

Application to DHCD Submitted through CAMS

Carroll County

Carroll County VATI 2021

Application ID: 75708142020110452
Application Status: Pending
Program Name: Virginia Telecommunications Initiative 2021
Organization Name: Carroll County
Organization Address: 605-1 Pine Street
Hillsville, VA 24343-1463
Profile Manager Name: Crystal Adams
Profile Manager Phone: (276) 730-3001
Profile Manager Email: cadams@CarrollCountyVA.org

Project Name: Carroll County VATI 2021
Project Contact Name: R. Cellell Dalton
Project Contact Phone: (276) 730-3009
Project Contact Email: cellell.dalton@carrollcountyva.gov
Project Location: 605-1 Pine Street
Hillsville, VA 24343-1463
Project Service Area: Carroll County

Total Requested Amount: \$707,440.00

Required Annual Audit Status: No Current Audits Found

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Budget Information:

Cost/Activity Category	DHCD Request	Other Funding	Total
Telecommunications	\$707,440.00	\$305,459.00	\$1,012,899.00
Construction	\$407,300.00	\$200,459.00	\$607,759.00
Construction Related Soft Costs	\$300,140.00	\$105,000.00	\$405,140.00
Total:	\$707,440.00	\$305,459.00	\$1,012,899.00

Budget Narrative:

Questions and Responses:

1. Project Description and Need

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

Answer:

During this unprecedented times of teleworking and virtual learning, Carroll County has found itself disadvantaged compared to state counterparts. The Carroll County Public Schools surveyed parents to find approximately 42% of families have limited or no high speed internet. This equates to roughly 30% of the 3,600 students not having internet access at home. Carroll County cannot address the needs of all the residents, but most certainly can tackle a large portion through this proposed project. Dugspur and Laurel Fork are located in the North Easter/Eastern portion of Carroll County. The major route traversing Dugspur is Route 221. Route 221 provides connection to Hillsville and Floyd County. Route 58 traverses Laurel Fork and also provides connection to Hillsville and Floyd County.

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

Answer:

According to the Federal Communications Commission's (FCC) "Provider Coverage Overlap and Population Coverage" database, there is one existing provider in the proposed project area. Centurylink provides 1.5, 10, or 20Mbps service depending on the location.

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, and Community Connect. If there have been federal

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funds awarded near the project, provide a map verifying the proposed project area does not conflict with these areas. Describe if there are Rural Digital Opportunity Fund (RDOF) eligible census blocks located in the proposed project area. Label Map: Attachment 2 – Documentation on Federal Funding Area.

Answer:

According to data compiled from the Connect American Fund Broadband Map (CAF Map), there has been no previous federal funding near the project areas.

There are Rural Digital Opportunity Fund (RDOF) eligible census blocks located in the project areas, according to the Auction 904 Updated Eligible Areas map on the FCC's database.

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 of 25/3 mbps or less and with less than 10% service overlap within the project area. 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:

The project areas are unserved according to the Virginia Broadband Availability and FCC Form 477 maps and there are no overlaps to any current providers.

5. **Total Passings:** Provide the number of total serviceable units in the project area. Applicants are encouraged to prioritize areas lacking 10 Megabits per second download and 1 Megabits per second upload speeds, as they will receive priority in application scoring. For projects with more than one service area, each service area must have delineated passing information. Label Attachment: Attachment 4 – Passings Form
- a. Of the total number of passings, provide the number of residential, business, non-residential, and community anchors in the proposed project area. Describe the methodology used for these projections.
- b. Provide the number of serviceable units in the project area that have 10/1 mbps or less. Describe the methodology used for these projections.

Answer:

There are approximately 825 addresses in the proposed project area. These include 2 churches and 2 elementary schools. The highest residential speed in the area is 10/1, thus all units are at or below the 10/1 mbps.

6. **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:

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Vertical assets will entirely be owned by the private applicant (GigaBeam Networks) with the exception of The Wired Road Towers and tower owned by Apex which will be leased.

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

Answer:

The project will provide broadband services with fixed wireless technologies. The project design utilizes both unlicensed 5.8 Ghz and 3.6 Ghz CBRS spectrum to get full coverage and some nLOS performance. Speeds up to 100Mbps will be offered.

Being a fixed wireless network in a ptmp configuration, the network will be a shared bandwidth network. Fiber connectivity with the Wired Road will supply the needed bandwidth for the project with initial capacity of 1Gbps and upgradable to 10Gbps giving more than adequate bandwidth capabilities to the network.

Initial residential offerings will include:

10Mbps x 1Mbps - \$45

25Mbps x 5Mbps - \$65

50Mbps x 5Mbps - \$85

100Mbps x 10Mbps - \$99

Standard Business Pricing:

25x5 Mbps - \$89

50x5 Mbps - \$109

100x10 Mbps - \$139

Customer Business plans will also be offered to fit the needs of specific businesses.

All plans include a managed Wi-Fi router and no additional cost. All plans have no data caps.

8. Network Design: Provide a description of the network system design used to deliver broadband service from the

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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. 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 5 – Propagation Map Wireless Project.

Answer:

The project will utilize next generation fixed wireless equipment in the 3.6Ghz CBRS and 5.8Ghz bands.

The project will utilize middle mile fiber sourced from The Wired Road that is located near the project areas to provide the primary internet connection. This fiber point will provide 1 to 10Gbps bandwidth capabilities to the project and be distributed via both 11Ghz and 24Ghz microwave backhauls to each primary tower and from those tower to the smaller "microsite" locations. Backhaul capacity is approximately 1Gbps per each path.

End users will be connected in the project area utilizing traditional fixed wireless equipment using Cambium Network's epmp 3000 AP's and Force 300 radios as well as their PMP450 3ghz platform for nLOS service. These radios are capable of delivering up to 200Mbps speeds to end users in a single 40mhz channel. This design ensures every subscriber in the project area has access to up to 100Mbps service.

All hardware specification sheets from the manufacturers are attached to verify performance claims. GigaBeam Networks currently deploys both Cambium Epmp 3000 and pmp450 equipment and can verify speeds from actual users of 100Mbps and up to 200Mbps.

The project network is designed to support bandwidth demand even during peak hours. Pmp 450 can support up to 60 users at 100Mbps each per AP and epmp supports 30 users per ap at 100Mbps each. Site designs keep utilization of AP's below these thresholds. This will prevent over utilization at peak times on the hardware directly. Monitoring of usage from the fiber pops to prevent max capacity consumption will also prevent slowness and overloading of the network. Once a fiber capacity has reached 70%, GigaBeam's standard practice is to upgrade the circuit or add circuits for more capacity.

9. Project Readiness

Describe the current state of project development, including but not limited to: planning, preliminary engineering, identifying easements/permits, status of MOU or MOA, and final design. Prepare a detailed project timeline or construction schedule, identifying specific tasks, staff, contractor(s) responsible, collection of data, etc., and estimated start and completion dates. Applicants must include Memorandums of Understanding (MOUs) or Memorandums of Agreement (MOAs) between applicants (drafts are allowable). Label Attachments: Attachment 6 – Timeline/Project Management Plan; Attachment 7 – MOU/MOA between Applicant/Co-Applicant.

Answer:

The County and GigaBeam have a fully executed MOU.

Permitting is estimated to take up to six months, with sites being permitted concurrently. Construction can be done within six months. Gigabeam keeps much of the required equipment and construction materials in

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stock, what is not available in their inventory can be ordered and delivered quickly.

Customer equipment installation will be completed as customers sign up for service, with work to be completed within six months after construction is complete. Project closeout would then be conducted during the last two months of the project timeline.

10. Matching funds: Complete the funding sources table indicating the cash match and in-kind resources from the applicant, co-applicant, and any other partners investing in the proposed project (VATI funding cannot exceed 80 percent of total project cost). In-kind resources include, but are not limited to: grant management, acquisition of rights of way or easements, waiving permit fees, force account labor, etc. Please note the a minimum 20% match is required to be eligible for VATI, the private sector provider must provide 10% of the required match. If the private co-applicant's cash match is below 10% of total project cost, applicants must provide financial details demonstrating appropriate private investment. Label Attachments: Attachment 8 - Funding Sources Table; Attachment 9 – Documentation of Match Funding.

Answer:

GigaBeam Networks will be providing the matching funds of \$305,459 for customer installation labor and supplies and construction.

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

Answer:

Carroll County will be leveraging funding from other grants in the area to improve and expand service to citizens. In 2019, Carroll County requested and was awarded funding from the Virginia Tobacco Region Revitalization Commission to improve service by installing cluster or neighborhood utility poles in unserved areas. This project would expand on a portion (approx. half) of the \$300,000 grant awarded to The Wired Road in the initial LMB funding round. The request includes a pole location study (~\$42k) to determine sites and propagation areas for the intended poles. The application indicates 500 premises served at a cost to TRRC of \$400 per premise, although those costs and outcomes are likely to change based on results of the pole site study.

12. Marketing: Describe the broadband adoption plan.

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

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

Answer:

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Gigabeam would market the service in the project area in conformity to current marketing plans including:

- Door hangers
- Radio Ads
- Social Media
- TV Ads
- Newspaper Ads
- Community Events

Based on conversations with other areas where new service has been introduced and confirmed in Gigabeam's experience, residents see the company doing the preliminary field work and construction near their homes and inquire about the coming service - even asking if they can be connected right there and then. While this is a passive marketing role for the provider, it will also serve as a marketing piece for launching the service and acquiring new customers.

13. Project Management: Identify key individuals who will be responsible for the management of the project and provide a brief description of their role and responsibilities for the project. Present this information in table format. Provide a brief description of the applicant and co-applicant's history and experience with managing grants and constructing broadband communication facilities. Please attach any letters of support from stakeholders. If applicant is not a locality(s) in which the project will occur, please provide a letter of support from that locality. Attachment 10 – Letters of Support.

Answer:

Carroll County, VA and Mount Rogers Planning District Commission - Project Administration

Carroll County, with the assistance of the Mount Rogers Planning District Commission, will be responsible for the project administration.

Gigabeam Networks – System construction and operation

GigaBeam Networks, LLC is a locally owned and operated WISP (wireless internet service provider) with offices in Rich Creek and Bluefield, VA. GigaBeam Networks started as WVVA.net, a dialup provider in the late 90's and expanded to offering fixed wireless broadband access in 2004. Currently, GigaBeam Networks offers service in 8 regional counties over 3 states (Virginia, West Virginia, and Kentucky). As shown in the attached maps, GigaBeam Networks has invested heavily in Giles County this summer to extend their Fixed LTE network. This work will continue those efforts.

Currently, residential speeds up to 50Mbps are offered throughout the network footprint and up to 100Mbps coming soon. Also being deployed is one of the first "5G" wireless networks in Bluefield that will offer speeds up to 1Gbps. Slated for this fall is the addition of GigaStream TV, an affordable alternative to traditional television followed by GigaVoice Phone services. WVVA.net Inc. is the parent company of GigaBeam Networks, LLC and has 100% ownership. WVVA.net Inc. is 100% owned by Michael Clemons, President and founder.

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GigaBeam Networks has been in the ISP business for over 21 years. A full staff of qualified personnel provides every aspect of operating the business as well as constructing new sites. All climbers are Comtrain certified and GigaBeam Networks is an approved American Tower Company contractor. Staff also has extensive knowledge in designing, engineering, and maintaining large scale networks. GigaBeam Networks' primary focus is local, friendly customer support.

14. 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 11 – Derivation of Costs; Attachment 12 - Documentation of Supporting Cost Estimates.

Answer:

See attachments for detailed costs per site.

15. The cost benefit index is comprised of three factors: (i) state share for the total project cost, (ii) state cost per unit passed, and (iii) the internet speed. From these statistics, 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
- c. Highest residential speed available in proposed project area

Answer:

- A. \$707,440
- B. 825 serviceable units
- C. The highest residential speed available is 10/1 from Centurylink

16. Commonwealth Priorities

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

- a. How the proposed project fits into a larger plan to achieve universal broadband coverage for the locality. Explain the remaining areas of need in the locality and a brief description of the plan to achieve universal broadband coverage.
- b. Businesses, community anchors, or other passings in the proposed project area that will have a significant

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impact on the locality or region because of access to broadband.

c. Unique partnerships involved in the proposed project. Examples include electric utilities, universities, and federal/state agencies.

d. Digital equity efforts to ensure low to moderate income households in the proposed project area will have affordable access to speeds at or above 25/3 mbps.

Answer:

Carroll County was previously awarded two grants to further the opportunity for broadband coverage for citizens. With the topography of the county, this can be a challenge. Including this proposed project, extends the opportunity for affordable broadband to households, community assets and two schools.

17. Additional Information

17. Provide any other information that the applicant desires to include. Applicants are limited to four additional attachments.

Label Additional Attachments as:

- a. Attachment 13 – Two most recent Form 477 submitted to the FCC or equivalent
- b. Attachment 14 – XXXXXXXX
- c. Attachment 15 – XXXXXXXX
- d. Attachment 16 – XXXXXXXX
- e. Attachment 17 – XXXXXXXX

Answer:

Additional letters of support have been added.

Attachments:

Documentation supporting project costs (e.g. vendor quotes)

CarrollVATI2021ProjectCosts817202064428.xlsx

Two most recent Form 477 submitted to FCC

Form477Dec2018817202045724.pdf

Optional

Form477Dec2019817202045730.pdf

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Optional

populationCarrollCounty817202072958.pdf

Map(s) of project area, including proposed infrastructure

ProjectAreaRoutes817202045745.pdf

Documentation that proposed project area is unserved based on VATI criteria

unservedCarrollCounty817202072840.pdf

Passings Form (Please use template provided)

PassingsForm817202073458.docx

Propagation Map if Wireless Project

CarrollCountyVATI2021CoverageMap817202064901.pdf

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

CarrollAgreement817202062630.pdf

Funding Sources Table

VATIFundingSourcesTable817202063151.docx

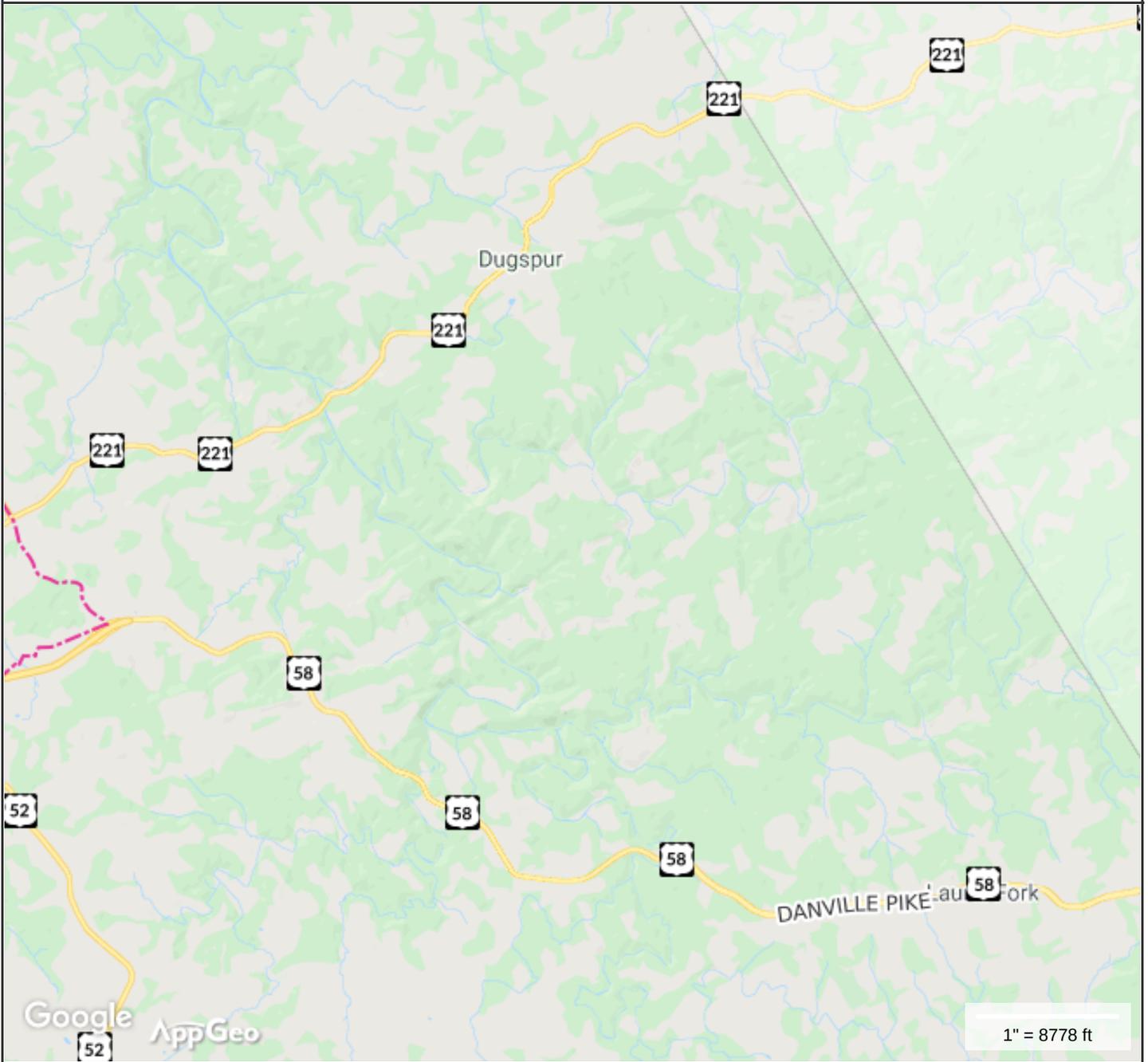
Letters of Support

CarrollLetters817202045314.pdf

Derivation of Cost (Project Budget)

CarrollVATI2021DerivationofCost817202063252.xlsx

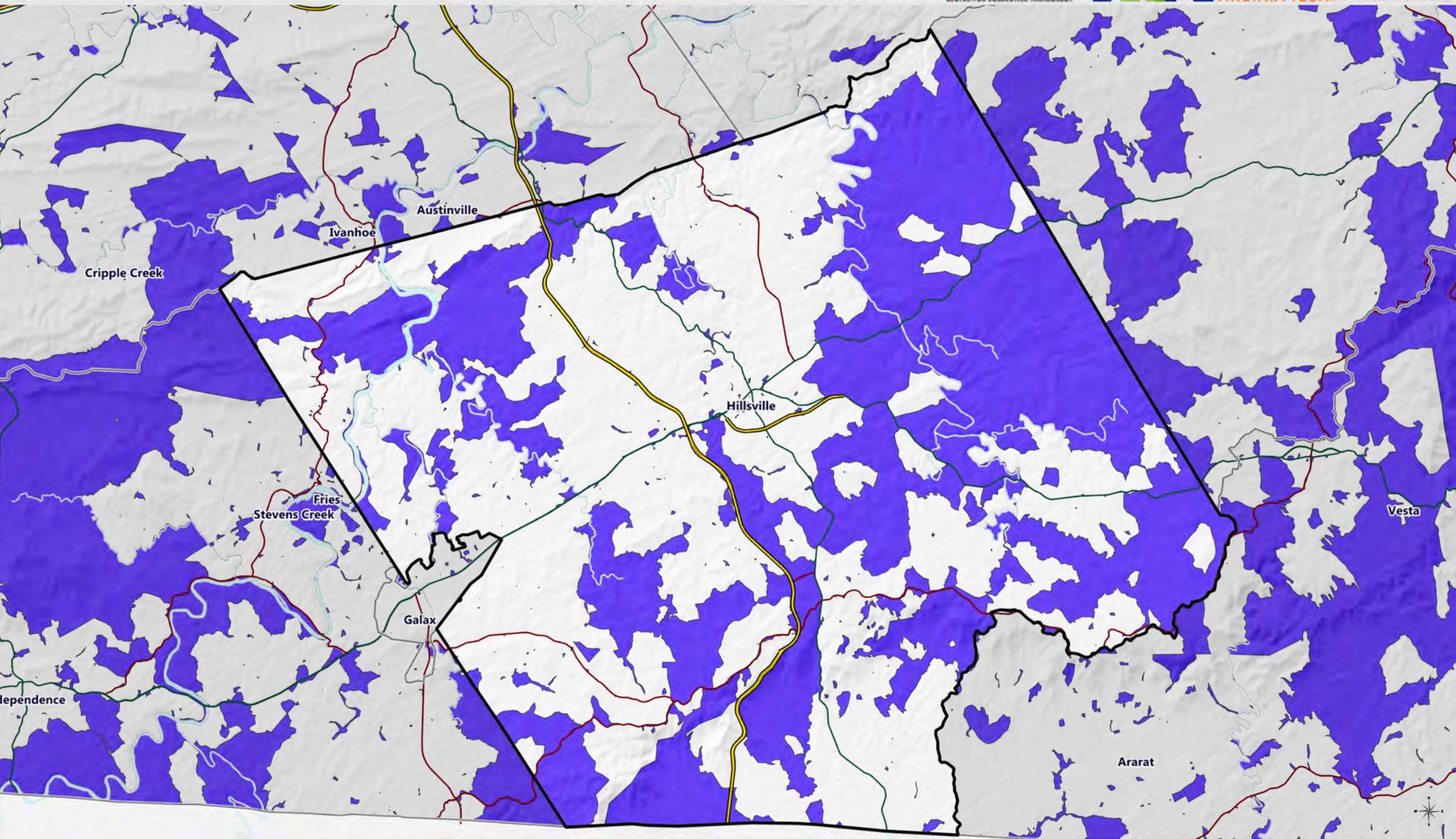
Carroll County Map



**MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT**

Carroll County, VA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 1/1/2020
Data updated 1/1/2020



Legend

■ Unserviced Areas

At a Glance

Population: 29724
Population data from 2015 Census estimates

About the Map

2 mi
Scale: 1:208875
Projection: NAD 1983 HARN Virginia I
Data sources: USGS, VGIN, VITA, US C
Report generated on 8/17/2020
Virginia Broadband Map gismaps.vita
Virginia Office of Telework Promotion a
CGIT Broadband Planning & Analysis T

2021 Virginia Telecommunication Initiative (VATI) Passing Form

Type of Passings	Total Number in Project Area	Number with Speeds at 10/1 or below in Project Area
Residential	821	821
Businesses (non-home based)		
Businesses (home-based)		
Community Anchors	2	2
Non-residential	2	2
Total Number of Passings	825	825

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

Definitions

Passing – any structure that can receive service.

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.

**VERTICAL ASSET AND NETWORK
OPERATION AGREEMENT**

This AGREEMENT (hereafter, "the Agreement") is entered as of this ___ day of May, 2019, by and between the COUNTY OF CARROLL, VIRGINIA, a political subdivision of the Commonwealth of Virginia (hereafter, "the County"), being a governmental entity created under the laws of the Commonwealth of Virginia; the WIRED ROAD AUTHORITY, a Virginia wireless service authority created pursuant to Section 15.2-5431.1 *et seq.* of the Code of Virginia (1950), as amended (hereafter, "the Authority"); and GIGABEAM NETWORKS, LLC, a limited liability company organized under the laws of the Commonwealth of Virginia, and authorized and licensed to do business in the Commonwealth of Virginia (hereafter, "the Company").

I. RECITALS:

WHEREAS, the parties recognize that reliable broadband access has become a critical component of modern life, essential for commerce, promoting tourism, facilitating communications among emergency first-responders, telemedicine, and education; and,

WHEREAS, the County and the Authority recognize that without reliable broadband access, many children residing in rural areas experience a significant disadvantage in obtaining a quality education, creating a "homework gap" due to the lack of broadband access in their homes; and

WHEREAS, the County and the Authority recognize the urgent need to enhance broadband access throughout its boundaries in order to improve educational opportunities for the citizens of the County, promote the growth of the local economy, improve healthcare and public safety, and generally promote the public health, safety and welfare; and

WHEREAS, recognizing these needs, the County, acting jointly with the County of Grayson and the City of Galax, formed the Authority to purchase, construct and operate certain broadband network elements to promote improved broadband access throughout the region; and,

WHEREAS, due to the high capital costs associated with providing broadband in rural areas with mountainous topography, there remains a dearth of providers willing and able to provide residential service in many unserved areas of the County at a reasonable price; and,

WHEREAS, the Authority has received certain grant funds, allocated to the County to facilitate the expansion of broadband connectivity and availability within the County through the identification of suitable sites for the erection of "neighborhood poles," with a goal to serve 20 new residential customers, on average; and the acquisition of such sites, construction of vertical assets thereon, and the interconnection of the assets with suitable facilities for backhaul; and,

WHEREAS, the Company is willing to commit to providing broadband service to unserved areas of the County through the use of the neighborhood poles upon the terms and conditions set forth herein, and the County and the Authority (hereinafter collectively referred to as "Owner") wish to promote the expansion of broadband service to these unserved areas by

leasing to Company a number of the Authority's neighborhood pole sites located within the County.

NOW, THEREFORE, FOR AND IN CONSIDERATION of the foregoing premises and the other mutual covenants between all parties, the receipt and sufficiency are hereby acknowledged by all parties, the parties hereto do hereby agree as follows:

II. WARRANTIES, REPRESENTATIONS AND COVENANTS

2.1 Warranties, Representations and Covenants of the Company. The Company hereby warrants, represents, and covenants that, as of the date of the execution of this Agreement:

(a) All of the Company's representations and warranties contained in this Agreement and any written statements and exhibits prepared in connection with this Agreement, are true and correct as of the date of execution hereof, and

(b) The Company is a duly authorized limited liability company organized under the laws of Virginia; and

(c) The Company has the requisite expertise and financial ability to fully, completely, and satisfactorily perform its obligations hereunder in full compliance with applicable law; and

(d) The Company owns the Equipment of the Company, and has the right, power, and authority to utilize the Equipment of the Company pursuant to the terms of this Agreement, and such equipment is free from liens or other encumbrances; and

(e) To the best of its knowledge, the Company has disclosed to County its knowledge of all facts, information, and data pertinent to its capacity to perform its duty and obligations under this Agreement.

III. SCOPE OF WORK

3.1 Intent. In order to assure viability of the broadband internet system for the Authority within the County the parties hereto intend to develop new markets throughout the County, in addition to the markets currently served within the County. The Company shall perform all services called for hereunder in compliance with all applicable federal, state, county, and municipal laws, ordinances and regulations, at the Company's expense. The parties shall work together to develop these new markets, including cooperating on joint applications to funding agencies for expansion of the Authority's broadband network within the County. The Company shall utilize its reasonable efforts to assist the County in identifying potential locations for vertical assets, however the Authority and the County will have primary responsibility for obtaining and maintaining any and all new land use agreements, license agreements, and leasehold agreements and/or renewals or modifications of any existing land use agreements, license agreements, and leasehold agreements as may be required in order to operate said broadband internet system as anticipated by this Agreement. All duties or activities of Company hereunder are referred to herein as the "Work."

3.2 The Company's Responsibilities. As more specifically set forth in this Agreement, Company agrees to perform all services called for hereunder in material accordance with all applicable federal, state, and local laws and administrative procedures, and in accordance with applicable standards of care. Company agrees to work in good faith with the County and the Authority in exploring the creation of public-private partnerships beyond the scope of this pilot project, including without limitation the joint application for additional phases of grant funding, as reasonably requested by the County and/or the Authority.

Except as otherwise provided herein, the Company shall, at its expense, conduct the Work, including, but not limited to, the specific items listed below:

- (a) The Company shall consult with the Authority and the County as requested to identify strategic locations for siting of the neighborhood pole facilities;
- (b) The Company shall enter into a lease agreement or agreements with the Authority for each pole location (the "Site" or "Sites"), the terms and conditions of which shall substantially conform to the form Lease attached hereto as Exhibit A; The Company shall provide service to subscribers from each pole location in accordance with the terms and conditions of this Agreement and the Lease for the Sites;
- (c) Company shall initially offer "high speed" broadband service to subscribers from each pole location. "High Speed" for purposes of this Agreement shall be defined as 10Mbps download and 1Mbps upload (10/1Mbps) or greater. The Company shall permit an agent or designee chosen by the Authority to monitor the physical sites upon which the Equipment of the Company is located.
- (d) For each pole location, Company shall begin offering service to subscribers within three (3) months of completion of construction of the pole, or signing of a lease for the pole site, whichever occurs later;
- (e) Company shall make reasonable efforts to extend service to any business or resident in the Unserved Areas covered by this Lease upon request, with a mutual goal of achieving an average take rate of 60% of homes within the area capable of being served from the Leased Premises. "Unserved" for purposes of this Agreement shall mean any areas in which service of 10 Mbps download and 1 Mbps upload are unavailable (10/1 Mbps);
- (f) Service to customers shall be reliable, with uptimes of at least 99.9% or greater, and shall respond to outages and service requests within industry standard response times. Service shall further meet the criteria set forth in Exhibit C, attached hereto;
- (g) Rates for services offered to the public shall initially be in accordance with the rate schedule set forth in Exhibit B, attached hereto. Rates may be adjusted annually, provided that no rates shall be increased by more than 2.5% from any year to the next without prior written approval from the Owner.

The Company shall be solely responsible for providing services to customers served from the Sites through its own employees and agents. Employees of the Company shall at all times be covered by the Workers' Compensation policies, insurance policies, and other compensatory policies of the Company, and shall not be deemed to be agents or employees of Owner. The Company warrants that all employees of Company shall be alcohol free and substance-free at the time said employees are conducting work within the scope of this Agreement.

In provision of services to the public from the Sites, the Company will at all times ensure that its level of service, uptime, troubleshooting shall be in conformity with the requirements of this Agreement, and if not explicitly defined herein, shall at all times meet or exceed industry standards. An authorized representative of the Company shall be responsible for handling complaints regarding the wireless broadband internet system. The Company shall report complaints to the Authority as otherwise authorized herein.

3.3 The Owner's Responsibilities.

(a) As more specifically set forth in this Agreement, the Owner shall work in good faith with Company to facilitate Company's performance of its obligations hereunder, including without limitation development of strategies to increase the number of residents of the County to whom service may be provided.

(b) The Owner agrees to work in good faith with Company to consider the use of public-private partnerships to obtain grant funding to strengthen the current broadband internet system and to expand said broadband internet system into other areas throughout the County.

(c) As consideration for the services rendered by Company, the Owner agrees to enter into exclusive lease agreements for the vertical assets identified and constructed pursuant to this agreement to Company for a lease term of three (3) years and at rents equal to the Owner's costs for the ground lease for the sites selected, renewable at the option of Company as provided in the Lease(s), upon satisfactory performance by Company of each of the terms herein, including provision of the broadband access to customers at the speeds and rates agreed to herein. Such leaseholds shall automatically terminate upon termination of this Agreement. The parties acknowledge that for any leases on County-owned property, such lease may be contingent upon the holding of a public hearing in accordance with Va. Code section 15.2-1800 et seq. and an affirmative vote by the County's Board of Supervisors. Nothing herein shall be deemed to entitle Company to damages in the event that the Board of Supervisors does not vote to approve such leases, and in such event Company's sole remedy shall be to terminate this agreement upon written notice to the Owner as provided herein. The parties agree that the lease pricing described herein represents a significant discount from market prices and constitutes valuable consideration for the Owner's rights under this Agreement, including enforcement of the Company's performance standards under Section III herein.

(d) The Authority agrees to work with Company to arrange point to point service to interconnect with the Authority's Network. Rates to be paid by the Company for such connections shall initially

be set at a rate of \$60 per month for a wireless, point to point backhaul. Rates may be amended by the Wired Road Authority from time to time in accordance with its generally applicable rate schedule.

3.4 Designated Representatives. The Owner designates the County Administrator for the County and the Authority as the Owner's primary liaison with the Company. Said liaison shall be required to devote only the time and effort to the administration of this Agreement that the Owner shall require. Company also shall designate in writing an individual to serve as its primary liaison with the Owner's liaison and the Authority's liaison. The liaison so designated by Company shall administer this Agreement on behalf of Company. Instructions and/or representations from the Owner's liaison and the Company's Liaison shall be deemed to be instructions and/or representations from the Owner and the Company, respectively; provided, that the Owner's liaison may on a case-by-case basis expressly condition his or her actions hereunder with respect to any particular issue upon obtaining the prior authorization and approval from the full County Board of Supervisors or the full board of directors of the Authority.

3.5 Term. This Agreement shall be effective upon execution by the parties hereto. The term of this Agreement shall continue for the entire three (3) year term of the Lease(s) executed pursuant to this Agreement, However, either party may terminate this Agreement, without cause, upon six (6) month's written notice to the other party. Termination of this Agreement will also constitute termination of all lease agreements entered into pursuant to this Agreement. In such event, the Company shall remove its equipment in accordance with the provisions of the Lease. The non-terminating party shall not be entitled to damages or other compensation arising from a termination under this paragraph Provided that no party is in default of any provisions of this Agreement beyond any applicable grace periods, this Agreement shall automatically renew for up to three (3) additional one (1) year terms (individually, a "Renewal Term"), each of which shall begin on the anniversary of the Effective Date of the Lease. The Company may decline renewal by giving the Authority written notice of its intention not less than sixty days prior to the expiration of the then current term. All terms, covenants, and conditions of this Agreement shall remain in full force and effect during all Renewal Terms.

IV. LAND USE AGREEMENTS AND LEASEHOLDS

4.1 Permits. Owner will be responsible for procuring rights for the construction access, use and maintenance of the Sites, whether by ground lease, purchase or otherwise. Company and Owner agree to work cooperatively to identify Site locations and other locations for possible network expansion. In no event shall the Company have any rights against the Owner as a result of any failure or inability to obtain land use rights to a location, and this Agreement confers no rights on the part of Company to require the Owner to take any action to obtain such rights. The final terms of any site ground lease shall be at the sole discretion of the Owner. Company shall at all times comply with the terms of the ground lease applicable to each Site, and shall keep the premises thereof in a safe and reasonably orderly condition, free to trash and other debris and in accordance with all laws and regulations applicable to the Sites or to Company's operations thereon.

V. REPORTING

5.1 Monthly Reports. The Company shall make reports to the Owner regarding the operation of the Company's broadband internet system and the activities contemplated hereunder. Such written reports shall include, but not be limited to, the following: (1) reports regarding number of Carroll County, Virginia customers served pursuant to this Agreement, by month and by pole location; (2) financial reports regarding the numbers of users by rate plan selected; (3) reports regarding any outages in the broadband internet system lasting for a period of greater than six (6) hours; (4) reports regarding service calls involving the broadband internet system; (5) reports regarding the status of infrastructure and equipment owned by the County or the Authority and utilized by Company.

5.2 Complaints. An authorized representative of the Company shall be responsible for handling complaints regarding the services provided by Company pursuant to this Agreement. The Company shall report complaints not resolved within six (6) hours to the Owner, providing a description of the issue and action plan for resolution.

5.3 Company's Provision of Bandwidth. Upon the commencement of services hereunder, the Company shall be responsible for providing bandwidth to support all customers served pursuant to this agreement through its own network resources, agreements with the Authority, or through third parties. Bandwidth or other services provided by the Authority shall be at the rates provided in Section 3.3.

VI. ACCESS AND SAFETY

6.1 Access. Company's access to the sites shall conform in all respects to the requirements of the applicable ground lease governing the Authority or County's rights to access the sites. Company shall implement all safety procedures and equipment required by law or regulation and shall at all times act in a reasonably prudent manner to protect the safety of employees, contractors, or others on or near the premises leased hereunder, as well as the public in general.

VII. DEVELOPMENT OF ADDITIONAL WIRELESS BROADBAND INTERNET SYSTEMS OR EXPANSION OF EXISTING SYSTEM

7.1 Expansion. The Company shall, in cooperation with Owner, develop a plan for the possible expansion of the broadband internet system in accordance with the terms of this Agreement. The planned expansion of the system would continue to be overseen and regulated by the Owner with end-user service to be provided by the private sector or a combination of the Authority and private-sector providers. Plans developed by the Company and the Owner shall include the expected cost of the expansion and anticipated rates for potential customers. The Owner, in its discretion, may elect to pursue the proposed plan or not pursue the plan.

7.2 Company's Rights. Nothing herein shall limit the Company's rights to acquire its own sites for serving customers within the County. The Company may, in the Company's discretion and at the

Company's expense, design, construct, operate and develop an expansion of its broadband internet system using the Owner-leased sites or sites acquired independently by Company.

VIII. DEFAULT

8.1 Event of Default. An "Event of Default" occurs when Company fails to materially perform any of its obligations under this Agreement including, but not limited to the following, and Company fails to cure its default within thirty (30) days after its receipt of written notification by the Owner; provided the Company shall have such extended period as may be required beyond the thirty (30) days if the nature of the cure is such that it reasonably requires more than thirty (30) days and the Company commences the cure within the thirty (30) day period and thereafter continuously and diligently pursues the cure to completion in accordance with a schedule and plan for such cure acceptable to the Owner:

- (a) Failure of Company to materially comply with any and all conditions under this Agreement, or under the applicable Site Lease;
- (b) Willful or grossly negligent acts of Company in performing any aspect of the Work;
- (c) Failure of Company to substantially perform any aspect of the Work, including adhering to the performance standards referenced in Exhibit C, or other substantial failure in the Owner's judgment, to provide consistent customer service, response, troubleshooting and claims resolution to customers served pursuant to this Agreement; or
- (d) Failure to materially comply with any federal, state or local law, rule, resolution or ordinance applicable to the Work;

Upon the occurrence of an Event of Default, the Owner shall have the right to terminate this Agreement by written notice to Company at any time prior to cure or Owner's waiver of said Event of Default, and in the alternative has the right, but not the obligation, to cure said Event of Default, at Company's expense; provided, that in the event that the Owner exercises its right to terminate this Agreement hereinabove, the Company shall, if directed by Owner, continue operations in good faith to minimize service disruptions to end-users for a reasonable transition period to enable the orderly transfer of operations to the Owner or a designee of Owner, whereupon Company shall vacate the Sites.

8.2 Owner's Rights. In the event the Owner terminates this Agreement in whole or in part as provided in Section 9.1, the Owner shall have the right to assume maintenance and operation of the Sites, and to operate the Sites for the remainder of the term of this Agreement. If Owner terminates under this provision and it is later adjudicated that Company was not in breach of this Agreement, then Owner's termination shall constitute a breach by Owner.

8.3 Company's Rights. Company shall have the right to terminate this Agreement in the event of a material breach of this Agreement by the Owner, which, after ninety (90) days following written notice from Company, has not been cured.

8.4 General. The rights and remedies of the parties provided in this Article IX shall not be exclusive, and are in addition to any other rights and remedies provided by law or under this Agreement. Failure on the part of either party to exercise any right or remedy granted to it hereunder for previous default shall not constitute a waiver to exercise any right or remedy granted to it hereunder in the event of a subsequent default.

8.5 Notices Concerning the System. Both parties agree to copy the other party promptly, but in no event later than seven (7) days of receipt of any notice of any correspondence that affects the wireless broadband internet system.

IX. REVENUE COLLECTION & COMPENSATION

9.1 Leasehold Fees of the County and Authority. Company shall make all rent payments as called for in the Lease, for each Site.

9.2 Service Prices and Fees. During the first year of this Agreement, the Company shall institute its current schedule of rates, fees, and charges as currently charged by the Company, and as set forth in Exhibit B. Such rates, fees, and charges shall be no higher than any rates, fees, and charges the Company charges its customers served by any systems the Company maintains and operates. Upon request, the Company will provide the Owner with verification of the Company's rate schedules for other systems. The Company shall provide the Owner and the customers served pursuant to this Agreement written notice of at least thirty (30) days in advance of the Company's intent to increase the Company's rates, fees, and/or penalties for services.

X. SALE OF SITES; ENCUMBRANCES

10.1 Sale of Sites. In the event of a sale or other transfer of one or all of the Sites, the Company's rights shall be governed by the terms of the applicable Site lease.

10.2 No Liens. The Company agrees that it shall not cause or allow any liens, encumbrances, charges, or assessments to be placed or levied upon the Property of the Owner in use for the broadband internet system, and further agrees that, in the event of such occurrence, it will promptly and fully discharge the same.

XI. GENERAL PROVISIONS

11.1 Independent Contractor. The Company is, for all purposes arising out of this Agreement, an independent Contractor and shall not be deemed an employee, agent, or mandate of the Owner. It is expressly understood and agreed that the Company shall in no event as a result of this Agreement be entitled to any benefits to which the employees of Owner are entitled, including, but not limited to, overtime, any retirement benefits, worker compensation benefits, any injury leave or other leave benefits.

11.2 Assignment and Subcontracting. This Agreement or any portion thereof may not be assigned by the Company without the expressed prior written consent of the County and the Authority, in their jointly-exercised discretion. Company shall have the right to subcontract construction and

installation of equipment, but will operate from the Sites using its own forces. The Company shall give its personal attention to the fulfillment of the Agreement and the services provided to the public from the Sites.

11.3 Hold Harmless Clause.

(a) The Company agrees to indemnify, defend and hold harmless the Owner, and their officers, agents, and employees from, against, and with respect to any claims incurred by or asserted against the County or the Authority, arising due to any negligence or intentional misconduct of the Company or any of its officers, agents, employees, or subcontractors, in the performance of this Agreement. Such claims shall include, but not be limited to, any violations of Federal Communications Commission policies, regulations, rules, or any other applicable federal, state, or local laws. However, the Company shall not be required to indemnify the Owner for any matter to the extent that it is due in whole, or in part, to the negligence, willful misconduct, or wrongful act of the Owner.

11.4 Taxes, Assessments and Fees. Company shall pay all applicable taxes and fees related to the Company's equipment or the performance of its obligations under the Agreement.

11.5 Insurance. The Company shall secure and maintain throughout the term of this Agreement the following types of insurance with limits as shown to protect the County, the Authority, and the authorized agents and employees of the above, from any damage claims, including exemplary or punitive damages, for damage such as bodily injury, death, or property damage, which may arise from the Company's operations and Work under this Agreement, whether such operations be by Company, a subcontractor, an agent of Company, or anyone employed by Company directly or indirectly.

(a) Worker's Compensation Insurance. The Company and its subcontractors shall procure and maintain during the term of this Agreement Worker's Compensation Insurance for all of its employees to be engaged in the Work under this Agreement. In case any class of employees engaged in the Work under this Agreement is not protected under the Workers Compensation Statute, the Company shall provide employer's liability insurance for the protection of such of its employees as are not otherwise protected. Employer's Liability Insurance shall be a minimum of One Million Dollars (\$1,000,000.00) for occurrence.

(b) Company's General Liability Insurance. The Company shall procure and maintain in full force and effect during the term of this Agreement and including completed operations and coverage for underground explosion or collapse, a Comprehensive Liability Policy on an occurrence basis. Comprehensive Liability Insurance shall be a yearly minimum of Two Million Dollars (\$2,000,000.00) per occurrence and Five Million Dollars (\$5,000,000.00) in the aggregate.

(c) Comprehensive Automobile Liability Insurance. The Company agrees to carry a Comprehensive Automobile Liability Policy providing bodily injury liability on an occurrence basis and providing Property Damage Liability on an accident basis. The policy shall protect the Company against all liability arising out of the use of automobiles, both private, passenger, and commercial, regardless of whether such vehicle shall be owned by

the Company, owned by others, or hired. Limits of Liability for Comprehensive Automobile Liability Insurance shall be Two Million Dollars (\$2,000,000.00) per occurrence combined single limit.

(d) Certificate of Insurance. Appropriate Certificates of Insurance shall be used in submitting evidence of compliance with the above requirements. The Company will provide the Authority with a copy of the Company's Certificates of Insurance.

(e) Insurance Adjustment. On the third (3rd) anniversary of the Commencement Date and every three (3) years thereafter, the Authority and Company shall reconsider the policy limits of all required insurances to reflect appropriateness of the coverage required. The foregoing insurance policies shall be carried with responsible insurance companies authorized to transact business in the Commonwealth of Virginia; shall name the Owner as an additional insured; shall provide that with respect to the interest of the County or Authority in such policy or policies, the insurance shall not be invalidated by any action or inaction of the Company or by any breach or violation of Company of any warranties, declarations or conditions contained in such policy or policies; and shall provide that Owner shall be given at least thirty (30) days written notice prior to any modification or termination of said insurance. Prior to the commencement of any activity or operation by the Company hereunder, the Company shall furnish to the Owner certificates evidencing insurance coverage satisfactory to the Owner as set forth herein above.

11.6 Audit and Inspection of Records. The Company shall keep accurate records related to the services provided as part of this Agreement, particularly records documenting the matters to be reported in Company's monthly reports to Owner, and such supporting documentation shall be subject to audit and verification by Owner upon five (5) business days' notice. Company shall not, however, be required to disclose information which is required by law to be kept confidential, such as end-user identifying information and Company may redact such confidential information prior to inspection by Owner.

11.7 Force Majeure. Notwithstanding the foregoing, neither party shall be assessed with damages during any delay in the performance of its obligations hereunder caused by events beyond the reasonable control of the performing party, including without limitation: acts of God, war, riot, explosion, sabotage caused by an unrelated third party, floods, forest fires, tornadoes, hurricanes or other extreme weather, earthquakes, epidemics, quarantine restrictions, labor strikes, suppliers' or vendors' strikes, freight embargoes, legislative action, and regulatory action or inaction, provided that such events are not directly or indirectly the result of the performing party's omission, material fault, or negligence. The performing party shall make reasonable efforts to mitigate the effects of said causes.

11.8 Compliance with Laws. The Company agrees to comply with all laws and regulations federal, state, and local laws and regulations now in force and which may hereafter be in force during the term of this Agreement, including compliance with all applicable permits, licenses, reporting, inspections, or regulations as amended.

11.9 Compliance with Safety Regulations. To the extent applicable, the Company shall comply with the Department of Labor Safety and Health Regulations promulgated under the Occupational Safety and Health Act of 1970 (PL-596), and under Section 107 of the Agreement Work Hours and Safety Standard Act (PL-9154), and under corresponding Virginia statutes and regulations.

11.10 Discrimination. The Company shall not discriminate against any person because of race, sex, age, creed, color, religion, or national origin, or other status protected by law.

11.11 Notices. All notices or other communications required or permitted hereunder shall be sent by telecopy, facsimile, email, certified mail, or express mail, addressed as follows or to such other addresses as may be designated hereunder from time to time:

Company: Gigabeam Networks, LLC
ATTN: Michael Clemons
601 Virginia Avenue
Bluefield, VA 24605
Telephone: (540) 726-2317

County: Steve Truitt –County Administrator
Carroll County Board of Supervisors
605-1 Pine Street
Hillsville, VA 24343
Telephone: (276) 730-3001
Fax: (276) 730-3004

Authority:
The Wired Road Authority
1117 E Stuart Drive
Galax, VA 24333

Copy To: Stephen V. Durbin – Carroll County Attorney
P.O. Box 2009
Christiansburg, VA 24068-2009
Telephone: (540) 260-9011
Fax: (540) 260-0022

11.12 Affirmative Action and Equal Employment Opportunity. The Company shall comply with all affirmative action and equal employment opportunity requirements as set forth herein or as required by applicable laws, rules, or regulations.

11.13 Time is the Essence/Survival or Terms. Time is of the essence in this Agreement and in each of its provisions. The provisions of Paragraph 12.3 (Hold Harmless Clause) shall survive the termination of this Agreement.

XIII. MISCELLANEOUS

12.1 Complete Agreement. This Agreement, including the Exhibits, represents the complete agreement between the parties, and it supersedes all prior agreements, requests for proposals, and proposals. No terms of any previous agreement remain in force or effect.

12.2 Section Headings. The section or paragraph headings are used only for convenience and are not to be used in determining the intent of the parties or in otherwise interpreting this Agreement.

12.3 Provisions Severable. If any provision of Agreement shall be declared illegal, void or unenforceable, the other provisions shall not be affected but shall remain in full force and effect, unless the resulting interpretation of the Agreement shall materially alter the obligations of either party so as to work an unfair hardship on such party (the "Burdened Party"), in which case the Burdened Party shall have the option to request a renegotiation of the Agreement and/or to terminate this Agreement upon ninety (90) days advance written notice to the other party stating the reason for termination. This Agreement may be modified, amended, discharged, or waived only by an agreement in writing by each party.

12.4 Successors and Assigns. This Agreement shall be binding upon and will inure to the benefit of the successors and assigns of the respective parties hereto.

12.5 Counterpart. This Agreement may be executed in counterparts, each of which, when so executed and delivered, shall constitute an original, fully enforceable counterpart for all purposes.

12.6 Attorney's Fees. The parties hereto shall be responsible for their own attorney's fees in any action related to this Agreement.

12.7 Governing Laws. This Agreement will be governed by and construed according to the laws of the Commonwealth of Virginia. The parties agree that any actions brought to enforce the rights of either party under this Agreement shall be filed in the state and federal courts in the Commonwealth of the Virginia.

IN WITNESS WHEREOF, the parties hereto have caused their duly authorized representatives to execute this Agreement as of the day and year first above written.

CARROLL COUNTY, VIRGINIA

By: Rex L. Hill
Rex Hill, Chairperson

COMMONWEALTH of VIRGINIA,
COUNTY of CARROLL, to-wit:

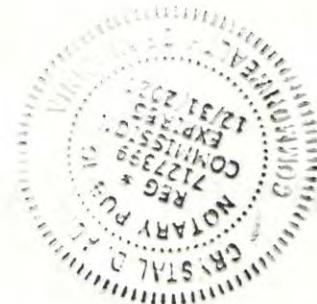
The foregoing Agreement was acknowledged before me, the undersigned Notary Public, in and for the jurisdiction aforesaid by Rex Hill, Chairperson of the Carroll County Board of Supervisors, whose identity was satisfactorily proven before me, on this 14 day of May, 2019.

My Commission Expires: 12-31-20

My Notary Registration No.: 7127399

Cybil D. Adams
Notary Public

Attest: _____



WIRED ROAD AUTHORITY

By: Keith E. Barker

Keith E. Barker, Chairperson

COMMONWEALTH of VIRGINIA,

COUNTY of CARROLL, to-wit:

The foregoing Agreement was acknowledged before me, the undersigned Notary Public, in and for the jurisdiction aforesaid by Keith Barker, Chairperson of the Wired Road Authority, whose identity was satisfactorily proven before me, on this 14 day of May, 2019.

My Commission Expires: 12-31-20

My Notary Registration No.: 7127399

Cybil D. Adams
Notary Public



GIGABEAM NETWORKS, LLC

By: Michael Clemons Michael Clemons, President

COMMONWEALTH of VIRGINIA,

COUNTY of CARROLL, to-wit:

The foregoing Agreement was acknowledged before me, the undersigned Notary Public, in and for the jurisdiction aforesaid by Michael Watson, President of Gigabeam Networks, LLC, whose identity was satisfactorily proven before me, on this 14th day of May, 2019.

My Commission Expires: 12-31-20

My Notary Registration No.: 7127399

Cytle D. Adams
Notary Public

Approved as to Form:

Stephen V. Durbin, Esq.
Carroll County Attorney

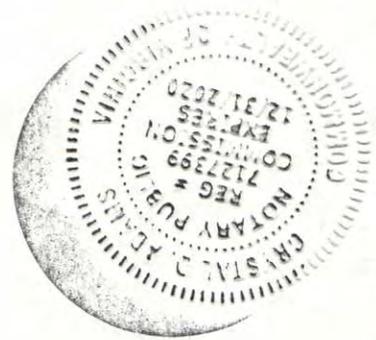


EXHIBIT B

INITIAL PRICE STRUCTURE

Residential:

10x1Mbps - \$39
25x2Mbps - \$59
50x3Mbps - \$79

Business:

25x2Mbps - \$89
50x3Mbps - \$109
75x5Mbps - \$119
Custom plans up to 1Gbps*

Residential (router included):

10x1Mbps - \$45
25x2Mbps - \$65
50x3Mbps - \$85
100x5Mbps - \$105

Business:

25x2Mbps - \$89
50x3Mbps - \$109
100x5Mbps - \$129
Custom plans up to 1Gbps*

*Custom plans will not be subject to Owner approval, provided that Company continues to offer standard plans acceptable to Owner.

For entirely new levels of service, such as 5G or other packages, Company shall obtain Owner approval of rates prior to offering such services to the customers served pursuant to this Agreement.

EXHIBIT C

Standards of Performance for Services Provided by Company

1. Company shall make reasonable efforts to extend service to any business or resident in the County that requests it. If coverage to the business or resident requesting service is available from one or more of the Sites, Company shall proceed with reasonable diligence to provide the requested service in a timely manner. If the coverage is not available from an existing Site, Company shall promptly notify the requesting party. Company's monthly reports pursuant to Section 5.1 shall include a description of all service requests that could not be served from existing Sites, along with a brief description of proposed extensions of the network into further unserved areas, taking into account the service requests that could not be provided from existing Sites.
2. Service provided by Company shall be reliable, with uptimes of 99.9% or greater. A fifteen (15) day "shakedown" period shall be permitted for each Site as it becomes operational and begins connections to customers.
3. Company shall, whenever feasible, perform routine maintenance so as to minimize service disruptions or degradation of service.
4. Company shall report service disruptions in accordance with Section 5.1.
5. Company shall provide customers with the ability to report service problems both via telephone and online. Company shall ensure adequate staffing to avoid excessive telephone wait times for service problems, scheduling of service, billing issues and other customer-service related inquiries.
6. In the event of service disruptions, Company will act with reasonable responsiveness at all times to inform customers of the receipt any outage report and the status of the Company's efforts to restore service. For service disruptions occurring in the normal course and except for extreme weather events or other natural disasters, the Company will acknowledge customer reported outages within four (4) hours and notify the customer of the plan for restoring service. Company will dispatch a truck within four (4) hours of the reported outage, or if the fourth (4th) hour ends after normal business hours, by 12:00 p.m. the following day. For outages due to extreme weather, company will proceed expeditiously to restore service as promptly as reasonably possible.
7. Company shall respond promptly to requests for new service.
8. For all service calls to customer premises, whether for initial service setup, repairs, maintenance or other service, Company shall give customers reasonable windows of time for the service call, and will notify customers promptly of changes in the service visit schedule.

9. Excessive legitimate complaints, as determined by the Owner, will be considered a failure to meet the Company's obligations hereunder.
10. Failure to consistently meet the Performance Standards described herein shall be cause for the Owner to suspend the discounted rental provided to the Company as described herein or to terminate the Agreement.

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	\$ 707,440	70	Pending
GigaBeam Networks	\$ 305,459	30	SECURED
	\$		
	\$		
	\$		
	\$		
	\$		
TOTAL	\$ 1,012,899	100%	

CARROLL COUNTY PUBLIC SCHOOLS
605-9 Pine Street
HILLSVILLE, VIRGINIA 24343

FAX: (276) 730-3210

TELEPHONE: (276) 730-3200
(276) 236-8145



August 11, 2020

To whom it may concern,

Carroll County Public Schools (CCPS) is in support of the effort to enhance broadband service to the citizens of Carroll County. As a school system we have always struggled with the limited broadband services that our students have access to from home. Since the COVID-19 pandemic our concerns have been verified by the number of students that could not access remote learning activities from home.

Our initial plan was to survey parents through an online format about their access to high speed internet services and computing devices. Of the 3600 students in our school division less than half of the families responded to the survey after multiple attempts to solicit their response. Of those 1710 responses to our requests; 996 responded they had access to reliable high-speed internet, 466 reported they had internet accessibility but were limited due to speed or usage limitations, 80 indicated that internet service was available, but they are not connected, and 153 respondents indicated that internet is not available at their residence.

From this survey completed online approximately 42% of all respondents indicated limited or no high-speed internet access. From our evaluations of student schoolwork submitted online during school closure, our estimate is that approximately 30% of the 3600 students we serve do not have internet access at home. We base that estimate on the number of students submitting assignments to school solely through paper/pencil packets and self-reporting of students using school grounds to access the internet. In regards to any lack of computing devices, CCPS provided Chromebook to all students in the division.

As a school superintendent that may be forced to close down schools this fall and deliver instruction virtually this places us at an unfair disadvantage with our counterparts throughout the state. How can we provide students with the recommended 25 hours of online instruction per week proposed by the Virginia Department of Education (VDOE) with such a high percentage of students having little or no broadband access? This current recommendation could become a requirement in October once it is voted on by the state board thus making us non-compliant with VDOE policy.

From a school perspective we are in dire need of expanded broadband services to meet the needs of our students not only during this pandemic but throughout the course of a regular school year. Please consider any request to expand and provide services to our county.

Sincerely,

A handwritten signature in cursive script that reads "Mark A. Burnette".

Mark A. Burnette, Ed.D., Siperintendent

July 31, 2020

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

Re: Support of Carroll County broadband project

Dear Dr. Holmes:

For the previous 10 years, Southwest Virginia stakeholders have continued to discuss the importance of ubiquitous and quality high-speed internet. During the initial years of development most resources were focused on areas of high demand or toward business and industrial development. In several smaller projects we have experienced moderate success in inducing investment that extended internet service into areas that otherwise would not be connected.

In the present, while under the strain of a pandemic and the societal transformations it has induced, our vulnerabilities have been exposed. The inability of many communities, households, and children to compete and thrive in our modern society has been revealed. How can we attract the modern remote worker, improve standards of living, or educate our future workforce without modern connectivity? The answer is that we cannot.

There is no better area for VATI investment than in the I81-I77 crossroads region of Virginia. This is a region that connects the more developed parts of the commonwealth to the most underdeveloped. With all other critical infrastructure in place, by providing high speed internet into virtually every area we will unlock potential for future regional development in SWVA. The VATI funds represent an opportunity to address our most significant weakness. I write in enthusiastic support of the Carroll County application for VATI funding.

Sincerely,



Josh Lewis
Executive Director

To Whom It May Concern;

As property owners and tax payers in Laurel Fork, Virginia since 1979, we would like to be brought into the 21st Century and have reliable internet available to us. Not only does broadband internet allow us to stay busy on rainy days but it also provides a safety net if/when we should ever need to call out for help. With internet, we would be able to get a cellular network extender and have a functioning phone that isn't on a party line -- as we have to deal with now via the old copper phone lines.

Internet access potentially benefits the safety of our families. It would also allow us to rent our bucolic cabins to those who want to get away but also need to check in with work and answer emails.

The Styers own Pebble Creek Weddings at the intersection of Peddlers Rock Rd and Hylton Rd. They have weddings where lack of internet access has caused people to get lost because they couldn't get in touch with the venue. Internet and a cellular network extender solve that and ensure that a signal would be available.

Our other neighbors on Peddlers Rock Rd are from Florida and stay in Laurel Fork during the summer. Elizabeth is an author and spends her time writing and her husband David fishes the stream and volunteers at Floydfest. They have complained that they would like for their grandchildren to visit but the kids have year round schooling where they would need internet access to submit homework. When Elizabeth is trying to upload parts of her book for revision she has to walk to the top of the hill to get spotty Verizon service.

Why is internet access an issue in the year 2020? The Tobacco Region Revitalization Commission was formed to get people with limited access connected to the web. Let's get some of that grant money to get the people of Peddlers Rock Rd connected.

Imagine the guy with a Christmas Tree farm who doesn't sell all his trees because no one knows he's there. We see the trees that are now too big to sell that no one bought. One simple website to advertise and people would gladly drive from Roanoke, Winston-Salem, or Greensboro to cut their own tree.

Imagine our other neighbor, the dairy farmer on Hylton Rd, who could start selling his goods without having to go anywhere. Who wouldn't want to go to a beautiful valley in Laurel Fork to buy home churned ice cream, fresh milk, fresh butter, or fresh steaks if they only knew it was there?

The more opportunities people have to advertise their goods, the more money they will bring in. That's income tax revenue for Carroll County. The internet is that doorway for some to the outside world and more opportunities.

Regards,

The Heydary family, the Styers family, the Young family

Cellell Dalton
Executive Director

Kaye Carter

Ronnie Collins



Larry Edwards
Chairman

Mandi McCraw

Richard Sowers

Carroll County Economic Development Authority

605-1 Pine St.
Hillsville, VA 24343

August 12, 2020

TO WHOM IT MAY CONCERN:

This is to show our support, as the Carroll County Economic Development Authority, of expansion of Broadband availability in Carroll County. This would certainly help improve the technological situation in our rural area.

Sincerely,

Carroll County Economic Development Authority

A handwritten signature in cursive script, reading "Larry E. Edwards", with a long horizontal flourish extending to the right.

Larry E Edwards
Chairman

Attachment 11: Derivation of Cost
Carroll County VATI 2021

Product	Total	VATI	Non-VATI	Source of Estimate	Date
Wireless Construction					
Design / Site Acquisition/Permitting	\$75,000		\$75,000	GigaBeam	8/17/2020
Utility poles / Towers	\$57,400	\$57,400		GigaBeam	8/17/2020
Power	\$99,000	\$99,000		GigaBeam	8/17/2020
Enclosures	\$11,900	\$11,900		GigaBeam	8/17/2020
Backhauls	\$131,200	\$131,200		GigaBeam	8/17/2020
Access Points	\$107,800	\$107,800		GigaBeam	8/17/2020
Labor and equipment use	\$57,000		\$57,000	GigaBeam	8/17/2020
Misc Supplies, cabling, POE	\$25,500		\$25,500	GigaBeam	8/17/2020
Shipping/Sales Tax	\$42,959		\$42,959	GigaBeam	8/17/2020
Wireless Client Installation					
Client Premise Equipment	\$300,140	\$300,140		GigaBeam	8/17/2020
Customer Installation Labor/supplies	\$105,000		\$105,000	GigaBeam	8/17/2020

Total \$1,012,899 \$707,440 \$305,459

Documentation supporting project costs
Carroll County VATI 2021

Budget per Site

	Dugspur Area	Dugspur Tower	MS-1	MS-2	MS-3	MS-4	MS-5	MS-6	MS-7	MT-8	MT-9	MS-10	MS-11	MS-12	MS-13	MS-14	MS-15	MS-16	MS-17	MS-18	MS-19	MS-20	MS-21	MS-22	MS-23	MS-24	MS-25	MS-26	Total	
Utility Pole/Tower		\$0	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$20,000	\$20,000	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$600	\$54,400
Power / Solar		\$1,000	\$2,500	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$6,000	\$6,000	\$3,000	\$3,000	\$2,500	\$3,000	\$3,000	\$3,000	\$2,500	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$2,500	\$3,000	\$3,000	\$3,000	\$83,000
Enclosure		\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$9,450
Backhaul1		\$5,000	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$5,000	\$5,000	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$105,200
Backhaul2		\$5,000		\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$5,000	\$5,000	\$1,600	\$1,600		\$1,600	\$1,600	\$1,600		\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600		\$1,600	\$1,600	\$1,600		
Backhaul3		\$1,600								\$1,600	\$1,600																			
AP1		\$7,500	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$63,800
AP2		\$7,500																												
AP3		\$7,500																												
AP4		\$7,500																												
Misc Supplies - Cable, Conduit, POE		\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$20,250
Site Construction		\$3,000	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$3,000	\$3,000	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$45,000
	Total	\$46,700	\$8,600	\$10,700	\$10,700	\$10,700	\$10,700	\$10,700	\$10,700	\$43,000	\$43,000	\$10,700	\$10,700	\$8,600	\$10,700	\$10,700	\$10,700	\$8,600	\$10,700	\$10,700	\$10,700	\$10,700	\$10,700	\$10,700	\$10,700	\$8,600	\$10,700	\$10,700	\$10,700	\$381,100
	Shipping and sales tax	\$2,975	\$956	\$1,067	\$1,067	\$1,067	\$1,067	\$1,067	\$1,067	\$2,779	\$2,779	\$1,067	\$1,067	\$956	\$1,067	\$1,067	\$1,067	\$956	\$1,067	\$1,067	\$1,067	\$1,067	\$1,067	\$1,067	\$1,067	\$956	\$1,067	\$1,067	\$1,067	\$33,698
	Grand Total	\$49,675	\$9,556	\$11,767	\$11,767	\$11,767	\$11,767	\$11,767	\$11,767	\$45,779	\$45,779	\$11,767	\$11,767	\$9,556	\$11,767	\$11,767	\$11,767	\$9,556	\$11,767	\$9,556	\$11,767	\$11,767	\$11,767	\$414,798						

Sylvatus WR-

	Laurel Fork Area	LF-CC	LF-MS1	LF-MS2	LF-MS3	LF-MS4	LF-MS5	Tower	TOTAL
Utility Pole		\$0	\$600	\$600	\$600	\$600	\$600	\$0	\$3,000
Power / Solar		\$1,000	\$2,500	\$3,000	\$2,500	\$3,000	\$3,000	\$1,000	\$16,000
Enclosure		\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$2,450
Backhaul1		\$5,000	\$1,600	\$1,600	\$1,600	\$1,600	\$1,600	\$5,000	\$26,000
Backhaul2		\$1,600		\$1,600		\$1,600	\$1,600		
Backhaul3		\$1,600							
AP1		\$7,500	\$1,300	\$1,300	\$1,300	\$1,300	\$1,300	\$7,500	\$44,000
AP2		\$7,500							
AP3		\$7,500							
AP4		\$7,500							
Misc Supplies - Cable, Conduit, POE		\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$5,250
Site Prep		\$3,000	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$12,000
	Total	\$43,300	\$8,600	\$10,700	\$8,600	\$10,700	\$10,700	\$16,100	\$108,700
	Shipping and sales tax	\$2,795	\$956	\$1,067	\$956	\$1,067	\$1,067	\$1,353	\$9,261
	Grand Total	\$46,095	\$9,556	\$11,767	\$9,556	\$11,767	\$11,767	\$17,453	\$117,961

Wireless Client Installation

CPE	\$359	\$175
Surge	\$15	\$15
Router	\$85	\$85
Cabling	\$10	\$10
Prep	\$150	\$150
Total	\$619	\$435
Shipping and sale tax	\$43	\$33
Total	\$662	\$468
Number of Expected Subs	400	300
Total Client Location Cost	\$264,723	\$140,417

Client Installation Grand Total \$405,139

Project Design / Site Acquisition / Permitting \$75,000
Project Total \$1,012,899

Budget Breakdown

VATI Grant Contribution

Wireless Sites	\$407,300
Wireless Clients	\$300,140
Total	\$707,440

Match

Site Build	\$125,459
Subscriber Build	\$105,000
Project Design/Site Acq./Permitting	\$75,000
Total	\$305,459

(RETAIN FOR YOUR RECORDS)
Form 477 Filing Summary

FRN: 0018473223 | Data as of: Dec 31, 2019 | Operations: Non-ILEC | Submission Status: Original - Submitted | Last Updated: Apr 21, 2020 16:47:26

Filer Identification

Section	Question	Response
Filer Information	Company Name	GigaBeam Networks LLC
	Holding Company Name	WVVA.net Inc.
	SAC ID	
	499 ID	
Data Contact Information	Data Contact Name	Michael Clemons
	Data Contact Phone Number	(540) 726-2317 ext: 103
	Data Contact E-mail	mclemons@gigabeam.net
Emergency Operations Contact Information	Emergency Operations Name	Michael Clemons
	Emergency Operations Phone Number	(540) 726-2317 ext: 103
	Emergency Operations E-mail	mclemons@gigabeam.net
Certifying Official Contact Information	Certifying Official Name	Michael Clemons
	Certifying Official Phone Number	(540) 726-2317 ext: 103
	Certifying Official E-mail	mclemons@gigabeam.net

Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	CENSUS_BLOCKS_ALL_DEC_2019.csv	Apr 21, 2020 16:41:54	7624
Fixed Broadband Subscription	Form 477 Customers Dec 2019.csv	Apr 21, 2020 16:46:02	104

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Kentucky	GigaBeam Networks LLC	Terrestrial Fixed Wireless	526
Virginia	GigaBeam Networks LLC	Terrestrial Fixed Wireless	4360
West Virginia	GigaBeam Networks LLC	Terrestrial Fixed Wireless	2738
Total			7624

Fixed Broadband Subscription

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

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Kentucky	Terrestrial Fixed Wireless	9	49	13	62
Virginia	Terrestrial Fixed Wireless	52	553	94	647
West Virginia	Terrestrial Fixed Wireless	43	529	58	587
Total		104	1131	165	1296

Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
5.000	1.000	18	0	18
10.000	1.000	748	60	808
10.000	2.000	3	0	3
25.000	2.000	290	69	359

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
50.000	3.000	72	32	104
100.000	10.000	0	2	2
200.000	200.000	0	1	1
1000.000	100.000	0	1	1
Total		1131	165	1296

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

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Terrestrial Fixed Wireless	5.000	1.000	18	0	18
	10.000	1.000	748	60	808
	10.000	2.000	3	0	3
	25.000	2.000	290	69	359
	50.000	3.000	72	32	104
	100.000	10.000	0	2	2
	200.000	200.000	0	1	1
	1000.000	100.000	0	1	1
Total			1131	165	1296



(RETAIN FOR YOUR RECORDS)
Form 477 Filing Summary

FRN: 0018473223 | Data as of: Dec 31, 2018 | Operations: Non-ILEC | Submission Status: Original - Submitted | Last Updated: Mar 23, 2019 10:14:13

Filer Identification

Section	Question	Response
Filer Information	Company Name	GigaBeam Networks LLC
	Holding Company Name	WVVA.net Inc.
	SAC ID	
	499 ID	
Data Contact Information	Data Contact Name	Michael Clemons
	Data Contact Phone Number	(540) 726-2317
	Data Contact E-mail	mclemons@gigabeam.net
Emergency Operations Contact Information	Emergency Operations Name	Michael Clemons
	Emergency Operations Phone Number	(540) 726-2317
	Emergency Operations E-mail	mclemons@gigabeam.net
Certifying Official Contact Information	Certifying Official Name	Michael Clemons
	Certifying Official Phone Number	(540) 726-2317
	Certifying Official E-mail	mclemons@gigabeam.net

Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	CENSUS_BLOCKS_ALL_Dec_2018.csv	Mar 23, 2019 10:08:20	7624
Fixed Broadband Subscription	form_477_customers_Dec_2018.csv	Mar 23, 2019 10:13:21	77

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Kentucky	GigaBeam Networks LLC	Terrestrial Fixed Wireless	526
Virginia	GigaBeam Networks LLC	Terrestrial Fixed Wireless	4360
West Virginia	GigaBeam Networks LLC	Terrestrial Fixed Wireless	2738
Total			7624

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

State	Technology	Census Tracts	Subscriptions
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**Fixed
Broadband
Subscription**

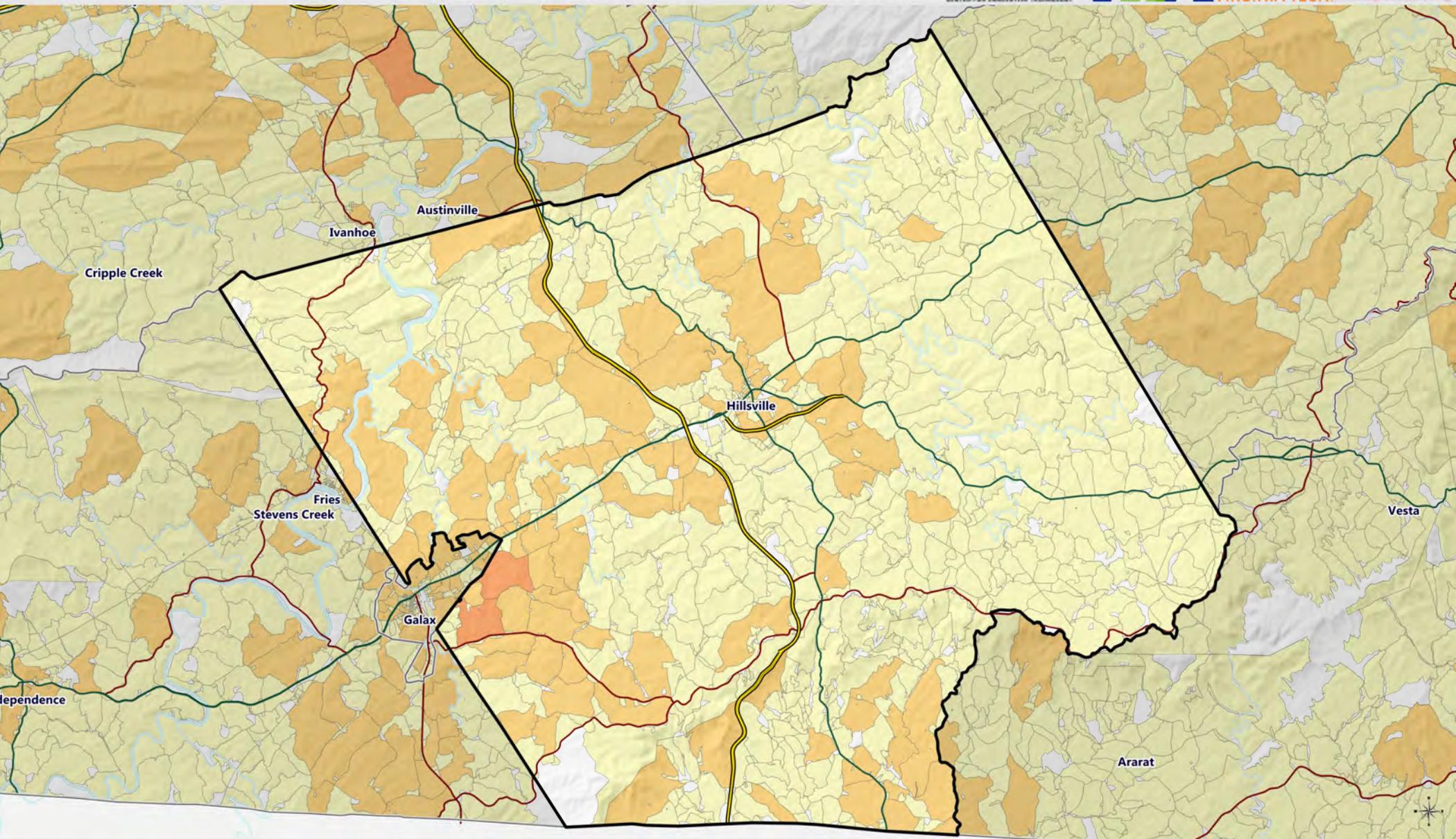
State	Technology	Census Tracts	Subscriptions		Total
			Consumer	Business / Govt	
Kentucky	Terrestrial Fixed Wireless	6	53	12	65
Virginia	Terrestrial Fixed Wireless	42	516	112	628
West Virginia	Terrestrial Fixed Wireless	29	486	56	542
Total		77	1055	180	1235

Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
10.000	1.000	781	89	870
25.000	2.000	226	70	296
50.000	3.000	48	19	67
50.000	50.000	0	1	1
100.000	100.000	0	1	1
Total		1055	180	1235

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

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Terrestrial Fixed Wireless	10.000	1.000	781	89	870
	25.000	2.000	226	70	296
	50.000	3.000	48	19	67
	50.000	50.000	0	1	1
	100.000	100.000	0	1	1
Total			1055	180	1235



Legend

- 0 - 71
- 71 - 307
- 307 - 962
- 962 - 2623
- 2623 - 19352

At a Glance

Population: 29724
Population data from 2015 Census estimates

About the Map

2 mi
Scale: 1:208875
Projection: NAD 1983 HARN Virginia I
Data sources: USGS, VGIN, VITA, US C
Report generated on 8/17/2020
Virginia Broadband Map gismaps.vita
Virginia Office of Telework Promotion a
CGIT Broadband Planning & Analysis T