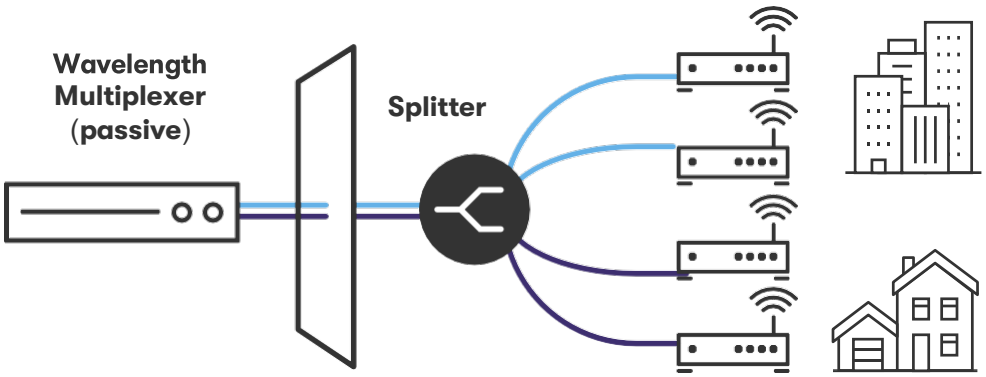


Figure 3: On-demand capacity management allows wavelengths to be redistributed, without impacting existing services

When migrating from GPON to NG-PON2, two primary investments need to be made:

- New ONUs with tunable lasers (that can be programmed to different channels or wavelengths), filters, and receivers are required to support compliant wavelength plans. Some existing ONUs are already equipped with tunable lasers, as well as filters that allow for the co-existence of GPON and NG-PON2.
- New OLT line cards are required to support compliant wavelength plans (as with the ONUs). In some cases, new OLTs are also required to ensure non-blocking support of NG-PON2 and to enable the desired density in the central office (CO).

WHAT'S NEXT FOR PON

The standards bodies IEEE and ITU are always substantially in front of the actual market need. The IEEE, which focuses on Ethernet-based PON standards mostly used in Asian service providersand by cable operators, released the 25G / 50G EPON standards in 2020. The ITU, which focuses on the traditional time division multiplexed (TDM) PON like GPON, is expected to complete its 50G PON standard in 2021. Both standards bodies are already looking at 100G PON and beyond. Whilethere is some identified need for PON beyond 10G, mostly in the areas of business services and mobile backhaul and fronthaul, the need for bandwidth greater than 10G is not likely to drive volume deployments for several years. Even with the need being limited there is still quite a bit of noise in theindustry around these higher bandwidth PONs. This noise is mostly around a version of 25G PON that is not an actual standard. This 25G PON utilizes a combination of capabilities between the IEEE and ITU to enable the deployment of 25G PON that co-exists with GPON and XGS-PON networks. The benefit claimed by the 25G PON MSA (multi-source agreement), an agreement between multiplevendors, is to enable service providers to deploy true 10G services over PON. While this can be a benefit for business services and some 5G backhaul applications, it is important to note that non- standard technologies have the challenge of gaining market momentum over time. There is a risk thatwhile it is deployable today, it may not be technically or commercially viable over the long term.

Calix

White Paper

DRIVING ACCESS NETWORK TRANSFORMATION

10G-PON is gaining momentum around the world. More than 225 BSPs around the world are building Calix-powered fiber access networks with XGS-PON and NG-PON2 technology to deliver high-speed 10G services to both residences and businesses. With this infrastructure, BSPs can easily support high-bandwidth applications such as HD and 4K content streaming, video surveillance services, and cloud-enabled interactive gaming. The Calix Intelligent Access EDGE systems, powered by the Network Innovation Platform (AXOS®), supports the deployment of both XGS-PON and NG-PON2 in a single line card or GPON and XGS-PON in a single line card.

Examples include North Dakota-based BSPs MLGC[2] and ReadiTech[3], which are both upgrading to 10G PON from Calix to deploy exciting new services and ensure their networks are sufficiently future-proofed. Both are using the Calix Intelligent Access EDGE solution, built on the award-winning Calix Network Innovation Platform (AXOS) software platform. All Calix solutions support both XGS-PON and NG-PON2 via a simple change of the optical transceiver, giving BSPs the opportunity to choose the technology that is right for them at the time they are ready to deploy.

While there are varying rates of adoption between XGS-PON and NG-PON2, XGS-PON is expected to dominate the market through 2026. There are pros and cons to each. Through the use of NG-PON2 technology, and the ability to converge the services networks onto a single ODN, BSPs can significantly reduce TCO. XGS-PON technology provides substantially more bandwidth than GPON–without a forklift upgrade. This allows for the fastest deployment and lowest cost per bit per mile.

The ability to offer ultra-high-speed broadband is set to become a key differentiator for BSPs in an era that has seen bandwidth demands rise rapidly because of the increase in remote working and greater use of high-bandwidth home entertainment services. In a recent Calix survey, approximately half of the respondents said that the COVID-19 pandemic had prompted them to accelerate plans to deploy 10G PON[4]. The move to next-generation 10G-PON will therefore be a key strategy for innovative BSPs to simplify their networks and accelerate the rollout of new-generation technologies and services.

The ability to offer ultra-high-speed broadband is set to become a key differentiator for BSPs in an era that has seen bandwidth demands rise rapidly.

Learn how other Broadband Service Providers are using Calix Intelligent Access EDGE to simplify and grow their businesses:

MLGC Powers Past Competition with Ultra-Fast 10-Gigabit Fiber Network From Calix

ReadiTech Doubles Down with Calix 10G-PON Network, Bets Big for the Future

1 https://www.cisco.com/c/en/us/solutions/collateral/executive-perspectives/annual-internet-report/white-paper-c11-741490.html
2 https://www.calix.com/content/dam/calix/marketing-documents/public/case-study/cs_Intelligent-Access-EDGE_MLGC.pdf
3 https://www.calix.com/content/dam/calix/marketing-documents/public/case-study/cs_readitech.pdf
4 https://www.calix.com/blog/2020/07--july-/sometimes-the-future-shouldnt-wait.html

CORNING

Distributed Tap BPEO CT Multiport Solution

Optical distributed taps, known also as uneven-split or asymmetric terminals, are most appropriate for short length, dense environments or low dense applications where lean distribution runs are desired. Each run supports 32 or 64 subscriber ONTs with cascaded multiport terminals utilizing preconnectorized single-fiber assemblies in the distribution. The fully preconnectorized system reduces installation costs while increasing the speed of deployment.

This solution is comprised of an array of power-split ratios to customize each run for optimal signal reach. Tap splits of 90/10, 85/15, 80/20, 70/30, and 60/40 split ratios can be cascaded, or daisy-chained, to accommodate a wide variety of deployment scenarios.

The BPEO CT Multiport 10 ports terminal includes one 1x2 uneven, asymmetric splitter and one 1x8 splitter to support customer connections, as well as a pass-through port feeding subsequent terminals in the run in a single form factor.

The BPEO CT Multiport 9 ports terminal has one standard 1x8 splitter to support customer connections, designed to be used as the last terminal of the chain.

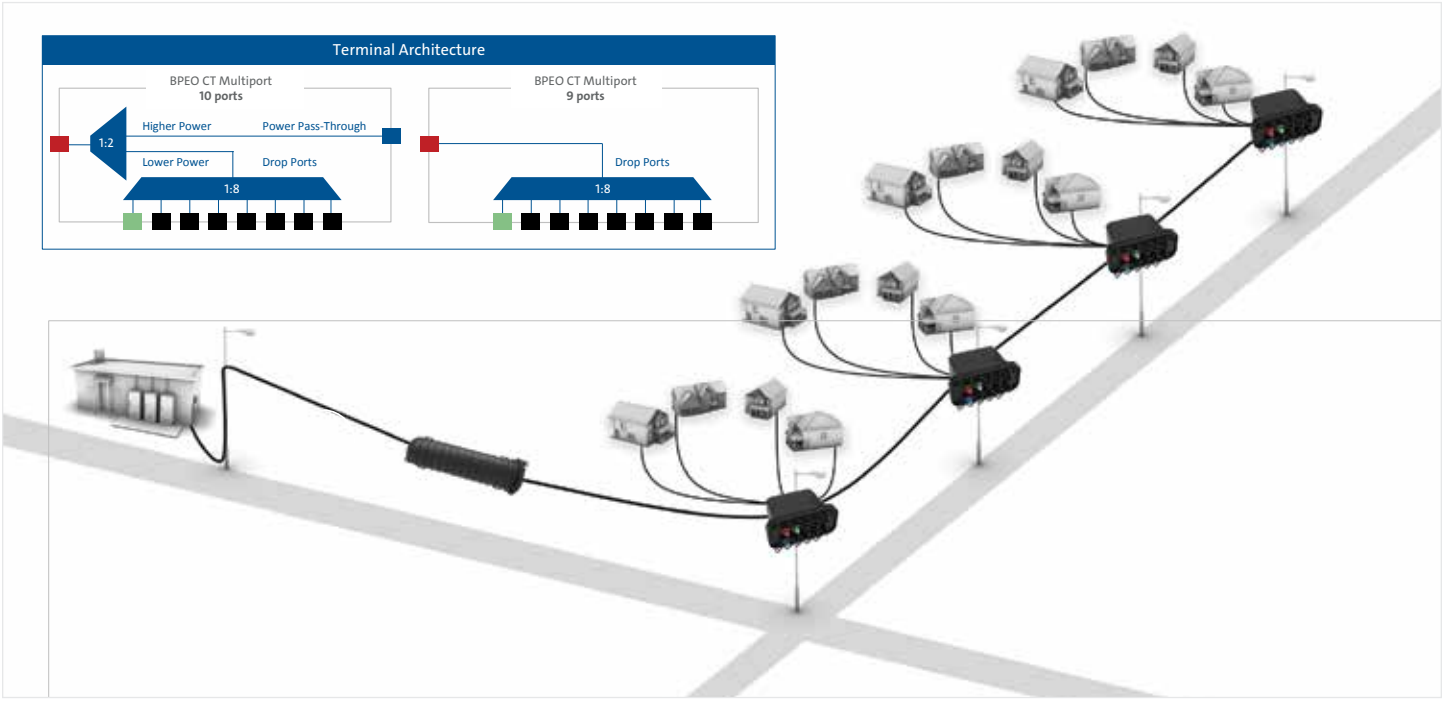
The number of terminals in an individual run and the variation of split ratios used is dependent upon the distances between terminals and subscribers to maintain an acceptable link loss budget. By limiting the number of terminal options and utilizing preconnectorized OptiTap® drop cables, FTTx designs and material inventories can be simplified.

Features	Benefits
OptiTap® Connector Ports for Drop Termination	Lower installation cost and increased speed of interconnection
Stubless Multiport Terminal System	Reduces distribution cable fiber count; allows full plug and play distribution deployment, without requiring splicing
Full Preconnectorized Single-Fiber Architecture	A cost-effective solution that diverts a portion of power to support a typical run of 32 to 64 ONTs
Factory-Installed and Tested Connectors	Connector design provides stability, reliability, and durability
Supports Various Power Split Ratios	Solutions available to accommodate numerous combinations of power split ratio designs
Rapid Repair/Restoration	Damaged single-fiber preconnectorized drops can be repaired quickly with low-skill technicians to restore subscriber services
Dual-Ended 5 mm round drop; Fig.8 compact or ROC™ Drop Assembly	5 mm round drop; Fig.8 compact or ROC™ drop assemblies terminated with OptiTap connectors on both ends provide quick and efficient connectivity between terminals

The distributed tap architecture leverages a cascaded network of uneven-split, or asymmetric split, multiport terminals to ensure sufficient signal reaches subscribers along the route. As the first terminal is closest to the signal source (OLT), a lower amount of signal is needed to feed the subscribers served from 1x8 splitter.

In many cases, the first multiport terminal will utilize a 90/10 power split where the 10% feeds the subscriber ports and the 90% passes on to feed subsequent terminals downstream. Subsequent terminals in the chain either maintain a similar uneven-split ratio or a higher ratio of local power depending upon the distances between terminals and the total link budget.

In higher density environments with short distances between terminals, operators may serve more than the standard 32 or 64 subscribers. However, in low-density runs spanning long distances, operators may serve fewer subscribers per route as this is heavily dependent upon the link budget.



Specifications

Mechanical Specifications	
Application	Aerial, duct, direct-buried
Dimensions	230 x 173 x 116 mm
Weight (without hanging bracket)	9-port Terminal: 0.6 kg 10-port Terminal: 0.7 kg
Packaging	Individual packaging
Termination	OptiTap® connector ports

10-Port BPEO CT Multiport Optical Specification				
Splitter type	Connector port	Insertion Loss, Maximum	Insertion Loss, Typical	Reflectance, Typical
90/10 + 1x8	Blue (Pass-Through Port)	0.73 dB	0.65 dB	-55 dB
	Green and black (Drop Port)	21.54 dB	19.85 dB	-55 dB
85/15 + 1x8	Blue (Pass-Through Port)	1.13 dB	1.00 dB	-55 dB
	Green and black (Drop Port)	20.78 dB	19.19 dB	-55 dB
80/20 + 1x8	Blue (Pass-Through Port)	18.40 dB	17.01 dB	-55 dB
	Green and black (Drop Port)	1.40 dB	1.10 dB	-55 dB
70/30 + 1x8	Blue (Pass-Through Port)	16.51 dB	15.42 dB	-55 dB
	Green and black (Drop Port)	2.22 dB	1.90 dB	-55 dB
60/40 + 1x8	Blue (Pass-Through Port)	15.32 dB	14.37 dB	-55 dB
	Green and black (Drop Port)	2.73 dB	2.40 dB	-55 dB

9-Port BPEO CT Multiport Optical Specification				
Splitter Type	Connector port	Insertion Loss, Maximum	Insertion Loss, Typical	Reflectance, Typical
Splitter 1x8	Green and black (Drop Port)	10.50 dB	10.13 dB	-55 dB

Environmental Characteristics	
Temperature Rating	-25°C to 75°C

Standards	
ANATEL	Category III

Ordering Information

BPEO CT Multiport Terminal 10 ports

BPEO CT Multiport Terminal 9 ports

Part Number Configurator

BPEO-CT-MP10-□□□□-□-□□

1 2 3

1 Defines tap value loss configuration

9010 = 90/10 Power Split
8515 = 85/15 Power Split
8020 = 80/20 Power Split
7030 = 70/30 Power Split
6040 = 60/40 Power Split

2 Defines mounting bracket

0 = None
P = Pole
U = Pole/strand

3 Defines country/region*

NO = México, Central América, Caribbean
SU = South América (except Brazil)
BR = Brazil
**custom configurations available (upon request)*

BPEO-CT-MP9-□-□□

1 2

1 Defines mounting bracket

0 = None
P = Pole
U = Pole/strand

2 Defines country/region*

NO = México, Central América, Caribbean
SU = South America (except Brazil)
BR = Brazil
**custom configurations available (upon request)*

Ordering Information

Description	Part Number
Pole bracket, UCAO, BPEO CT, MDT	KIT-MOUNT-UCAO-BPEO-MDT
Messenger bracket, BPEO CT	KIT-MOUNT-BPEO-CT-STRAND

LSZH™ 5 mm Round Dielectric Drop Cable Assembly, 1F Single Tube

Corning indoor/outdoor 5 mm round drop assembly is a robust and flexible cable that provides durability and reliability in terminal-to-terminal connections for distributed tap architectures. The cable is designed for short-span, self-supporting aerial installations as well as to be installed on facades, poles, and ducts in FTTH deployments. An LSZH flame retardant and UV protected jacket allows for both indoor and outdoor use.

LSZH 5 mm Round OptiTap® Jumper Assembly

LSZH 5 mm Round OptiTap Drop Assembly

Part Number Configurator

□□□□ 015 Z □□ B □□□ M- CALA

1 2 3 4 5

1 First Connector Type
00 = No connector
43 = OptiTap®
UU = Multi Interface

2 Second Connector Type
43 = OptiTap
UU = Multi Interface

3 Insertion Loss (max)
3 = 0.3 dB
5 = 0.5 dB

4 Fiber Type
1 = A1
2 = A2

5 Cable Length (meters)

005	220
030	250
050	300
070	350
080	400
100	450
120	500
150	600
200	

Figure-8 Low Friction Compact Drop Cable Assembly

As an industry leader in optical connectivity products, Corning designs and manufactures the low-friction figure-8 drop cable assembly with factory-terminated, environmentally sealed and hardened connectors to reduce the cost and time of drop cable deployment. Corning OptiTap® connector design provides superior durability and reliability in the drop segment of the network. This new assembly also offers significant improvements in cable management.

Figure-8 Low-Friction OptiTap® Jumper Assembly

Figure-8 Low-Friction OptiTap Drop Assembly

Part Number Configurator

□□□□ 01C □□□□□□□ M- CALA

1 2 3 4 5 6 7

1 First Connector Type
00 = No connector
43 = OptiTap®
UU = Multi Interface

2 Second Connector Type
43 = OptiTap
UU = Multi Interface

3 Cable Characteristics
L = Low Friction, LSZH™
F = Non-Low-Friction, Non-LSZH
Z = Low-Friction, Non-LSZH
N = Non-Low-Friction, LSZH

4 Insertion Loss (max)
3 = 0.3 dB
5 = 0.5 dB

5 Fiber Type
1 = A1
2 = A2

6 Jacket Color
B = Black
G = Gray

7 Cable Length (meters)

030	220
050	250
070	300
080	350
100	400
120	450
150	500
200	600

ROC™ Drop Cable Assembly with FastAccess® Technology, 900 µm

As an industry leader in optical connectivity products, Corning designs and manufactures the ROC™ drop cable assembly with factory-terminated, environmentally sealed and hardened connectors to reduce the cost and time of drop cable deployment. Corning OptiTap® connector design provides superior durability and reliability in the drop segment of the network. This new assembly also offers significant improvements in cable management.

OptiTap® ROC™ Drop Jumper Assembly

OptiTap ROC Drop Assembly

Part Number Configurator

□□□□ 01RN □□ B □□□ M - CALA

1 2 3 4 5

1 First Connector Type
00 = No connector
43 = OptiTap®

2 Second Connector Type
43 = OptiTap

3 Insertion Loss (max)
3 = 0.3 dB
5 = 0.5 dB

4 Fiber Type
1 = A1
2 = A2

5 Cable Length (meters)

005	220
030	250
050	300
070	350
080	400
100	450
120	500
150	600
200	

CORNING

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Brightspeed

Pass Type	Name
Business	501 Self Storage
Education	Byers Techical Institute
Quasi Govt	Old Natural Bridge High School (VT Foundation)
Business	Virginia Mountain Mortgage
Govt	Natural Bridge Station Post Office
Business	C&S Disposal
Business	Natural Bridge County Store
Business	DecChamps Building
Business	Bridgeworks
Business	EDM
Business	Natural Bridge Heating and Air
Business	R&S Storage
Business	AMS Trucking
Govt	Natural Bridge Station Recycling Center
Business	Richardson Trucking
Business	Cash's Automotive
Business	Glasgow Grocery Express
Govt	Glasgow Post Office
Business	Dollar General
Business	Fine Points Salon
Quasi Govt	Glasgow Community Building
Business	Mohawk Industries
Business	Glasgow BP
Business	Scottos Pizza
Govt	Sallings Mtn Collection Center
Govt	Buck Hill Water Tank
Business	Natural Bridge Zoo
Business	Herring Hall Bed and Breakfast
Business	Natural Bridge Speedway
Business	Enchanted Castle Studios
Business	Relax Inn - Natural Bridge
Business	Natural Bridge Shell
Business	Natural Bridge KOA
Business	Horselogical Training
Business	Great Valley Farm Brewery
Business	County Auto Care
Business	Pink Cadillac Diner
Business	Budget Inn - Fancy Hill
Business	Halcyon Days Cidery
Business	Mane Gait Equestrian Center
Business	Virginia Gold Orchard
Govt	Fancy Hill Recycling Center
Govt	Virginia State Police Headquarters

Business	THe Inn at Forest Oaks
Business	Tavern Lane Antiques
Business	Natural Bridge Exxon
Business	HA Siler Trucking
Govt	Natural Bridge State Park
Business	Painting Etc
Business	Virginia Safari Park
Business	Natural Bridge KOA
Business	Natural Bridge Country Cottages
Business	Raynal Studios
Business	T-Pees Grocery
Business	Jellysonte Campground
Business	Wilderness Canoe Company
Business	OLD NB LEARNING CENTER
Business	LB's Of Virginia Trailer Sales
Education	Buffalo Creek Boys School
Business	Modine Manufacturing
Govt	USFS Cave Mountian Lake Campground / Recreational Area
Business	Brierley Hill B&B
Business	Lime Kiln Theater
Businessq	Camden Concrete and Construction
Business	Brickwood Kennels
Business	TriCounty Auto Glass
Business	FrontLine Woodworks
Business	Castello Home