

Application to DHCD Submitted through CAMS

Hanover County

Hanover County 2022 Accelerated Universal Fiber Deployment Initiative

Application ID: 86508262021104830
Application Status: Pending
Program Name: Virginia Telecommunications Initiative 2022
Organization Name: Hanover County
Organization Address:

Profile Manager Name: Kevin Nelson
Profile Manager Phone: (804) 365-6168
Profile Manager Email: knelson@hanovercounty.gov

Project Name: Hanover County 2022 Accelerated Universal Fiber Deployment Initiative
Project Contact Name: Kevin Nelson
Project Contact Phone: (804) 365-6168
Project Contact Email: knelson@hanovercounty.gov
Project Location: 7516 County Complex Road
Hanover, VA 23069-1530
Project Service Area: Hanover County

Total Requested Amount: \$14,430,100.00
Required Annual Audit Status: No Current Audits Found

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Budget Information:

Cost/Activity Category	DHCD Request	Other Funding	Total
Telecommunications	\$14,430,100.00	\$45,776,006.88	\$60,206,106.88
Construction	\$11,106,043.39	\$42,199,920.26	\$53,305,963.65
Construction Related Soft Costs	\$2,824,792.61	\$2,824,792.61	\$5,649,585.22
Other: Other CAPEX	\$499,264.00	\$751,294.01	\$1,250,558.01
Total:	\$14,430,100.00	\$45,776,006.88	\$60,206,106.88

Budget Narrative:

This application seeks \$14,430,100 in VATI funds to support deployment of a broadband network to achieve universal coverage in Hanover County.

Questions and Responses:

1. Project Description and Need

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

Answer:

This application for Hanover County is for the Hanover County 2022 Accelerated Universal Fiber Deployment Initiative (“Initiative”) and is submitted by Hanover County (“County”) and All Points Broadband (“APB” or “All Points”), as applicant and co-applicant, respectively.

The attached map and shape files demonstrate the specific boundaries of the proposed project area.

In October 2019, the County’s Board of Supervisors appointed a citizens committee to develop a broadband plan that would address the County’s unserved areas. That Blueprint to Broadband Internet Plan (see attachment 19) was adopted in December 2020. This Plan identified 11 strategies to achieve universal broadband coverage in the County. The County has been pursuing many of the recommendations in the Plan, including dedicating staff resources, working with regional groups, issuing a number of communication related resources, partnering with a company to design and implement a broadband solution, leveraging the County’s tower infrastructure, and pursuing State, federal, and private funding to enhance broadband across the County.

In March of 2021, the County issued an RFP to select an Internet service provider to develop an engineering plan and implementation timeline to achieve universal broadband access in the County, and to provide assistance to obtaining required VATI and other grant funding to deploy the related network. APB’s responded to the RFP with a proposal to deploy universal fiber-to-the-home in partnership with its electric utility middle mile partners, Dominion Energy Virginia (“Dominion”) and Rappahannock Electric Cooperative (“REC”) (see attachment 8).

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In June of 2021, after a competitive selection process, the County selected All Points as its ISP partner and the County and All Points entered into a related Broadband Partnership Agreement (see attachment 8), through which the County engaged All Points as a broadband deployment partner to pursue broadband deployment for all areas of the County that are unserved by broadband.

In June of 2021, the County, All Points and Dominion entered into a Memorandum of Understanding (see attachment 8) pursuant to which All Points assumed primary responsibility for developing a VATI-eligible network that would offer FTTH service to all locations within the County that are unserved by broadband.

From June of 2021 until the date of this application, APB and a team of senior County personnel have held routine coordination meetings to refine the proposed project.

To determine the proposed project area, All Points' field teams visited and visually inspected all areas within the County where incumbent wireline providers are not offering service. Specifically, All Points personnel visited all of the areas proposed to be served by the project to verify that each such area is not currently served by wireline technology (cable or fiber) that is capable of providing 25/3 service. All Points' preliminary analysis was reviewed by the County and compared to County information gathered from previous studies and analysis.

Jointly, the County and All Points then published a map of the proposed service area and an online survey which residents and property owners could complete to verify whether a specific location was served or unserved by broadband. More than 3,000 online surveys were completed by residents and property owners and the survey data was used to refine the proposed service area and to ensure that the unserved locations in the County will be included in the proposed project.

The project will extend FTTH infrastructure so that broadband service will be made available to 7,235 discrete locations in the County. On the basis of the extensive field inspections, comparisons to County data, and the online survey results, the County and All Points agree that the proposed project area will provide broadband access to all of the locations in the County that remain unserved by cable or FTTH broadband as of the date of this application. The primary reason why the proposed project area was selected is because the proposed project area includes all the remaining unserved locations in the County.

A secondary reason why the proposed project area was selected is because it is an ideal area in which partnerships with electric utilities can make FTTH broadband available. Approximately 50% of the project area is within Dominion's electric service area, and Dominion is participating in this project pursuant to Virginia Code §56-585.1:9, as amended,

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(the "Utility Leverage Statute").

The remaining 50% of the project area is within REC's electric service area. REC is building its Fiber Utility Network to replace 30-year-old microwave communications between each of its offices and key devices on its electric grid. REC's Fiber Utility Network is being installed on REC's existing infrastructure such as poles and related equipment. The design for REC's Fiber Utility Network includes additional strands of fiber within its core routes to support All Points extension of last mile FTTH to currently unserved areas within the proposed project area.

The project area includes approximately 3,155 Low or Moderate Income ("LMI") households. To determine the LMI household count, the County and APB analyzed the currently available U.S. Census data for the proposed project area by Census tracts. LMI households account for approximately 43% of all households in the proposed project area, 23% of which are considered low income and 20% are considered moderate income. The project will therefore have a significant benefit by making high quality broadband available to 3,155 LMI households, which is the total number of remaining unserved LMI households in the County.

A map of the project area is attached as Attachment 1.

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

Answer:

There are three wireline broadband providers in the County: Comcast, which has a franchise agreement with the County, Verizon and Lumen.

All Points has visited each area proposed to be served by the project to visually verify that wireline broadband does not exist at the locations in these areas

The proposed project area contains those communities and neighborhoods where Comcast has determined it is not required to complete network buildout under the thresholds in the County's franchise agreement.

The proposed project area does not contain any areas where Verizon offers fiber-optic broadband service and the County has confirmed with Verizon that Verizon does not intend to challenge this application.

The proposed project area includes areas within Lumen's footprint. Lumen has provided the County with the specific locations within its footprint where Lumen claims to offer DSL service with download speeds of 40mbps or greater.

There is no fixed wireless provider offering service in the proposed project area.

On July 15, 2021, All Points submitted a petition to DHCD to have the entire proposed project area designated as unserved by broadband under the Utility Leverage Statute. Under the DHCD guidelines for the Utility Leverage program, any provider has the ability to provide evidence that they already offer service within the proposed project area. A final determination on the petition submitted in July is pending as of the date of this application.

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

Answer:

The Maps attached in Attachment 2 demonstrate that Lumen (formerly Centurylink, Inc.) received CAF II funding to provide 10/1 broadband in areas near and within the proposed project area.

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

Answer:

Attachment 3 shows a map of the project area and the areas where other providers are the provisional RDOF winners. An estimated 1,651 locations in the project were provisionally awarded to RDOF bidders other than APB.

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

Answer:

As noted above, All Points conducted extensive field surveys in each portion of the project area to determine unserved areas. All Points visited and visually inspected the areas proposed to be served by the project to verify they are not currently served by wireline technology (cable or fiber) that is capable of providing 25/3 service.

Neither All Points nor the County were able to field-verify that any fixed wireless provider offers speeds of 25/3 in any of the areas to be served by the project. None of the locations in the proposed project area that completed the broadband survey used to confirm the proposed project area indicated the ability to subscribe to fixed wireless service of 25/3 or greater.

These areas where All Points completed its field surveys were mapped to determine the project area and compared to data available and supplied by the County.

Lumen provided the County with 997 locations within the County where it claims to offer DSL service capable of offering 40mbps download or greater. Only 458 of these locations, representing 6.3% of all locations within the project area, are locations where Lumen claims to offer qualifying DSL service. Because these locations represent less than 10% of all locations within the proposed project area, the proposed project area is unserved according to VATI guidelines.

The map of currently served areas in the County is included as Attachment 4.

Despite our extensive efforts to verify the unserved status of these areas, it is possible that a small number of locations were incorrectly identified as unserved. In the unlikely event that the Utility Leverage challenge process demonstrates that more than 10% of locations within the proposed service area are already served by broadband, the project scope will be modified by the County and All Points as required by VATI and Utility Leverage program rules.

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6. Total Passings: Provide the number of total serviceable units in the project area. Applicants are encouraged to prioritize areas lacking 10 Megabits per second download and 1 Megabits per second upload speeds, as they will receive priority in application scoring. For projects with more than one service area, each service area must have delineated passing information. Label Attachment: Attachment 5 – Passings Form.
- a. Of the total number of VATI passings, provide the number of residential, business, non-residential, and community anchors in the proposed project area. (Up to 10 points for businesses and community anchor institutions)
 - 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 10/1 mbps or less. Describe the methodology used for these projections. (up to 15 points)

Answer:

a. To determine the number of residential, business, non-residential and community anchor institutions in the proposed project area, each of the 7,253 locations in the project area was cross-referenced with parcel-specific land use data in the County's GIS database. This process resulted in 7,148 passings categorized as residential, 44 passings categorized as non-home based businesses, 741 residential passings where a home based business was located, 8 community anchor institutions, and 342 passings categorized as non-residential.

Among the business passings in the proposed project area are 107 active farms, Montpelier Food Lion, CVS Shopping Center, Montpelier Veterinary Hospital, Hollows Golf Club, Scotchtown Historic Site, Ashland Berry Farm, Ashland Roller Mill, Camp Hanover, and Cavalier Gun Club.

The community anchors in the proposed project area are Hanover Fire EMS Station 8, Hanover Fire EMS Station 2, West Hanover Volunteer Fire Department, the Old Church Community Center, the Montpelier Community Center, the Rockville Community Center, the Montpelier Branch Library, the Montpelier Center for Arts & Education.

b.

APB did not receive RDOF funding in any portion of the project area.

c.

None of the passings included in the proposed project area will require special construction costs. For the first twelve months after service is available at any location within the proposed project, All Points' standard installation fee of \$199.00 will include any length of service drop required to make service available to that location. Therefore, as All

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Points has confirmed with DHCD during the technical assistance process prior to submission of this application, all of the passings within the proposed service area will be considered serviceable units.

d.

As noted above, for the first twelve months after service is available at any location within the proposed project, All Points' standard installation fee of \$199.00 will include any length of service drop required to make service available to that location. All Points' detailed design for the project calculated the projected service drop length for all locations in the proposed project area and the average drop length used to determine the project budget is based on the weighted average drop length indicated by the project design.

e.

It is estimated that 2,322 of the passings in the proposed project area lack access to service of at least 10/1 Mbps. To determine the number of passings currently served by service of 10/1 or greater service, All Points compared each of the passings in the project to the most recent Form 477 data available from the Federal Communications Commission and conducted availability searches online.

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:

Not applicable as this is a FTTH project.

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

Answer:

The last-mile FTTH network will offer four speed tiers that are fully symmetrical: 50/50 Mbps, 100/100 Mbps, 500/500 Mbps, and 1/1 Gbps, with no data caps. The intended monthly pricing for these plans is \$59.99, \$79.99, \$99.99, and \$119.99, respectively, with a flat \$5 service fee to cover applicable taxes and FCC fees.

Customers will also have the ability to subscribe to VOIP phone service with multiple calling features and local and continental US long distance calls included for an additional \$14.99 per month.

Because the project is a FTTH network, the only locations sharing of bandwidth may occur are at a fiber concentration cabinet or at the network core. All Points has planned more than adequate capacity to consistently deliver advertised speeds to all customers.

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

Answer:

The project is a new FTTH deployment that will make FTTH service available to currently unserved locations in the County. The network includes approximately 595 miles of distribution fiber, of which approximately 42 miles consist of routes within REC's Fiber Utility Network. Approximately 441 miles will be built by All Points and approximately 112 miles will be built by Dominion pursuant to the Utility Leverage Statute. The final mileage to be constructed by Dominion is contingent of approval of Dominion's related petition to be submitted to the State Corporation Commission ("SCC") under the Utility Leverage Statute. As indicated in its letter included in Attachment 13, Tilson Technology Management, Inc. has assisted All Points with the planning and design of this network, and preparation of indicative bills of materials, and related cost estimates.

At completion, the network will include 3 upstream connection points to All Points' network core in the data center cluster in Ashburn, Virginia and 2 independent connections to All Points' redundant network core in the Cermak data center in Chicago, Illinois.

All existing and new fiber distribution infrastructure will use all-dielectric self-supporting ("ADSS") fiber cable, with AFL Telecommunications ("AFL") as the principal cable manufacturer. Because ADSS cable is fully self-supporting and requires no messenger wire, it can be installed in a single pass, resulting in lower construction costs and more rapid deployment timeframes. ADSS is optimized for deployments on electric utility poles and infrastructure and can be placed in closer proximity to conductors, which reduces pole make ready expense. The project will use cables of various strand counts, generally ranging from 24 to 288 strands, depending on the specific network segment. As indicated in the letter included in Attachment 13, AFL, APB's primary supplier of fiber optic cables, connectors, terminals, and related hardware, has allocated committed manufacturing capacity to support APB's materials requirements and specific schedule for this project.

The network will include approximately 5 fiber feeder hubs and approximately 28 fiber distribution hubs. Service drops will be made to one of approximately 1,469 fiber distribution terminals. Fiber distribution terminals will be AFL Titan Ready-to-Deploy Multipoint Terminals in multiple sizes depending on location and network requirements.

Service drops will be made using AFL Trident hardened drop cables.

All customer premises equipment, including optical network terminals and Wi-Fi internet access gateways will be from the Calix ecosystem of products.

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All network optronics will use the XGS-PON (ITU G.9807.1) architecture, which is capable of delivering 10 gigabit, symmetric service, to all end users.

The network has been designed to be scalable and expandable to meet future needs as new locations are built within the project area and as end user demands require higher bandwidth connections.

For example, throughout all distribution routes, a minimum of 12 fiber strands will be reserved to accommodate future needs. This will ensure sufficient distribution capacity so that no additional fiber routes would need to be constructed to offer service to any new locations built in the proposed project area after project completion.

At all feeder and distribution hubs, sufficient capacity has been reserved to enable the network to be upgraded to offer 10 gigabit, symmetric service, to all end users on the network in the future as consumer demands require higher bandwidth connections. All distribution terminals have been sized to accommodate additional connections in the future to accommodate new and in-fill development without requiring additional splicing.

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

Answer:

Achieving universal broadband access has been a long-term objective of the County.

In October 2019, the County's Board of Supervisors appointed a citizens committee to develop a broadband plan that would address the County's unserved areas. That Blueprint to Broadband Internet Plan (see attachment 19) was adopted in December, 2020. This Plan identified 11 strategies to achieve universal broadband coverage in the County. The County has been pursuing many of the recommendations in the Plan, including dedicating staff resources, working with regional groups, issuing a number of communication related resources, partnering with a company to design and implement a broadband solution, leveraging the County's tower infrastructure, and pursuing State, federal, and private funding to enhance broadband across the County.

In March of 2021, the County issued an RFP to select an Internet service provider to develop an engineering plan and implementation timeline to achieve universal broadband access in the County, and to provide assistance to obtaining required VATI and other grant funding to deploy the related network. After a competitive selection process, APB was selected as the County's partner to achieve universal broadband in the County.

As discussed above, the County and All Points have undertaken extensive field inspections, franchisee network review, and provider and community outreach to ensure that all remaining unserved locations in the County are included in the proposed project area. All Points' field teams visited and visually inspected all areas within the County where the incumbent cable provider is not offering service and verified that each such area is not currently served by wireline technology (cable or fiber) that is capable of providing 25/3 Mbps service. All Points' preliminary analysis was reviewed by the County and compared to County information gathered from previous studies and analysis.

All Points and the County then published a map of the proposed service area and an online survey which residents and property owners could complete to verify whether a specific location was served or unserved by broadband. The County and members of the Board of Supervisors publicized this survey through email communications and news coverage to ensure it was widely available. More than 3,000 online surveys were completed by residents and property owners and the survey data was used to refine the proposed service area and to ensure that the unserved locations in the County will be included in the proposed project.

Because this project includes all 7,235 locations in the County that remain unserved, completing the project will achieve universal broadband in the County.

11.

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Project Readiness

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

Answer:

In June of 2021, after a competitive selection process, the County selected APB as its ISP partner and the County and APB entered into a related BPA (see attachment 8), through which the County engaged APB as its broadband deployment partner to achieve universal coverage.

In June of 2021, the County, APB and Dominion entered into an MOU (Attachment 8) pursuant to which APB assumed primary responsibility for developing a VATI-eligible network that would offer FTTH service to all remaining unserved locations in the County.

From June of 2021 until the date of this application, APB and a team of senior County personnel have held routine coordination meetings to refine the proposed project.

In July and August of 2021, APB completed high-level network design for the project in collaboration with Dominion and REC, and the network design now incorporates those design consultations with Dominion and REC, including the specific routes to be constructed by Dominion and the portions of REC's network to be leveraged by APB's network. The high-level network design is now complete.

REC commenced construction of its Fiber Utility Network in late 2020 and is on schedule for completion by Q4 2022.

In July 2021, APB included the proposed project in a petition to DHD for a certification that the proposed project area is unserved for purposes of the Utility Leverage Statute. Upon receipt of DHCD's final determination regarding the Utility Leverage petition, APB and Dominion will finalize the petition to be submitted to the SCC.

In August of 2021, APB and REC agreed on the specific terms that will apply to APB's use of REC's Fiber Utility Network and commenced make-ready analysis for all fiber distribution routes proposed to be located on REC infrastructure. APB and REC have agreed on a timeframe for completing make-ready engineering and construction that will enable the project to be completed on the proposed timeframe.

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Through our shared experience achieving SCC approval of Dominion's participation in the VATI-supported Northern Neck Initiative, APB and Dominion have developed a standard final design coordination process that runs concurrently with the SCC petition process. This approach reduces costs for APB and Dominion, ensures that all information required to be submitted to the SCC is available on the required timeframes, and enables network construction to begin immediately upon SCC approval of Dominion's petitions. APB commenced final design for this project in September and will complete final design during the pendency of the SCC petition.

Dominion and REC have assigned project managers who will lead their involvement in this project.

All Points and Dominion have an agreed form of fiber lease in place for the project.

As indicated in the letter included in Attachment 13, AFL Telecommunications, APB's cable manufacturer, has allocated committed manufacturing capacity to support APB's requirements and specific schedule for this project. By involving AFL in the design and fiber technology evaluation from the beginning, APB has ensured that the project will benefit from APB's strategic partnership with AFL, including firm pricing and dedicated manufacturing capacity. Further details from bills of materials and cost estimates are provided in Attachment 13.

Dominion is anticipated to initiate contact with potentially affected property owners regarding the project and commencing discussions regarding easements and related rights in Q3 2022. Because the project has been designed to place all new fiber distribution routes within public rights of way or within areas subject to existing easements held by the electric utilities, APB does not anticipate requiring a significant number of new easements.

Dominion will also be preparing needed environmental permits for its proposed routes during the pendency of the SCC petition. Provided the SCC petition is submitted and approved on the planned timeframe, APB and Dominion will both commence network construction in Q4 of 2022.

APB will construct its last-mile infrastructure concurrently with Dominion's construction and completion of related REC routes. APB will deploy, and provision service terminals and service drop in conjunction with Dominion's construction schedule so that end users can be connected to the network as soon as there is distribution fiber in place to connect their location to APB's network core.

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Once construction has commenced, APB will be able to rapidly deliver service to customers who have pre-registered. The same survey that APB and the County made available for property owners to confirm whether their location was unserved by broadband also provided the option for owners of locations within the proposed project area to subscribe for updates regarding the project and to request to be contacted in advance of service availability. More than 3,000 online surveys have been completed by residents and property owners who have provided their contact information, pre-registered for service and requested to be contacted when service becomes available at their location.

To ensure the network is successfully and promptly used by presently unserved locations, APB will begin marketing the network to potential customers as soon as the SCC has ruled on the petition.

The County will serve as fiscal agent and administer VATI funds for the project. In accordance with the terms of the MOU that is already in place, upon receipt of a VATI award the County and APB will enter into a definitive agreement reflecting the terms of this application.

Because this project involves the coordination between APB and two electric utility providers, requires substantial electric utility infrastructure to be in place before last-mile deployments can begin, and requires that Dominion obtain SCC approval, substantial completion of the project will require 24 months from grant award and SCC approval.

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:

Hanover County has not received any funding from VATI grants.

All Points received a VATI grant in the 2021 application cycle for another project that will achieve universal FTTH access within a project area in four counties on Virginia's Northern Neck (the "Northern Neck Initiative"). Similar to the project proposed in this application, the Northern Neck Initiative was a partnership between All Points, Dominion, an electric cooperative (the Northern Neck Electric Cooperative) and participating counties, and Dominion's participation in the Northern Neck Initiative also required approval from the State Corporation Commission.

The SCC petition for approval of Dominion's participation in the Northern Neck Initiative was submitted in September of 2020, and the SCC's final order approving that project was issued in March of 2021.

Construction of fiber distribution routes for the Northern Neck Initiative commenced in July of 2021 and construction is now underway. Customer installations are on schedule to commence in December 2021, and the overall project is on schedule for completion in the third quarter of 2023.

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

Answer:

As set forth in Attachment 9, the total cost of the proposed project is \$60,206,107 and this application is requesting VATI funds in the amount of \$14,430,100 representing 24% of the total project cost. All Points will be responsible for providing \$24,311,007, representing 40.4% of the total project cost. The County is contributing \$15.84 million, representing 26.3% of the total project cost. Dominion is anticipated to invest \$5.625 million, representing 9.3% of total project cost, pending SCC approval of Dominion's participation in the project.

The County's commitment of \$15.84 million is reflected in the County's letter included in Attachment 10.

All Points's lead equity sponsor, Searchlight Capital Partners, has committed all required financing to complete the project, as demonstrated in the letter included in Attachment 10.

Dominion is providing support for the project through the Utility Leverage Program. Dominion has entered into an MOU with All Points and the County to submit its Utility Leverage Petition for this project (see Attachment 8) and has confirmed its participation pending final approval from the SCC (see Attachment 10). The project budget includes only that portion of Dominion's anticipated investment that will be allocated to broadband deployment.

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:

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The County has previously invested \$75,000 to engage All Points to assist the County by comprehensively identifying all areas in the County that are not currently served by broadband, and to fund the development of the high level design for this project which forms the basis of this application.

The County has provided extensive in-kind support to the planning process that resulted in the proposed project. Since June of 2020, senior County personnel have participated in routine coordination meetings with the APB project team. The County has also agreed to provide all required support for the SCC Petition process on an in-kind basis and at no cost to the project.

The County will also administer the VATI grant funds and support project construction without charging administrative costs to the project.

The County will also assist All Points with all required permitting and easements at no cost to the project, providing additional leverage in the form of approximately \$100,000 in cost savings for the project.

All Points has dedicated a full-time sales manager who will oversee all marketing and adoption activities within the County and APB has allocated a \$400,000 marketing budget for the project in its first two years (which is not included in the project budget set forth in this application).

Dominion and REC have also participated in the planning process at no cost to the project.

By providing APB with access to its Utility Fiber Network, REC is providing leverage of in the form of \$1,452,500 in cost savings to the project.

Support from the County and electric utility partners will continue through final design and construction. The relevant County supervisors will participate in joint marketing events and public meetings to market the project and encourage adoption by their residents. Dominion and APB will each incur significant costs related to the SCC Petition Process, including legal fees and other related costs that are not included in the project construction costs.

The project will leverage APB's existing network core and related data-center infrastructure, as well as All Points's customer service, support, and billing functions.

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Hanover County 2022 Accelerated Universal Fiber Deployment Initiative

15. Marketing: Describe the broadband adoption plan.

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

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

Answer:

a.

APB has already performed substantial marketing activities. The same survey that APB and the County made available to determine broadband availability provided the option for locations within the project area to subscribe for project updates and request to be contacted in advance of service availability. To date, more than 3,000 surveys were completed by residents who provided their contact information, pre-registered for service and requested to be contacted when service is available.

APB prepared an extensive marketing campaign to ensure that customers are connected to the network as soon as it is available. See Attachment 17.

APB has dedicated a sales manager to oversee marketing and adoption activities and allocated a \$400,000 marketing budget for the project in its first two years. This marketing budget is not included in the VATI project budget.

APB will also leverage REC customer marketing channels to reach potential customers, including direct communications to REC's members via email and mail, and use of REC's magazine, website and social media. All marketing will direct potential customers to APB's Crowd Fiber tool to preregister for service and to inform APB how to be contacted. APB will use this tool to accept pre-registrations from customers and to keep those customers informed regarding the deployment schedule, so that these customers will be ready to subscribe and receive service as soon as it is available.

APB and the County will conduct media events to keep media outlets informed about the project and generate media coverage to reinforce APB's direct marketing activities. As each area of the network is nearing completion, APB will use the preferred contact method selected by each pre-registered customer to inform them of their service availability date and to schedule installations.

All Points will provide and make resources available on the best practices from the National Digital Equity Center, the National Digital Inclusion Alliance, and NTIA's BroadbandUSA toolkits. Information regarding All Points' Digital

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Academy is described below and in Attachment 18.

90 days before service is available at a specific location, APB will send an additional series of direct mail to potential customers that have not pre-registered for service, and leverage REC's customer marketing channels to inform REC's members that have not pre-registered about the availability of service.

APB's marketing materials will also highlight APB's commitment, for the first 12 months after it is available, to provide service to any serviceable unit (regardless of service drop length) for the same one-time installation charge of \$199.00. This offering is projected to increase take rates.

In addition, All Points will continue to use its website and social media channels, billboards, and public meetings in conjunction with the County to market the project. As last-mile construction is completed in each area of the project, All Points will place door hangers at each serviceable location and yard signs in each serviceable neighborhood.

The County has also developed a Marketing Plan for its overall Connect Hanover Initiative (see Attachment 19).

As part of its Connect Hanover marketing plan, the County will distribute project information in its semi-annual Hanover Review print newsletter, which is distributed to 45,000 homes and business in the County. The County will also leverage its strong relationships with local newspapers to generate continue coverage and interest in Connect Hanover and this specific project. The County will also distribute an informational flyer regarding Connect Hanover and this project to various community centers and local libraries.

The County has already launched a series of community meetings to publicize the project and to ensure that all citizens know how to take advantage of Internet access and to subscribe to service, including by driving preregistrations to All Points' Crowd Fiber tool. The first of these meetings was held on September 2, 2021 at the Old Church Community Center, and was attended by 60 County residents. Future community meetings regarding the project are planned to be held at the Montpelier Community Center, Rockville Community Center and County Administration Building.

To project take rates for this project, a third party was commissioned to perform a residential survey and conjoint analysis, which was completed in June of 2021. Redacted excerpts from this third party analysis are attached as part of Attachment 17. As demonstrated in the attached excerpts, the analysis concluded that APB could achieve market share of broadband subscribers of 75%, 71%, and 95%, respectively, in various portions of the proposed project area, depending on whether the options currently available to consumers are (a) satellite and DSL, (b) DSL and fixed wireless, or (c) only satellite. APB has applied these projections across the proposed project to estimate a take rate of

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75% for the project.

b.

All service offerings made available through this project will be eligible for the federal EBB program and future affordability programs available to LMI households.

For the first 12 months after service is available, APB will provide service drops to all passings, regardless of drop length, for the same fixed installation fee of \$199.

In order to ensure that high quality broadband is available to all currently unserved locations that are within the proposed project area, All Points has committed to maintain the 50/50 mbps service tier at the fixed price of \$59.99 for the life of the project. This rate will be indexed to inflation and will not increase in real terms.

The County's marketing plan (Attachment 19) is designed to educate citizens on options for Internet service providers and how to subscribe to these services.

All Points has developed a Digital Inclusion Academy through Google for Education (see Attachment 18), based on best practices and recommendation from the National Digital Equity Center, the National Digital Inclusion Alliance, and NTIA's BroadbandUSA toolkits, which includes courses such as "Use Digital Tools for Everyday Tasks", "Avoid Online Scams", "Build Healthy Digital Habits", "Edit Your Resume", and others of a similar nature. All Points will offer free access to this Academy.

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

Answer:

The following table depicts key members of the project team from the County, All Points, Dominion and REC:

Key Individual

Roles and Responsibilities

Previous Experience

Jimmy Carr

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CEO, APB

See attachment 20

Sean Flora

Director of Fiber Construction, APB

See attachment 20

Brandon Ogilvie

CFO, APB

See attachment 20

Tom Innes

SVP of Public-Private Partnerships, APB

See attachment 20

Chuck Hogg

SVP of FTTH Deployments, APB

See attachment 20

Darren Glatt

Partner and Co-Head of Infrastructure Investing, Searchlight Capital Partners

See attachment 20

Ajit Pai

Partner, Searchlight Capital Partners

See attachment 20

Ed Diggs

Manager, Rural Broadband, Dominion

See attachment 20

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Mark Ponton

Director of Broadband and Fiber Services, Rappahannock Electric Cooperative

See attachment 20

Frank Harksen

Deputy County Administrator, Hanover County

See attachment 20

Kevin Nelson

IT Director, Hanover County

See attachment 20

Additional information on the project team is included in Attachment 20.

The County has significant experience in the successful management of grant projects. In FY21 alone, the County processed nearly \$40 million in grant funds for projects in many categories including the CARES Act, road construction, drug addiction treatment programs and many more. The County is an annual recipient of most of these grants, which is indicative of the scope of grant management Hanover routinely handles. Grant tracking and reporting processes are continually reviewed for improvements and efficiencies. Grant reporting to both state and federal agencies is a standard business activity for Hanover and Hanover has consistently received positive results on annual audits. Grants management and acceptance is included the financial policies adopted by the County's Board of Supervisors.

All Points Broadband is a highly successful rural broadband provider that operates last-mile fiber, fixed-wireless, and hybrid-fiber-wireless networks serving locations in Virginia, West Virginia, Maryland, and Kentucky. All Points has grown through acquisitions and organic network expansions and been named to Inc. magazine's list of America's 5000 fastest-growing companies in each of the last four years. All Points has successfully managed numerous rural broadband deployments in partnership with rural Counties, and it has managed the development of a similar multi-partner broadband initiative on the Northern Neck.

The company's senior managers hold leadership positions in our national industry association. All Points CEO is a member of Virginia's Broadband Advisory Council and has testified before the US Senate and Virginia General Assembly on rural broadband deployment strategies.

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Searchlight Capital Partners is APB's lead equity sponsor. Searchlight is a private investment firm with over \$9 billion of assets under management with extensive expertise investing in the global telecommunications and media sectors. Over the last two years, Searchlight has invested in excess of \$1.25 billion in FTTH in the United States, making Searchlight the number one investor in domestic FTTH infrastructure in that period. And as of today, through its investments in All Points, Consolidated Communications and Ziplly Fiber, Searchlight is the fourth largest builder of FTTH passings in America. All Points benefits from the tremendous volume purchasing arrangements for Searchlight's portfolio companies, which ensure availability of required supply and the best available pricing.

Searchlight has deep familiarity with broadband markets and the associated competitive dynamics in the broader United States. Searchlight's leadership, both through their time at Searchlight and at previous investment firms, have also acquired multiple decades of experience investing specifically in fiber-based broadband businesses in the U.S. and globally, which has made it a core competency and strategic focus for the firm.

Additional letters of support are included as Attachment 11.

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17. Project Budget and Cost Appropriateness

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

Answer:

As set forth in Attachment 12, the total cost of the proposed project is \$60,206,107 and this application is requesting VATI funds in the amount of \$14,430,100 million representing 24% of the total project cost. All Points will be responsible for providing \$24,311,007 million, representing 40.4% of the total project cost. The County is contributing \$15.84 million, representing 26.3% of the total project cost.

Dominion's anticipated investment of \$5.625 million includes only the portion of Dominion's cost that will be allocated to broadband.

The Derivation of Costs divides the project into the following categories: Final Design and Engineering, Project & Construction Management, Headed/Central Office, Field Network Equipment, Utility Middle Mile, Aerial Make Ready & Construction, Underground Construction, Fiber Drop Construction, Subscriber Equipment & Installation Labor, Other Capex and Construction Bond.

To develop the project budget, All Points prepared a high-level design for the project and developed an indicative bill of materials based on that design.

As part of APB's design and cost estimation process, All Points engaged Tilson Technology Management, Inc. ("Tilson") to supplement APB's internal engineering and design resources and to assist in the development of the high-level design and related bill of materials and cost estimates. Tilson is one of America's leading providers of consulting, design and construction management services to the telecommunications industry. As described in Tilson's letter included in Attachment 13, the cost estimates that form the basis of the project budget are based on Tilson's bill of materials and related cost estimates and reflect current pricing available to All Points.

All Points then obtained current pricing for each item on the bill of materials from its primary vendors, including AFL, APB's primary supplier of fiber optic cables, connectors, terminals, and related hardware. As described in AFL's letter included in Attachment 13, AFL provided the pricing used for all relevant cost categories included in the project budget and AFL has allocated committed manufacturing capacity to support APB's materials requirements and specific schedule for this project.

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

- a. Total VATI funding request

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

Answer:

a.

This application is requesting VATI funds in the amount of \$14,430,100.

b.

7,235

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

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

- a. Businesses, community anchors, or other passings in the proposed project area that will have a significant impact on the locality or region because of access to broadband.

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

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

Answer:

a.

The project area includes 44 passings that are non-home based businesses and 8 community anchor institutions.

Among the business passings in the proposed project area are 107 active farms, Montpelier Food Lion, CVS Shopping Center, Montpelier Veterinary Hospital, Hollows Golf Club, Scotchtown Historic Site, Ashland Berry Farm, Ashland Roller Mill, Camp Hanover, and Cavalier Gun Club.

The community anchors in the proposed project area are Hanover Fire EMS Station 8, Hanover Fire EMS Station 2, West Hanover Volunteer Fire Department, the Old Church Community Center, the Montpelier Community Center, the Rockville Community Center, the Montpelier Branch Library, the Montpelier Center for Arts & Education.

b.

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This project is a partnership between the County, a last-mile ISP, and two electric utilities, and is following the successful model developed by All Points and Dominion for the Northern Neck Initiative that was also supported by VATI funding.

This project does not take an incremental, "cherry picking" approach. Instead, it represents the County's comprehensive strategy for achieving universal broadband access in the County.

The project leverages the Utility Leverage Statute with an investor-owned utility and the participation of an electric cooperative (REC) to simultaneously upgrade and harden Virginia's electric grid while making last-mile FTTH available to all remaining unserved locations in the County. Pursuing these two objectives simultaneously reduces aggregate costs for all the partners and benefits the entire community. Achieving universal broadband access throughout the County will only be possible if this project is leveraged in coordination with Dominion's ongoing fiber-deployment activities and with REC's deployment of its Fiber Utility Network.

The project also involves the partnership between the County and the Pamunkey Regional Library, which has a full digital literacy program that includes providing public wireless access, mobile hotspots, and other digital equity and inclusion services.

The project also involves the partnership between the County's Connect Hanover Initiative and the County's school system, that provides an on-line educational program that includes issuance of tablets to all students in grades 3-12 and to all teachers in the County school system.

c.

The project area includes approximately 3,155 LMI households, which account for approximately 43% of all households in the project area. This project will make broadband available at all remainin unserved LMI households in the County.

All service offerings made available through this project will be eligible for the federal Emergency Broadband Benefit program and future affordability programs available to LMI households.

For the first 12 months of availability, APB will provide service drops to all locations within the project area, regardless of drop length, for the same fixed installation fee of \$199.00.

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In order to ensure that high quality broadband is available to all currently unserved locations that are within the proposed project area, All Points has committed to maintain the 50/50 mbps service tier at the fixed price of \$59.99 for the life of the project. This rate will be indexed to inflation and will not increase in real terms.

The County's Marketing Plan for its overall Connect Hanover Initiative (Attachment 19) is designed to educate citizens on the Connect Hanover initiative, their current and future options for Internet service providers, reporting services and plans offered by current providers and how to subscribe to these services, and providing information about the status of the project for universal broadband described in this application.

Hanover County is a member of the Pamunkey Regional Library, which will be a partner in the Connect Hanover Initiative and has a full digital literacy program that includes providing public wireless access, mobile hotspots, and other digital equity and inclusion services.

APB has developed a Digital Inclusion Academy through Google for Education (see Attachment 18), based on best practices and recommendation from the National Digital Equity Center, the National Digital Inclusion Alliance, and NTIA's BroadbandUSA toolkits, which includes courses such as "Use Digital Tools for Everyday Tasks", "Avoid Online Scams", "Build Healthy Digital Habits", "Edit Your Resume", and others of a similar nature. All Points will offer free access to this Academy.

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20. Additional Information

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

Label Additional Attachments as:

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

Answer:

N/A

Attachments:

Map(s) of project area, including proposed infrastructure

Attachment1ProjectAreaMapHanover914202145426.pdf

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

Attachment2DocumentationonFederalFundingAreaHanover9122021113304.pdf

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

Attachment3RDOFAwardedAreasincludedinVATIApplicationHanover914202145741.pdf

Documentation that proposed project area is unserved based on VATI criteria

Attachment4DocumentationUnservedAreaVATICriteriaHanover914202142422.pdf

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Passings Form (Use template provided)

Attachment5PassingsFormHanover914202153922.docx

Propagation Map if Wireless Project

Attachment6PropagationMapWirelessProjectonly9122021113312.pdf

Timeline/Project Management Plan

Attachment7TimelineProjectManagementPlanHanover914202154004.pdf

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

Attachment8MOUBetweenCountyandCoApplicantHanover913202185902.pdf

Funding Sources Table (Use template provided)

Attachment9FundingSourcesTableHanover914202152209.pdf

Documentation of Match Funding

Attachment10DocumentationofMatchFundingHanover914202154035.pdf

Letters of Support

Attachment11LettersofSupportHanover913202175600.pdf

Derivation of Cost/Project Budget (Use template provided)

Attachment12DerivationofCostsHanover914202153800.pdf

Documentation of Supporting Cost Estimates

Attachment13DocumentationofSupportingCostEstimatesHanover914202153846.pdf

Two most recent Form 477 submitted to the FCC or equivalent

Attachment14TwoMostRecentForm477sRedacted9122021113322.pdf

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

Attachment15PointsandPollygonShaprefilesHanover914202154630.zip

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Hanover County 2022 Accelerated Universal Fiber Deployment Initiative

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

Attachment16RSSIProjectionShapefiles9122021113336.pdf

Optional

Attachment17MarketingPlanHanover913202145939.pdf

Optional

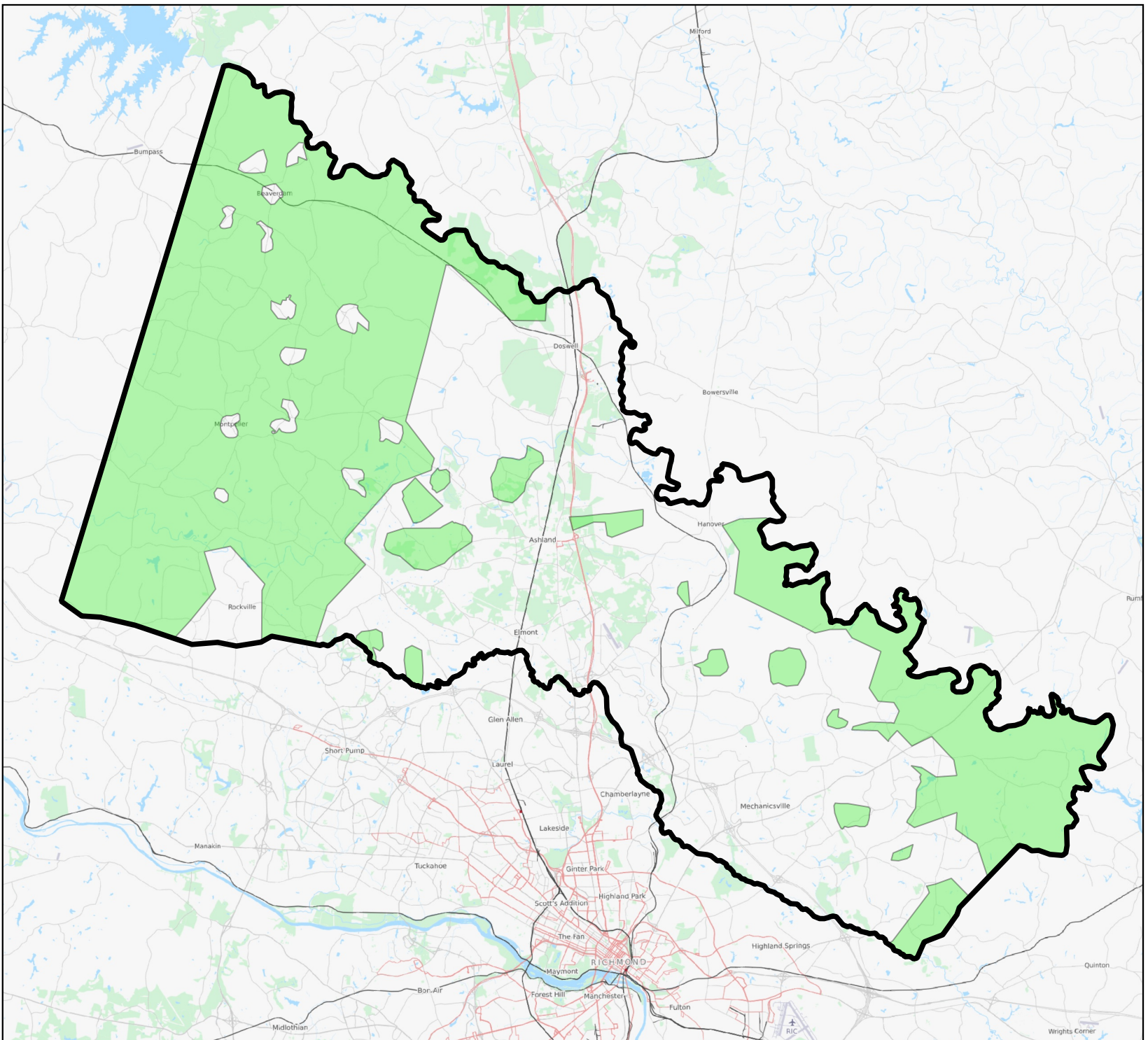
Attachment18AllPointsBroadbandDigitalInclusion9122021113345.pdf

Optional

Attachment19HanoverBlueprinttoBroadbandandConnectHanoverMarketingPlan9142021123725.pdf



Optional

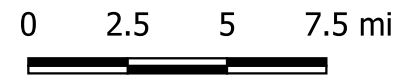
Attachment20ProjectManagementTeamHanover914202110047.pdf



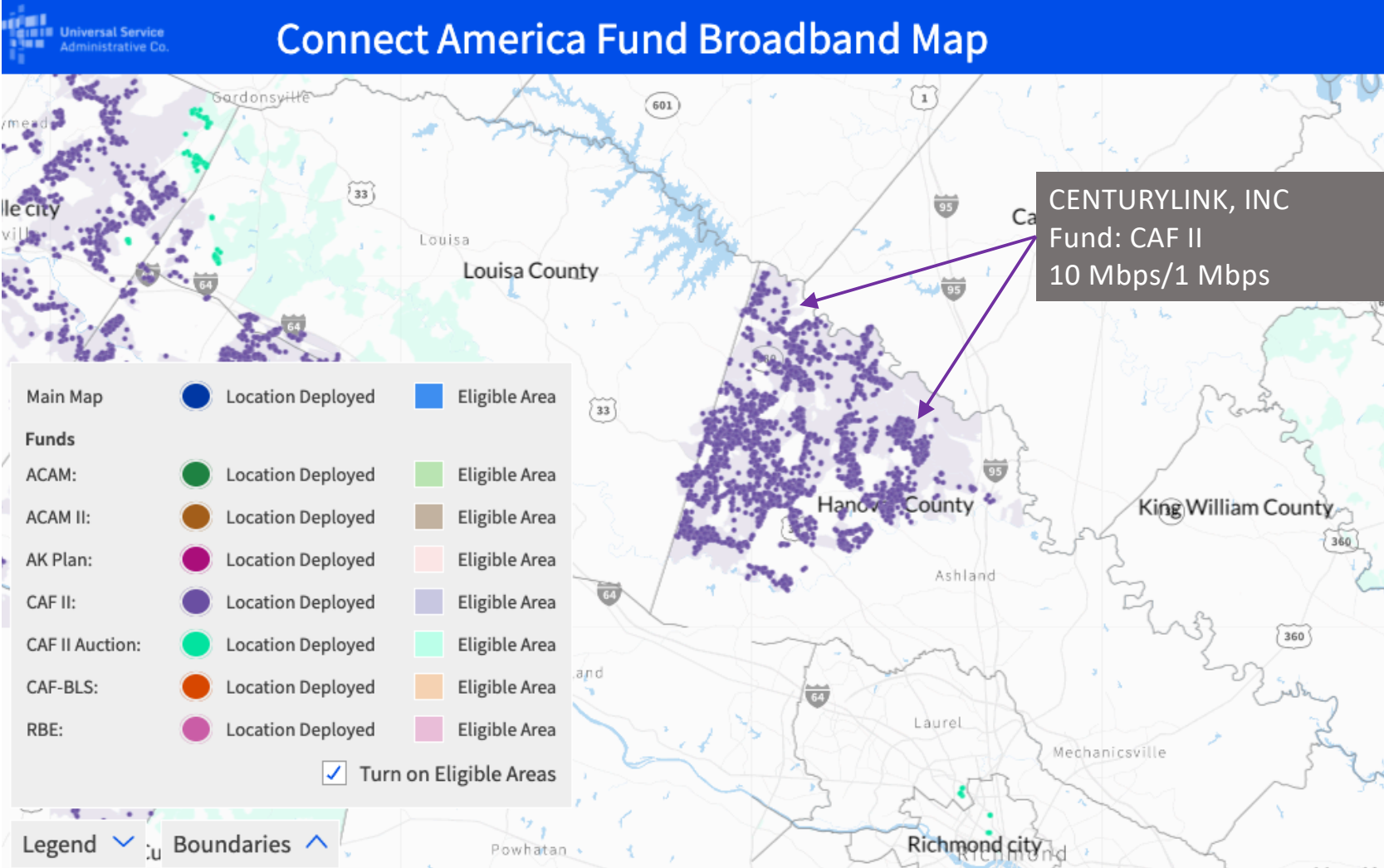
Hanover County, VA

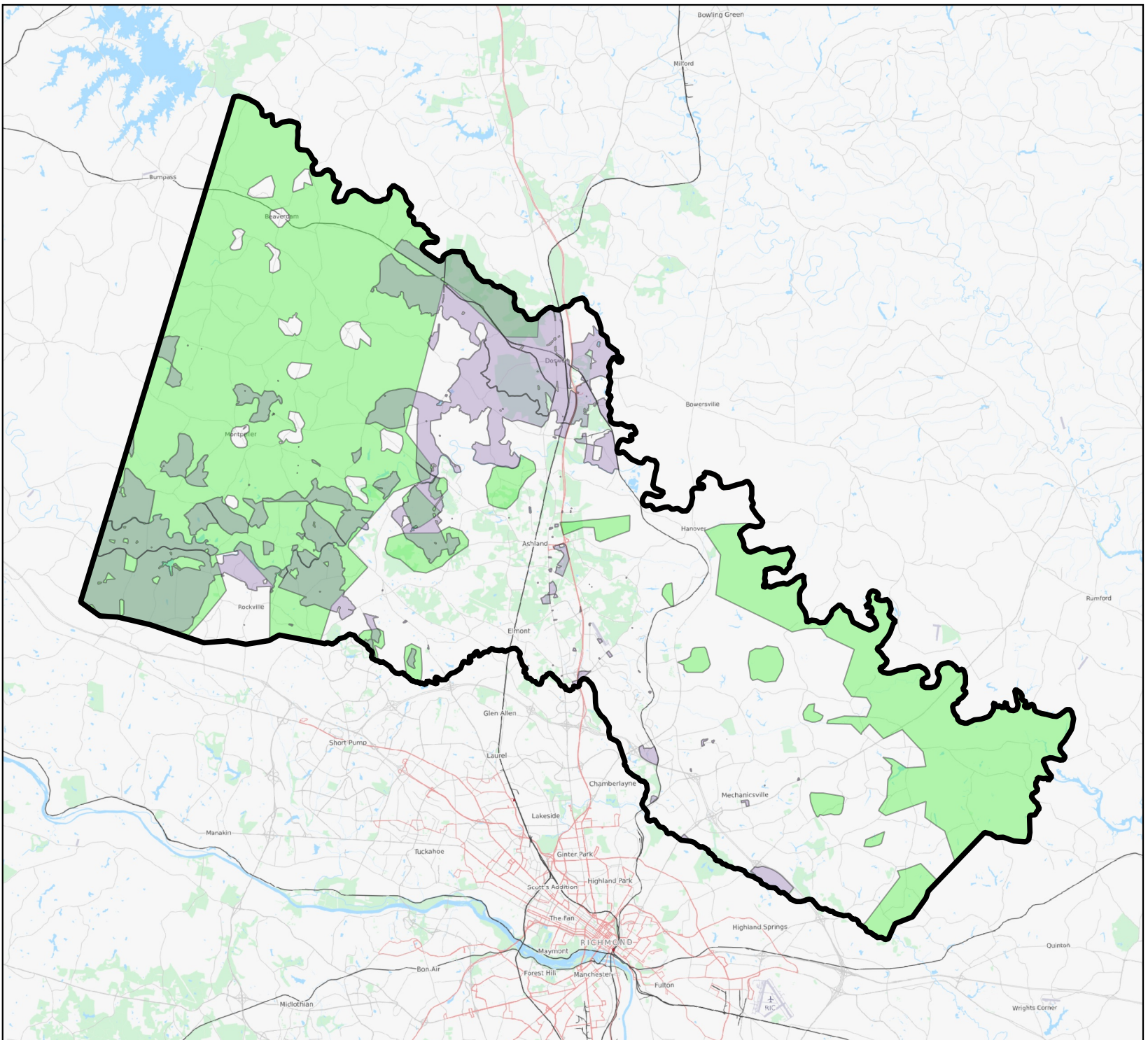
Legend

-  Project Area
-  County border



Attachment 2 – Documentation of Federal Funding – Hanover County





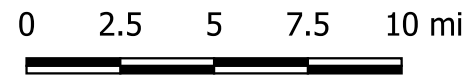
Hanover County, VA

Legend

-  RDOF
-  Project Area
-  County border

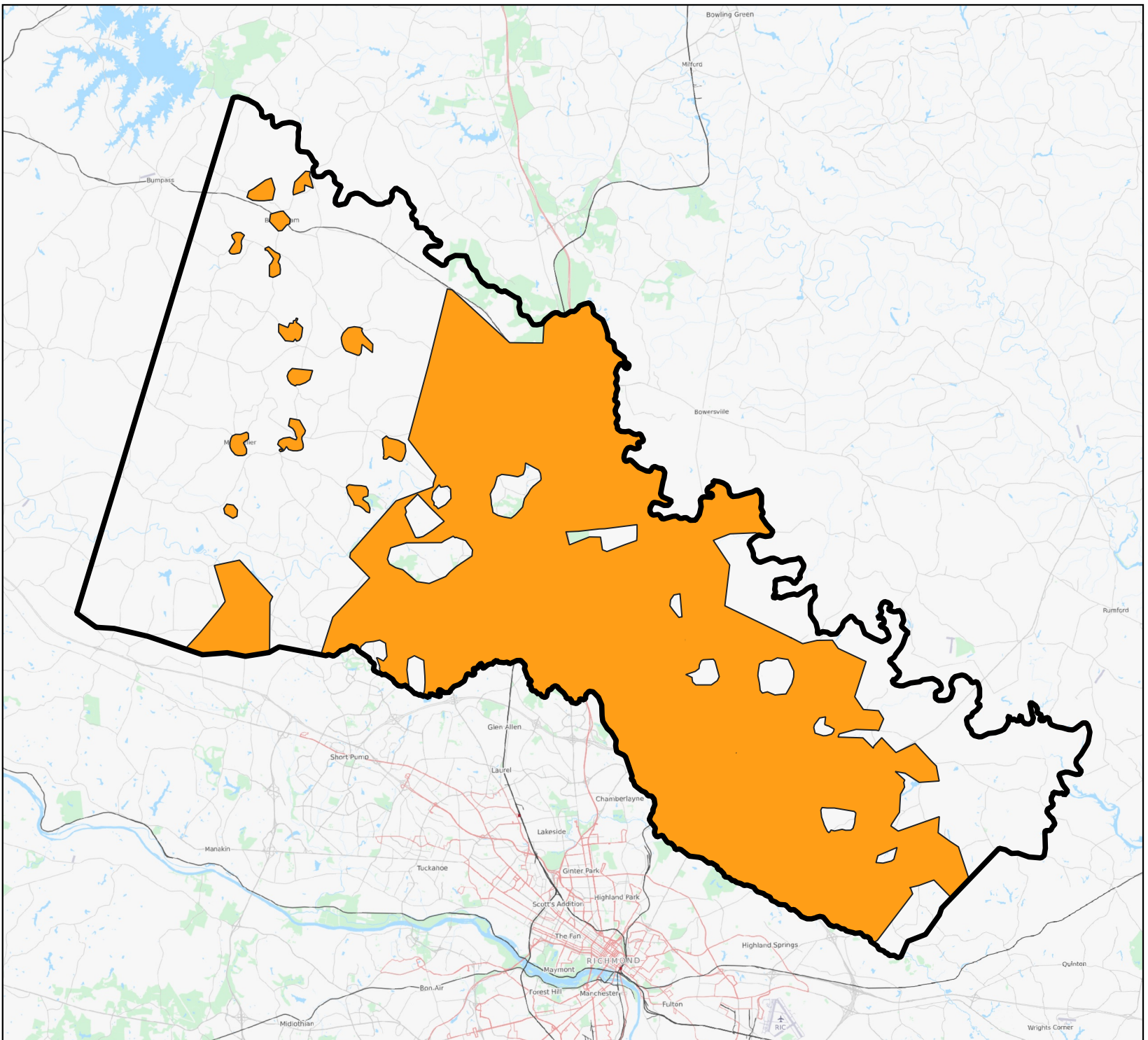
1. This RDOF area map supplements Attachment 2.

2. Co-applicant is not the RDOF awardee in these areas.





Attachment 3 - RDOF-Awarded Areas Locations & Passings Table

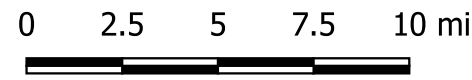
County	RDOF-Awarded Census Block Group ID	Locations within In Census Block Group	Estimated Passings in RDOF awarded areas within the VATI application area (by County)
Hanover	510853202003	337	
Hanover	510853203002	573	
Hanover	510853201002	571	
Hanover	510853202001	116	
Hanover	510853206022	38	
Hanover	510853212021	9	
Hanover	510853206021	40	
Hanover	510853210023	11	
Hanover	510853208011	42	
Hanover	510853203001	263	
Hanover	510853212022	5	
Hanover	510853201001	344	
Hanover	510853208031	3	
Hanover	510853202002	200	
Hanover	510853209001	5	
Hanover	510853206013	9	
Hanover	510853206011	3	
Hanover	510853204001	8	
Hanover	510853209004	16	
Hanover	510853205003	256	
Hanover		2849	1651



Hanover County, VA

Legend

-  Served Area
-  County border



2022 Virginia Telecommunication Initiative (VATI) Passing Form

Type of Passings	Total Number of Passings in the Project Area ¹	Passings in the Project Area, without Special Construction Costs Required ²	Passings with Special Construction Costs budgeted in the Application ³	Number of Passings with Speeds at 10/1 or below in Project Area ⁴
Residential	7148	7148	NA	2294
Businesses (non-home based)	44	44	NA	8
Businesses (home-based)	741	741	NA	283
Community Anchors	16	28	NA	14
Non-residential	27	15	NA	15
Total	7235	7235	NA	2322

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.

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

²The 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.

³The 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.

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

Definitions

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

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

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

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

Attachment 6 – Propagation Map (Wireless Projects only)

-This page intentionally left blank as this is not a Wireless Project-



**ALL POINTS
BROADBAND**
Live Connected.



**Rappahannock
Electric Cooperative**
A Touchstone Energy® Cooperative 

June 4, 2021

Hanover County, Virginia
Finance and Management Services Department / Purchasing Division
7507 Library Drive
PO Box 470
Hanover, Virginia 23069-0470

RE: Response of All Points Broadband to RFP # 21-02-2970SR

Dear Sirs:

Dominion Energy Virginia (“Dominion”) and All Points Broadband (“All Points”) are actively pursuing opportunities to expand broadband service pursuant to Virginia Code § 56-585.1:9 (the “Broadband Statute”) and are excited that our proposal to partner with Hanover County has been short listed. Our intention is to develop a fiber-optic network that will offer service to all of the County’s remaining unserved locations and otherwise satisfy the County’s objectives.

Dominion and All Points have active fiber-to-the-home broadband deployment projects leveraging the Broadband Statute underway in nine Virginia Counties. Most of these partnerships also include the participation of an electric cooperative, which is critical for developing a comprehensive solution. We are pleased that the Rappahannock Electric Cooperative (“REC”) has agreed to collaborate with All Points and Dominion to further our shared vision of universal fiber-to-the-home access for all of Hanover’s unserved areas. Under our model, All Points will serve as the County’s turn-key project manager and be the last-mile Internet service provider. Dominion and REC would support All Points’ deployment through the provision of middle-mile access.

We are excited about the prospect of working with Hanover County and other partners to achieve universal fiber-to-the-home access. Thank you for your consideration.

Sincerely,

Edward H. Diggs
Rural Broadband Program Manager
Dominion Energy Virginia

James G. Carr
Chief Executive Officer
All Points Broadband

Mark Ponton
Director Broadband Fiber Services
Rappahannock Electric Cooperative

**HANOVER COUNTY, VIRGINIA
STANDARD CONTRACT**
Contract Number 21-02-2970

This contract entered into this 28th day of June, 2021 by All Points Broadband Partners, LLC, hereinafter called the "Contractor" and Hanover County, Virginia, a political subdivision of the Commonwealth of Virginia, hereinafter called the "County".

WITNESSETH that the Contractor and the County, in consideration of the mutual covenants, promises and agreements herein contained, agree as follows:

SCOPE OF SERVICES: The Contractor shall provide the services to the County as set forth in the Contract Documents.

PERIOD OF PERFORMANCE: The date shown above through December 31, 2030.

The Contract Documents shall consist of:

- 1) This signed form;
- 2) The Contractor's negotiation letter dated June 8, 2021;
- 3) The Contractor's proposal dated April 27, 2021;
- 4) Request for Proposals 21-02-2970SR dated March 24, 2021.

All of which documents are incorporated herein.

IN WITNESS WHEREOF, the parties have caused this contract to be duly executed intending to be bound thereby.

CONTRACTOR:
DocuSigned by
 By: James Carr
 Title: CEO

COUNTY:
DocuSigned by
 By: Steven Rusch
 Title: Purchasing Division Director

This public body does not discriminate against faith-based organizations

BROADBAND PARTNERSHIP AGREEMENT

This Broadband Partnership Agreement (“Agreement”) dated as of the date last set forth below, is entered into by and between Hanover County, Virginia (“County”) and All Points Broadband Partners, LLC (“APB”). County and APB are each a “Party” and collectively the “Parties”.

WHEREAS, the COVID-19 pandemic has caused significant disruption to the County’s customary modes of operation, including by significantly increasing the need to ensure that County employees can conduct business via teleworking and other remote means;

WHEREAS, the County recognizes the critical importance of ensuring universal broadband access for all of the residents and businesses of the County in order to support economic development, educational advancement, and quality of life in the County;

WHEREAS, the County desires to engage a broadband deployment partner to develop and execute a comprehensive strategy for achieving universal broadband access for all residents and businesses in the County;

WHEREAS, APB responded to RFP #21-02-2970SR (the “RFP”) issued by the County;

WHEREAS, APB provided the County with its response to the RFP and such supplemental information as requested by the County (collectively, the “RFP Response”); and

WHEREAS, the County has elected to engage APB pursuant to the RFP.

NOW THEREFORE, the County and APB agree as follows.

1. Contract Documents. The Contract Documents consist of:
 - a. The Standard Contract Form executed by APB as of the date hereof;
 - b. APB’s negotiation letter dated June 8, 2021;
 - c. This Agreement;
 - d. The RFP Response; and
 - e. The RFP

Where the terms and provisions of this Agreement vary from the terms and provisions of the other Contract Documents, the terms and provisions of the other Contract Documents shall prevail over this Agreement.

The Contract Documents set forth the entire Agreement between the County and APB. The County and APB agree that no representative or agent of either of them has made any representation or promise with respect to this Agreement which is not contained in the Contract Documents, and that all terms and conditions with respect to this Agreement are expressly contained herein.

2. Engagement of APB as Broadband Partner. The County engages APB as its primary broadband deployment partner to pursue one or more broadband deployment projects for

all of the areas of the County that are currently underserved or unserved by broadband with the objective of developing and implementing a strategy for achieving universal broadband availability in the County, securing the participation of Dominion Energy Virginia (“Dominion”) pursuant to Virginia Code § 56-585.1:9 (the “Broadband Statute”) in the implementation of such strategy, obtaining state and federal grant funding to offset the costs of executing such strategy, and building, operating and maintaining new broadband infrastructure in the County.

3. Broadband Planning Scope of Work. APB shall deliver those planning and feasibility services described in the RFP Response (the “APB Services”). Without limiting the foregoing, the key milestones and indicative timeframes for such activities are set forth in Exhibit A. For the avoidance of doubt, APB will not be providing design or construction services to the County; rather, APB will undertake any design and construction activities independently and on its own account.
4. Broadband Service Objectives. In performing the APB Services, APB shall pursue deployments of gigabit-capable, fiber-to-the-home networks.
5. Engagement of Partners. APB has recruited Dominion as one of its deployment partners in the County. APB will also engage with other potential deployment partners, including Rappahannock Electric Cooperative, with the objective of leveraging such partnerships to achieve universal fiber-to-the-home access in all currently unserved areas of the County.
6. Regular Planning Meetings. The Parties will designate a “Management Committee” comprised of relevant County personnel and senior management from APB, which management committee shall hold meetings no less than quarterly (“Status Meetings”) to review the status of APB’s milestones, and to discuss future steps and milestones related to the APB Services. At each Status Meeting, APB will present a written report of its activities and progress against milestones.
7. Information Sharing and In-Kind Support for Grant Applications and Regulatory Proceedings. Upon request from APB, the County agrees to provide APB with all relevant information in its possession that will facilitate APB’s provision of the APB Services. The County agrees to designate one point of contact on the County’s GIS team to serve as the primary interface for APB’s project team. The County further agrees to provide reasonable and customary in-kind support to APB in the development of grant applications and the advancement of regulatory proceedings related to the APB Services.
8. Deployment and Operation of Broadband Networks. APB will be solely responsible for building, operating and maintaining any new broadband infrastructure that is developed through the APB Services. Aside from the specific fees and in-kind assistance described in this Agreement, the County shall not have any further obligation to provide local matching funds or other financial support for deployment activities (collectively, “Local Match”), unless such Local Match is specifically agreed to by the County in writing.

9. Fees for the APB Services. In exchange for the APB Services, the County agrees to pay APB the “Planning Services Fees” in the amount of seventy-five thousand dollars (\$75,000). The Planning Services Fees shall be paid quarterly in arrears in four equal installments of eighteen thousand, seven hundred and fifty dollars (\$18,750).

10. Term. The initial phase of this Agreement will be twelve months, commencing on the last date set forth below. At the conclusion of the initial phase, this Agreement automatically renew on a quarterly basis on the same terms, until such time as (a) the Parties agree to modify this Agreement, or (b) the County elects to terminate tthis Agreement on no less than 60 days notice. If not previously amended or terminated, this Agreement shall automatically expire on December 31, 2030.

[SIGNATURE PAGE FOLLOWS]

WITNESSETH the following signatures:

HANOVER COUNTY, VIRGINIA

DocuSigned by:

By: Steven Rusch
DBBB5AFF3957482

Its: Purchasing Division Director

Date: 6/28/2021

ALL POINTS BROADBAND PARTNERS, LLC

DocuSigned by:

By: James Carr
JAMES G. CARR
James G. Carr, Chief Executive Officer

Date: 6/28/2021

EXHIBIT A

Key Milestones

Milestone	Start Month	Complete Month
Execution of MOU with Dominion	1	1
Unserved / Underserved Locations Field Inventory and Verification	1	3
Identification and Prioritization of Public Support Mechanisms	1	3
Route Identification and Project Scoping with Dominion	1	3
Route Identification and Project Scoping with REC	1	3
Complete High-Level Network Design	3	4
Preparation of SCC Petition Materials	4	6
Prepare and Submit Public Support Mechanism Applications on an Ongoing Basis	4	12
Submission of SCC Petition	6	6
Coordination and Prosecution of SCC Petition	6	12
Low-Level Network Design	6	9
Easement Acquisition	6	12
Utility Make-Ready Pole Attachment and Approval Process	9	12
Final SCC Approval	12	12
Network Construction Commences	12	TBD

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (this “Memorandum”) is made effective as of June 28, 2021 (the “Effective Date”), by and between Virginia Electric and Power Company dba Dominion Energy Virginia, a Virginia public service corporation (“Dominion”), All Points Broadband Partners, LLC, a Virginia limited liability company (“All Points”), and Hanover County, Virginia (the “County”). Dominion and All Points are the “Organizing Parties”. Dominion, All Points and the County are each a “Party” and collectively the “Parties”.

RECITALS

- A. Pursuant to the Virginia Code § 56-585.1 :9, as amended (the “Broadband Statute”), the Commonwealth of Virginia is seeking to expand broadband service into unserved areas of the Commonwealth. The Broadband Statute further permits electric utilities to pursue programs with broadband providers and local counties to facilitate such expansion.
- B. The County and All Points have entered into that certain Broadband Partnership Agreement dated as of June 28, 2021 (the “BPA”), pursuant to which All Points has been engaged to support the County’s efforts to increase broadband access.
- C. Dominion and All Points have explored the feasibility of Dominion deploying middle mile infrastructure in the County, in the manner set forth in the Broadband Statute, to facilitate All Points’ extension of last-mile service to unserved areas and agreed to proceed with the development of a proposal to present to the State Corporation Commission (“Commission”) for approval.
- D. The Parties are pursuing a relationship whereby: (i) pursuant to the Broadband Statute, Dominion would construct a fiber route that maximizes the number of unserved areas to be served by All Points within the County, (ii) Dominion will leverage the additional fiber installed along the route to connect devices that may not have had fiber connectivity under the original plan pursuant to the Grid Transformation and Security Act, (iii) All Points will collaborate with and invest in the County and use the additional Dominion fiber capacity to serve broadband end users in unserved locations in the County, (iv) All Points and the County will collaborate to recruit and engage other partners, as appropriate, to advance the Project, and (v) the County will share relevant information with the Organizing Parties and collaborate with the Organizing Parties to advance the Project. The efforts of the Parties herein in the County are referred to as the “Project”.
- E. It is the intention of the Parties that the Project will result in the deployment of a fiber-to-the-premises last-mile broadband network to offer service to all locations within the County that are unserved by broadband as of the date hereof. The Parties acknowledge and agree that the specific details and characteristics of the Project will be analyzed and refined as it proceeds.

NOW, THEREFORE, the Parties hereby agree as follows:

1. INFORMATION SHARING AND COORDINATION

- a) The County and each Organizing Party agrees to share with the Organizing Parties such information as it has in its possession related to broadband deployment and availability that may be useful to the Organizing Parties in conducting their analysis or otherwise facilitate the Project.
- b) All Points will serve as the central conduit for all information sharing activities and will be responsible for overall coordination of the Project.
- c) The Parties will coordinate any communication releases to the public, and all announcements are subject to the prior written consent of Dominion.

2. PHASE ONE TIMEFRAME AND ACTIVITIES

- a) The Parties anticipate that Phase I of the Project will continue until approximately September 1, 2021.
- b) During Phase I:
 - a. The Organizing Parties will conduct community and stakeholder engagement activities in the County.
 - b. The Organizing Parties will collaborate to develop preliminary plans and network design criteria that: (i) are consistent with the Broadband Statute and required for development of the Petition, and (ii) facilitate the extension of broadband availability to as many presently unserved locations as possible.
- c) At the Conclusion of Phase I:
 - a. All Points, in coordination with the other Organizing Parties, will present the proposed Project to the County.
 - b. All Points will identify the costs, if any, of Proceeding to Phase II for the County and identify grants and other sources of potential funding to reduce or eliminate the County's out-of-pocket costs to proceed.

3. PHASE TWO TIMEFRAME AND ACTIVITIES

- a) The Parties anticipate that Phase II of the Project will commence upon the conclusion of Phase I and continue until approximately June 15, 2022.
- b) During Phase II:
 - i. Dominion and All Points will prepare a petition (the "Petition") under the Broadband Statute to the Commission seeking approval of Dominion's participation in the Project. Dominion and All Points anticipate that the Petition will be submitted in the fourth quarter of 2021. All Points will serve as the nongovernmental internet service provider pursuant to the Broadband Statute. All Points and each of the other Parties will provide such information and assistance to Dominion as it may reasonably request to advance the Project and will commit to continuing to be involved in the Petition until and after approval of the Petition is received. The Parties agree that implementation of the Project shall be contingent upon Commission approval of such Project on terms and conditions approved by Dominion that are not materially adverse to Dominion.
 - ii. All Points will identify all available state and federal grant, loan, loan guarantee, and other support mechanisms (collectively, "Public Support Mechanisms") that may be available to support the Project, and All Points will coordinate and oversee the development and submission of applications for relevant Public Support Mechanisms.
 - iii. The County, and each Organizing Party, as applicable, will agree to support

application(s) for any Public Support Mechanisms identified by All Points.

- iv. If the Petition related to the Project is approved by the Commission on terms and conditions approved by Dominion that are not materially adverse to Dominion, the Parties intend to negotiate and execute one or more binding mutual definitive agreements (“Definitive Agreements”) setting forth their respective commitments and obligations and such other particulars as the parties thereto may deem appropriate.

4. EXPENSES

The Parties understand that various costs will be incurred in relation to activities contemplated herein. Except to the extent set forth in any other agreements between any of the Parties, including any Definitive Agreements, the Parties understand that none of the Parties herein shall be responsible for reimbursement of expenses to any of the others.

5. GOOD FAITH COMMITMENT TO EACH PROJECT

- a) The County agrees that, for so long as it is a Party to this Memorandum, it shall not participate in any activity or course of conduct that is inconsistent with or competitive to the Project, and that it will devote its broadband-related attention and resources to its Project.
- b) The Parties understand and agree that, except as provided in the next sentence, this Memorandum (i) constitutes only a statement of intentions, (ii) does not reflect all matters upon which Definitive Agreements must be reached in order for the transactions contemplated hereby to be consummated, (iii) binding obligations with respect to a Project will only result from the execution of one or more Definitive Agreements and subject to the terms and conditions stated therein, and (iv) does not obligate the Parties to enter into any Definitive Agreement relating to any Project. This Memorandum is not intended to be binding, other than Paragraphs 3(b)(i), 4, and 5.

6. TERMINATION

Any Party may terminate its participation in this Memorandum at any time, with or without cause, upon written notice to the other Parties. In addition, this Memorandum shall terminate and be of no further force and effect if the Commission rejects the petition.

7. LIMITATION OF LIABILITY

To the extent permitted by law, no Party shall be liable to the others in contract, tort, or otherwise, for any claims, liabilities or losses arising out of this Memorandum or alleged to result from the failure of the other Party to enter into any Definitive Agreements. To the extent permitted by law, the Parties hereby waive, in advance, any claims (whether such claims are based on breach of contract, tort, equity or any other theory) for the failure for any reason to enter into the Definitive Agreements. In no event shall any Party be liable to the other for any incidental, indirect, special, punitive or consequential damages (including without limitation damages for lost profits).

8. GENERAL

8.1. Governing Law.

This Memorandum shall be governed in all respects by the laws of the Commonwealth of Virginia.

8.2. Amendments.

No modification, amendment or waiver of any of the provisions of this Memorandum will be binding without the written consent of the Parties hereto.

8.3. Binding Effect; Assignment.

This Memorandum will inure to the benefit of and be binding upon each of the Parties hereto and their respective successors and permitted assigns to the extent provided in Section 8, but in no respect shall give rise to any third party beneficiary rights or claims. No Party may assign any of its rights, interests, or obligations hereunder without the prior written consent of the other Parties, except that any of the Organizing Parties may assign this Memorandum to an affiliated entity upon written notice to the other Parties.

8.4. Counterparts.

This Memorandum may be executed in counterparts, all of which for all purposes shall be deemed to be an original and all of which shall, taken together, constitute one and the same instrument.

8.5. Relationship of Parties.

Nothing in this Memorandum shall be deemed to constitute, create, give effect to, or otherwise recognize a joint venture, partnership, or formal business entity of any kind.

8.6. Notices.

All notices, requests and other communications hereunder shall be in writing and delivered by hand, by nationally-recognized delivery service that guarantees overnight delivery, or by first-class registered or certified mail, return receipt requested, postage prepaid, addressed as follows:

If to Dominion:

Dominion Energy Virginia
600 Canal Street
Richmond, Virginia 23219
Attention: Director, New Technologies and Energy Conservation

with a copy to:

Dominion Energy Services, Inc.
120 Tredegar Street
Richmond, Virginia 23219
Attention: Deputy General Counsel – State Regulatory
Fax: (804) 819-2677

If to All Points:

All Points Broadband Partners, LLC
Attn: Legal Notices
908 Trailview Boulevard, SE
Suite 170
Leesburg, Virginia 20175

If to the County, to the address set forth on the County's counterpart signature page to this Memorandum.

Any Party may change its address at any time upon notice to the other Parties.

IN WITNESS WHEREOF, the Parties have executed this Memorandum as of the Effective Date.

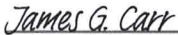
**VIRGINIA ELECTRIC AND POWER COMPANY
DBA DOMINION ENERGY VIRGINIA**



Augustus Johnson IV (Jun 29, 2021 09:40 EDT)

Name: Augustus Johnson, IV
Title: Director, Electric Distribution Grid Solutions

ALL POINTS BROADBAND PARTNERS, LLC



James G. Carr (Jun 29, 2021 09:41 EDT)

Name: James G. Carr
Title: Chief Executive Officer

HANOVER COUNTY, VIRGINIA



Steven Rusch (Jun 29, 2021 10:11 EDT)

Name: Steven Rusch
Title: Purchasing Division Director

County Address for Notice:

Hanover County, Virginia

Finance and Management Services Department/Purchasing Division

7507 Library Drive

Hanover, Virginia 23069-0470

ATTACHMENT 9 - FUNDING SOURCES TABLE

Source	Amount	%	Status
Requested VATI	\$ 14,430,100	24.0%	Pending
Hanover County	\$ 15,840,000	26.3%	Secured
Electric Utility, DEV	\$ 5,625,000	9.3%	SCC Pending
All Points Broadband	\$ 24,311,007	40.4%	Secured
Total Funding Sources	\$ 60,206,107	100.0%	

BOARD OF SUPERVISORS

SEAN M. DAVIS, CHAIRMAN
HENRY DISTRICT

ANGELA KELLY-WIECEK, VICE-CHAIRMAN
CHICKAHOMINY DISTRICT

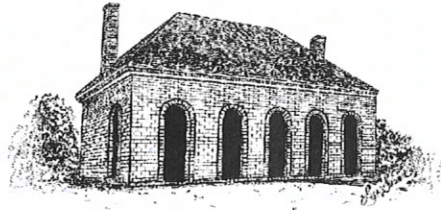
SUSAN P. DIBBLE
SOUTH ANNA DISTRICT

F. MICHAEL HERZBERG IV
COLD HARBOR DISTRICT

W. CANOVA PETERSON
MECHANICSVILLE DISTRICT

FAYE O. PRICHARD
ASHLAND DISTRICT

AUBREY M. STANLEY
BEAVERDAM DISTRICT



HANOVER COURTHOUSE

HANOVER COUNTY

ESTABLISHED IN 1720

COUNTY ADMINISTRATOR'S OFFICE

JOHN A. BUDESKY
COUNTY ADMINISTRATOR

JAY A. BROWN
DEPUTY COUNTY ADMINISTRATOR

FRANK W. HARKSEN, JR.
DEPUTY COUNTY ADMINISTRATOR

JAMES P. TAYLOR
DEPUTY COUNTY ADMINISTRATOR

WWW.HANOVERCOUNTY.GOV

P.O. BOX 470, HANOVER, VA 23069
7516 COUNTY COMPLEX ROAD, HANOVER, VA 23069

PHONE: 804-365-6005
FAX: 804-365-6234

September 9, 2021

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

RE: Support for 2022 VATI Application and Confirmation of Local Match

Dear Dr. Holmes:

This letter will confirm the strong support of Hanover County (the "County") for the application to be submitted by the County and All Points Broadband, as applicant and co-applicant, respectively, to the 2022 Virginia Telecommunication Initiative (the "VATI Application").

At its meeting on September 8, 2021, the County's Board of Supervisors voted to approve submission of the VATI Application, and authorized a local match commitment of \$15,840,000 to be included with the VATI Application.

We appreciate your consideration of this important project for the future of the County. If you have questions on this matter, please contact Kevin Nelson, Director of Information Technology, at knelson@hanovercounty.gov.

Sincerely,

John A. Budesky
County Administrator



VI.

Agenda Item

APPROVED by the Hanover County
Board of Supervisors
Meeting of 9/8/21
John A. Budesky,
County Administrator/
Clerk of the Board of Supervisors

County of Hanover

Board Meeting: September 8, 2021

Subject: Request for Adoption of Resolution – Joint Virginia Telecommunications Initiative Grant Application to be filed with the Virginia Department of Housing and Community Development

Summary of Agenda Item: The Virginia Telecommunications Initiative (VATI) grant program for broadband expansion is administered by the Virginia Department of Housing and Community Development (DHCD). The grant program targets providing broadband internet service to unserved areas of the County. The County intends to apply for grant funds that will constitute universal coverage (defined as at least 97%) to County homes and businesses. A key element is the application must be submitted by a “unit” of government in partnership with a private internet service provider. County staff have been working with two private internet service providers, CenturyLink and All Points Broadband, to submit applications and both have agreed to partner with the County.

The grant application process is competitive in nature and in order to help boost the application score it is recommended the Board approve the attached resolution approving the filing of the grant applications for both providers. The applications are due September 14, 2021.

County Administrator’s Recommended Board Motion: Motion to adopt a resolution for filing of a Virginia Telecommunications Initiative grant application as attached and authorize the County Administrator to take the necessary actions to finalize the grant application.

A RESOLUTION APPROVING THE FILING OF GRANT APPLICATIONS WITH THE VIRGINIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

WHEREAS, Virginia's Department of Housing and Community Development ("DHCD") administers the Virginia Telecommunications Initiative grant program to assist in constructing middle-mile and last-mile broadband telecommunications infrastructure in the unserved areas of the Commonwealth. The deadline for applications has been set for 14 September 2021; and

WHEREAS, the program guidelines for grant application requires a government entity as the applicant with a qualified and experienced private sector broadband internet service provider as the co-applicant; and

WHEREAS, CenturyLink and All Points Broadband have identified areas that do not have access to broadband internet service (unserved); and

WHEREAS, CenturyLink and All Points Broadband have agreed to file a broadband grant application in conjunction with the County; and


WHEREAS, these projects will bring broadband internet service to the unserved areas of Hanover, which will include the construction of hundreds of miles of middle-mile and last-mile fiber to provide service to thousands of homes and businesses in the County.

NOW, THEREFORE, BE IT RESOLVED, the Hanover County Board of Supervisors does hereby approve the submittal of broadband grant application(s) to the Virginia Department of Housing and Community Development, committing appropriated ARPS funds to serve as County VATI grant match, and authorize the County Administrator to take such action necessary to finalize the grant application(s).

On motion by Mr. Michael Herzberg, seconded by Ms. Sue Dibble, the Hanover County Board of Supervisors voted to approve a Resolution approving the filing of Grant Applications with the Virginia Department of Housing and Community Development, subject to the conditions outlined in the staff report, as follows:

	Vote:
Sean M. Davis	Aye
Susan P. Dibble	Aye
F. Michael Herzberg, IV	Aye
Angela Kelly-Wiecek	Absent
W. Canova Peterson	Aye
Faye O. Prichard	Aye
Aubrey M. Stanley	Absent

Date: September 10, 2021



John Budesky
County Administrator



September 14, 2021

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

RE: 2022 VATI Application

Dear Dr. Holmes:

This letter will confirm All Points Broadband's ("APB") support for this application to the 2022 Virginia Telecommunication Initiative program ("VATI"). APB confirms that it is committing all required financing to satisfy All Points' match commitment set forth in the application.

We are excited to be part of this important project and appreciate your consideration.

Sincerely,

A handwritten signature in blue ink, appearing to read "J. Carr", is positioned above the printed name.

James G. Carr
Chief Executive Officer



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

RE: All Points Broadband – 2022 Accelerated Fiber Deployment Initiative

Dr. Holmes:

On behalf of Searchlight Capital Partners, L.P. (“Searchlight”), I am pleased to submit this letter in support of the applications that All Points Broadband (“All Points”) is making to the 2022 Virginia Telecommunication Initiative (“VATI”).

Searchlight is All Points Broadband’s lead equity sponsor. Our investment in All Points is made for the specific purpose of accelerating All Points’ successful track record of deploying last-mile, fiber-to-the-home (“FTTH”) broadband through public-private partnerships and in partnership with electric utilities. Through its VATI and Utility Leverage programs, Virginia and the Department of Housing and Community Development (“DHCD”) have created a framework that is now recognized as a national model for attracting private capital to making last-mile FTTH available to currently unserved locations. Searchlight strongly supports All Points’ efforts to leverage that forward-thinking framework to deliver connectivity to unserved locations across the Commonwealth.

For the current VATI cycle, All Points has designed networks that will extend FTTH broadband to more than seventy five thousand currently unserved locations in Virginia. Collectively, we refer to these projects as the 2022 Accelerated Fiber Deployment Initiative (the “Initiative”). Each project in the Initiative has been designed to achieve universal FTTH access in the relevant county and/or region. Detailed bills of material and cost estimates based on current pricing have been prepared for each project and All Points and its vendors have secured materials required to execute the Initiative. In light of the pressures on the global supply chain for FTTH construction, the best way to secure required materials and labor at the lowest unit pricing is to aggregate multiple large projects into significant volume commitments. This is the approach that All Points and Searchlight have taken for the 2022 Accelerated Fiber Deployment Initiative.

This letter will confirm that Searchlight has committed all of the equity financing required to complete all of the projects included in All Points’ 2022 Accelerated Fiber Deployment Initiative and related VATI applications.

About Searchlight Capital Partners

Searchlight is a private investment firm with over \$9 billion of assets under management with extensive expertise investing in the global telecommunications and media sectors. Over the last two years, Searchlight has invested in excess of \$1.25 billion in FTTH in the United States, making Searchlight the number one investor in domestic FTTH infrastructure in that period. And as of today, through our investments in All Points, Consolidated Communications and Zply Fiber, Searchlight is the fourth largest builder of FTTH passings in America. All Points benefits from the tremendous volume purchasing arrangements for Searchlight's portfolio companies, which ensure availability of required supply and the best available pricing.

Searchlight has deep familiarity with broadband markets and the associated competitive dynamics in the broader United States. Searchlight's leadership, both through their time at Searchlight and at previous investment firms, have also acquired multiple decades of experience investing specifically in fiber-based broadband businesses in the U.S. and globally, which has made it a core competency and strategic focus for the firm.

In addition to myself, Ajit Pai is another Partner at Searchlight who focuses on the firm's broadband and digital infrastructure efforts and is a key member of the All Points team. Ajit is a Virginia resident and served as a member (2012-2017) and then Chairman (2017-2021) of the Federal Communications Commission.

Searchlight is Committed to All Points' 2022 Accelerated Fiber Deployment Initiative

The projects comprising the All Points 2022 Accelerated Fiber Deployment Initiative will extend FTTH broadband to more than seventy five thousand currently unserved locations in the Commonwealth and finally bridge the digital divide for more than 32% of the remaining unserved locations estimated by Virginia's broadband team. Searchlight has committed all equity financing required to complete all of the projects set forth in the VATI applications submitted by All Points. We look forward to providing the significant private capital that will make Virginia the first state in the nation to achieve universal broadband access.

Sincerely,



Darren Glatt
Partner & Co-Head of Infrastructure Investing
Searchlight Capital Partners, L.P.



September 9, 2021

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

RE: 2022 VATI Applications from All Points Broadband

Dear Ms. Holmes:

Dominion Energy Virginia (“Dominion”) is pleased to be a party to several Memoranda of Understanding with All Points Broadband, Rappahannock Electric Cooperative, Shenandoah Valley Electric Cooperative, Northern Neck Electric Cooperative, and the Counties of Augusta, Clarke, Culpeper, Hanover, Fauquier, Frederick, King George, King William, Lancaster, Loudoun, Middlesex, Northumberland, Page, Rappahannock, Rockingham and Warren (each, a “Participating County”).

Dominion, All Points, and our electric cooperative partners have developed a unique approach for achieving universal broadband access with individual Counties, and through broader, regional approaches. Dominion’s participation in each of these projects will be pursuant to, and in a manner consistent with the provisions of, Virginia Code § 56-585.1:9 (the “Utility Leverage Statute”).

This letter confirms Dominion’s support for the applications to the 2022 Virginia Telecommunication Initiative to be submitted by All Points and our Participating County partners named above. Dominion’s specific investments that will support each proposed project will be set forth in petitions under the Utility Leverage Statute that will be submitted to the State Corporation Commission (“SCC”). Dominion’s participation in each project, and its specific level of related investment, will be subject to the approval of the SCC and the terms set forth in the SCC’s Final Order related to each project.

Dominion is pleased to be part of these important County-wide and regional initiatives in the manner contemplated by the Utility Leverage Statute.

Sincerely,

A handwritten signature in black ink, appearing to read "D.F. Walker".

David F. Walker
Director, Rural Broadband

ROBERT J. WITTMAN
1ST DISTRICT, VIRGINIA



HOUSE ARMED SERVICES COMMITTEE
RANKING MEMBER, SEAPOWER AND PROJECTION FORCES
TACTICAL AIR AND LAND FORCES

NATURAL RESOURCES COMMITTEE
WATER, OCEANS, AND WILDLIFE

CO-CHAIR, CONGRESSIONAL
SHIPBUILDING CAUCUS

CO-CHAIR, CONGRESSIONAL
CHESAPEAKE BAY WATERSHED TASK FORCE

CO-CHAIR, CONGRESSIONAL
PUBLIC HEALTH CAUCUS

CO-CHAIR, CONGRESSIONAL
RURAL BROADBAND CAUCUS

Congress of the United States
House of Representatives
Washington, DC 20515

September 1, 2021

WASHINGTON OFFICE:
2055 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
(202) 225-4261

DISTRICT OFFICES:

STAFFORD OFFICE
95 DUNN DRIVE SUITE 201
STAFFORD, VA 22556
(540) 659-2734

MECHANICSVILLE OFFICE
6501 MECHANICSVILLE TURNPIKE SUITE 102
MECHANICSVILLE, VA 23111
(804) 730-6595

MIDDLE PENINSULA OFFICE
508 CHURCH LANE
P.O. Box 3106
TAPPAHANNOCK, VA 22560
(804) 443-0668

WWW.WITTMAN.HOUSE.GOV

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

Dear Director Holmes:

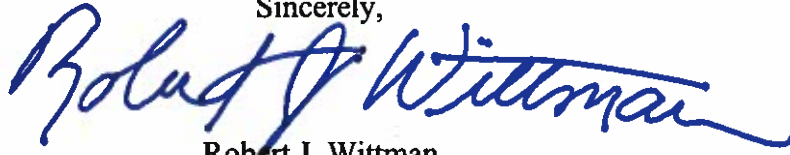
I am writing in support of the two Hanover County FY 2022 Virginia Department of Housing and Community Development Virginia Telecommunication Initiative (VATI) grant applications to expand high-speed broadband availability in the First Congressional District through partnerships with CenturyLink and All Points Broadband. Approval of these applications would help meet the critical need to buildout high-speed broadband service to residents of Hanover County.

Rural residents in Virginia's First Congressional District appreciate the value of high-speed broadband access. Providing reliable broadband access is vital for commercial stability, job creation, distance learning, and telehealth service expansion. Throughout the First Congressional District of Virginia, as in other largely rural areas, economic incentives are needed to expand broadband access, and the VATI program has been a successful vehicle of meeting that need. VATI encourages private telecommunications providers to enlarge their coverage and gives localities the ability to design the expansion that is right for their communities. This eases the financial burden associated with construction costs, broadens service, and creates a successful public-private partnership (P3) for the awardees and for the Commonwealth.

Hanover has collaborated with CenturyLink and All Points Broadband (APB) to utilize state grant funds to amplify local and private funding. These applications are resourcefully designed and embody a first-rate use of state resources with a high rate of private leverage. The Connect Hanover Initiative seeks to provide universal broadband coverage to Hanover residents. The goal is to provide broadband internet to all homes and businesses in the County. Moreover, the Connect Hanover Initiative collaborates with Dominion Energy and Rappahannock Electric Cooperative to achieve this goal. The Hanover County Board of Supervisors has appropriated \$17 million toward making this goal a reality. The proposed Hanover applications will increase educational opportunities and economic growth for the area.

Thank you for your consideration of the Hanover County applications. Moreover, if you have any concerns or questions, please do not hesitate to contact my office.

Sincerely,

A handwritten signature in blue ink that reads "Robert J. Wittman". The signature is fluid and cursive, with a long horizontal stroke at the end.

Robert J. Wittman
Member of Congress

SENATE OF VIRGINIA

RYAN T. McDOUGLE
4TH SENATORIAL DISTRICT
ALL OF CAROLINE, ESSEX, LANCASTER,
MIDDLESEX, NORTHUMBERLAND, AND
RICHMOND COUNTIES; AND PART OF
HANOVER, KING GEORGE, SPOTSYLVANIA,
AND WESTMORELAND COUNTIES
POST OFFICE BOX 187
MECHANICSVILLE, VIRGINIA 23111



COMMITTEE ASSIGNMENTS:
JUDICIARY
PRIVILEGES AND ELECTIONS
REHABILITATION AND SOCIAL SERVICES
RULES

September 12, 2021

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

RE: Hanover County 2021 VATI Application

Dear Dr. Holmes:

I would like to express my strong support for Hanover County's Virginia Department of Housing and Community Development 2021 VATI (Virginia Telecommunication Initiative) grant application. I commend Hanover County for coordinating this application along with their partner, All Points Broadband.

Approval of this application would help meet a critical and growing need to expand broadband service in Hanover County. Bringing broadband to unserved areas fosters a myriad of benefits, including commercial growth for businesses, educational opportunities for students, and healthcare improvements via access to telemedicine. Moreover, the COVID-19 pandemic has amplified the need for broadband in rural areas without access to high-speed internet for virtual-only school, work, and doctor's appointments.

Virginia has made progress in the General Assembly over the years to bring broadband to unserved areas. For example, I sponsored legislation three years ago that streamlines the approval process for wireless infrastructure to maximize access in unserved areas. Two years ago, House Bill 2691 was passed to allow our Commonwealth's large electric utilities to work with electric cooperatives to bring broadband infrastructure to rural areas. Approval of the VATI grant application would be a significant step forward in the process to reach our goal of universal broadband coverage.

Thank you in advance for your consideration. If you have any questions or concerns, please do not hesitate to call my office.

Sincerely,

A handwritten signature in black ink that reads "Ryan T. McDougale".

Ryan T. McDougale



COMMONWEALTH OF VIRGINIA
HOUSE OF DELEGATES
RICHMOND

HYLAND F. "BUDDY" FOWLER, JR.
116 NORTH RAILROAD AVENUE
SUITE 13
ASHLAND, VIRGINIA 23005

FIFTY-FIFTH DISTRICT

COMMITTEE ASSIGNMENTS:
GENERAL LAWS
FINANCE
HEALTH, WELFARE AND INSTITUTIONS

September 1, 2021

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

Dear Dr. Holmes:

I would like to express my strong support for Hanover County's Virginia Telecommunications Initiative grant application to increase access to broadband with Comcast by upgrading and expanding its network.

In my House district which includes western Hanover County, there is a demonstrated need for access to broadband. Residents and businesses alike have faced frustration with slow or no internet. Building broadband networks to unserved areas is often challenging due to larger distances to cover and fewer possible customers to purchase service. Internet service providers have indicated that in these areas of Hanover County population density is insufficient to make it economically feasible to build out at this time. Consequently, a Virginia Telecommunication Initiative grant would be a key factor in expediting increased broadband access.

Additional access to high speed broadband will allow businesses to compete more effectively, provide new educational opportunities for students, especially in this time of virtual learning, and offer residents more convenience and entertainment in their homes. Broadband will also attract new businesses and residents from outside the region by allowing telecommuting and other networking options suitable for today's global economy. I support the proposed infrastructure upgrade in Hanover County and request the Department of Housing and Community Development to approve the application because it will provide a great benefit to my neighbors and constituents in Hanover.

Thank you in advance for your consideration. If you have any questions or concerns, please do not hesitate to contact me personally.

Sincerely,

A handwritten signature in cursive script that reads "Buddy".

Hyland F. Fowler, Jr.



COMMONWEALTH OF VIRGINIA
HOUSE OF DELEGATES
RICHMOND

SCOTT A. WYATT
POST OFFICE BOX 365
MECHANICSVILLE, VIRGINIA 23111

COMMITTEE ASSIGNMENTS:
TRANSPORTATION
COUNTIES, CITIES AND TOWNS

NINETY-SEVENTH DISTRICT

August 31, 2021

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

Dear Dr. Holmes:

I am writing to express my strong support for Hanover County's Virginia Telecommunications Initiative grant application to make broadband services available to residents living in unserved areas of the County.

There is a demonstrated need in the 97th District, which covers eastern Hanover, for access to broadband. I continually hear from residents and businesses alike who have experienced frustration with slow, or no, internet service. Building broadband networks to unserved areas is challenging due to the larger distances to cover and fewer possible customers to purchase service. Internet service providers have indicated that in these areas of Hanover County, the population density is insufficient to make it economically feasible to build out at this time. As a result, a Virginia Telecommunication Initiative grant is a key factor to providing much needed broadband.

Hanover County has demonstrated its commitment to providing broadband to unserved areas of the County. On July 28th, the County announced its "Connect Hanover" partnership with All Points Broadband, Dominion Energy, and Rappahannock Electric Cooperative. The County is also working with CenturyLink to address its unserved areas. Additionally, the Board of Supervisors has appropriated \$17 million towards bringing broadband internet to unserved areas of the County.

I strongly support the proposed infrastructure upgrade in Hanover County and request that the Department of Housing and Community Development approve the application, as it will provide a great benefit to my neighbors and constituents in Hanover.

Thank you in advance for your consideration. Should you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Scott A. Wyatt".

Scott A. Wyatt
Member, Virginia House of Delegates



Chamber Comments for Hanover County Broadband Grant Request

The Hanover Chamber of Commerce, VA, enthusiastically supports the expansion of broadband service in Hanover County, in alignment with our mission to champion strong business within our community. Access to broadband service is important in our daily lives and essential to economic growth.

The expansion of broadband to currently unserved areas of Hanover will enable home-based businesses to thrive, keep our existing businesses competitive and enhance the possibilities for telecommuting and education. Broadband access will also increase agricultural operations and tourism, provide all County residents and students a better quality of life, and allow continued access to our members' many goods and services.

Further, the partnerships already in place to complete the work show the strong commitment of our Hanover community. The Hanover Chamber of Commerce, VA, represents over 340 businesses and 650 individuals across our County; our membership includes every size business and industry.

September 13, 2021

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

RE: All Points Broadband – 2022 Accelerated Fiber Deployment Initiative

Dr. Holmes:

On behalf of Rappahannock Electric Cooperative (REC), I am pleased to submit this letter in support of the applications that All Points Broadband (All Points) is submitting for grant funding from the 2022 Virginia Telecommunication Initiative.

REC is a member-owned, member-focused electric cooperative serving portions of 22 counties. We appreciate the focus from the Commonwealth on this critical need to make high-quality broadband internet service available in our unserved and underserved communities. REC's primary role in this effort has been to serve as the facilitator of solutions like those being presented by All Points. We have worked closely to facilitate the partnerships with All Points and the counties we serve, as well as with our other electric utility partners. Our efforts have facilitated commitments that will deliver universal, fiber-to-the-home broadband access in each of the partnered counties. Additionally, REC is constructing a utility fiber backbone network designed to facilitate the successful completion of these broadband partnership solutions.

Partnerships between Internet service providers and electric utilities create opportunities to simultaneously address critical needs such as modernizing the energy grid and strengthening the reliability and security of our electric infrastructure, while making broadband access universally available. REC is proud to be facilitator and to contribute to these important projects. We also look forward to continuing our work with All Points.

Thank you for your consideration of awarding the funding necessary to complete these important projects.

Sincerely,



Peter Muhoro, Ph.D.
Chief Strategy, Technology and Innovation Officer
Rappahannock Electric Cooperative

Rappahannock Electric Cooperative is an equal opportunity provider and employer.

ATTACHMENT 12 - DERIVATION OF COSTS

Project / Product Cost Category	Total	VATI	Non-VATI	Source of Estimate	Date, Most Recent Revision
Final Design and Engineering	\$ 2,309,572	\$ 1,154,786	\$ 1,154,786	Tilson	9/2/2021
Project & Construction Mgmt.	\$ 3,340,013	\$ 1,670,007	\$ 1,670,007	Tilson	9/2/2021
Headend/Central Office	\$ 1,006,715	\$ 294,134	\$ 712,581	Tilson	9/2/2021
Field Network Equipment	\$ 1,020,270	\$ 298,095	\$ 722,175	Tilson	9/2/2021
Utility Middle Mile	\$ 5,625,000	\$ -	\$ 5,625,000	APB / DEV	9/10/2021
Aerial Make Ready & Construction	\$ 16,944,525	\$ 4,950,724	\$ 11,993,801	AFL / Tilson / REC	9/2/2021
Underground Construction	\$ 14,349,220	\$ 4,192,447	\$ 10,156,773	Tilson	9/2/2021
Fiber Drop Construction	\$ 12,427,310	\$ 3,106,828	\$ 9,320,483	AFL / Tilson	9/2/2021
Subscriber Equipment & Installation Labor	\$ 1,932,923	\$ 483,231	\$ 1,449,692	Tilson	9/2/2021
Other Capex	\$ 459,180	\$ 134,160	\$ 325,020	APB / Tilson	9/2/2021
Construction Bond (1.5%)	\$ 791,379	\$ 395,689	\$ 395,689	APB	9/10/2021
Total	\$ 60,206,107	\$ 16,680,100	\$ 43,526,007		

*** please see Attachment 13 for unit and unit cost assumptions used to tabulate total cost*



September 13, 2021

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

RE: Cost Estimates for 2022 VATI Application

Dear Dr. Holmes:

To develop the project budget included with this application, All Points Broadband (“APB”) prepared a high-level design for the project and developed an indicative bill of materials based on that design.

As part of APB’s design and cost estimation process, All Points engaged Tilson Technology Management, Inc. (“Tilson”) to supplement APB’s internal engineering and design resources and to assist in the development of the high-level design and related bill of materials and cost estimates. Tilson is one of America’s leading providers of consulting, design and construction management services to the telecommunications industry. As described in Tilson’s letter included in Attachment 13, the cost estimates that form the basis of the project budget are based on Tilson’s bill of materials and related cost estimates and reflect current pricing available to All Points.

All Points then obtained current pricing for each item on the bill of materials from its primary vendors, including AFL Telecommunications (“AFL”), APB’s primary supplier of fiber optic cables, connectors, terminals, and related hardware. As described in AFL’s letter included in Attachment 13, AFL provided the pricing used for all relevant cost categories included in the project budget and AFL has allocated committed manufacturing capacity to support APB’s materials requirements and specific schedule for this project.

Sincerely,

A handwritten signature in blue ink, appearing to read "J. Carr", is positioned below the word "Sincerely,".

James G. Carr
Chief Executive Officer

September 7, 2021

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

RE: Applications of All Points Broadband to the Virginia Telecommunications Initiative

Dear Dr. Holmes:

Tilson Technology Management, Inc. ("Tilson") is a leading provider of consulting, design and construction management services to leading telecommunications firms throughout the United States. Tilson is pleased to have been engaged by All Points Broadband ("APB") to support its planning and high-level design activities for each of the projects included in APB's 2022 Accelerated Fiber Deployment Initiative (the "Initiative").

This letter will confirm that Tilson has assisted APB in the development of high-level designs, indicative bills of material, and related cost estimates for each of the projects included in the Initiative. We understand that APB has incorporated our work into the project budgets that APB is submitting as part of the Initiative.

We hope that the significant work we have performed with All Points will result in the expansion of fiber-to-the-home broadband access to tens of thousands of currently unserved Virginians.

Sincerely,


John Ford (Sep 7, 2021 15:02 EDT)

Jay Ford

Director



Corporate Headquarters

170 Ridgeview Center Drive, Duncan, SC 29334 USA

TEL: (800) 235-3423 TEL: (864) 433-0333

FAX: (864) 433-5560 WEB: www.AFLglobal.com

September 8, 2021

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

RE: Letter of Support for APB's 2022 Accelerated Fiber Deployment Initiative

Dear Dr. Holmes,

AFL Telecommunications ("AFL") is a leading global manufacturer of fiber optic cables, connectors, terminals, and related hardware. Headquartered in Duncan, South Carolina, AFL manufactures its products at several locations in the United States and abroad, including manufacturing locations in North Carolina, South Carolina, and Bristol, Virginia.

AFL is excited to be partnering with All Points Broadband ("APB") and its electric utility partners, as part of APB's 2022 Accelerated Fiber Deployment Initiative that will deliver best-in-class fiber-to-the-home broadband access to thousands of currently unserved locations in Virginia.

AFL has a strong working relationship with All Points Broadband and will serve as APB's strategic supplier for all of the projects included in the 2022 Accelerated Fiber Deployment Initiative. APB evaluated multiple technology solutions, ultimately selecting AFL as the best fit for its rural fiber optic projects. AFL's ADSS-style self-supporting cable technology and dedicated manufacturing capacity enables faster, less complicated deployment that reduces overall time to market at a competitive total cost of ownership.

This letter will confirm that AFL is committed to supporting All Points Broadband's 2022 Accelerated Fiber Deployment Initiative. AFL and APB have reviewed the specific projects and related bills of materials associated with the projects APB is submitting and AFL has provided APB with pricing that is incorporated in APB's applications. AFL is also allocating committed manufacturing capacity to support APB's requirements and project schedules.

We appreciate the opportunity to support this important initiative to bridge the digital divide in the Commonwealth of Virginia.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ryan O'Sullivan', written in a cursive style.

Ryan O'Sullivan
Director, Rural Fiber to the Home (RFTTH) Program Management

ATTACHMENT 13 - DOCUMENTATION OF SUPPORTING COST ESTIMATES

PROJECT COST ROLLUP	Unit of Measure	Units	Unit Cost	Project Cost
Construction				
Final Design and Engineering	Miles	595.3	\$ 3,880	\$ 2,309,572
Project & Construction Mgmt.	Miles	595.3	\$ 5,611	\$ 3,340,013
Headend/Central Office	Project	1	\$ 1,006,715	\$ 1,006,715
Field Network Equipment	No. Unserved Passings	7,235	\$ 141	\$ 1,020,270
Utility Middle Mile	Miles	112.5	\$ 50,000	\$ 5,625,000
Aerial Make Ready & Construction	Miles	346.7	\$ 48,870	\$ 16,944,525
Underground Construction	Miles	136.0	\$ 105,489	\$ 14,349,220
Construction Subtotal				\$ 44,595,315
Customer Installations				
Fiber Drop Construction	No. Subscribers	5,426	\$ 2,290	\$ 12,427,310
Subscriber Equipment & Installation Labor	No. Subscribers	5,426	\$ 356	\$ 1,932,923
Installation Subtotal				\$ 14,360,233
Other				
Other Capex	Project	1	\$ 459,180	\$ 459,180
Grant Administration	Project	1	\$ -	\$ -
Construction Bond (1.5%)	Insured Activity	\$ 52,758,567	\$ 0.01500	\$ 791,379
Other Subtotal				\$ 1,250,558
Total				\$ 60,206,107

HEADEND / CENTRAL OFFICE	Category	Units	Unit Cost	Extended Cost
CO Site Acquisitions	Headends Total	5	\$ 30,000.00	\$ 150,000
Tax		0		\$ 9,000
OTN Building - 12X20- 6 Relay Racks	Large Headends	2	\$ 175,000.00	\$ 350,000
ODC 100 Cabinet - Adtran, Nokia, Calix	Small Headends	1	\$ 24,000.00	\$ 24,000
1XTA5000 5 GEN SMART FIBER (mounting bracket)	Small Headends	1	\$ 1,346.22	\$ 1,346
30AMP Generator Connector	Small Headends	1	\$ 1,650.00	\$ 1,650
5TH GEN SMART POLE MOUNT KIT	Small Headends	1	\$ 1,410.59	\$ 1,411
Pole 30-5 (Labor and Materials)	Headends Total	5	\$ 1,500.00	\$ 7,500
ODC 1000 Cabinet	Medium Headends	2	\$ 32,000.00	\$ 64,000
Headend / Central Office Subtotal				\$ 608,907
Installation Labor, Freight, Tax, and Contingency				\$ 397,808
Headend / Central Office Total				\$ 1,006,715

FIELD NETWORK EQUIPMENT	Category	Units	Unit Cost	Extended Cost
Netbotz Environmental Monitor including all sensors	Headends, all	5	\$ 850.00	\$ 4,250
OLT Management Server (CMS)	Local Networks	1	\$ 8,000.00	\$ 8,000
000-00372 - E7-2 Field Install Package (CO & ODC/RT): Shelf with Blank Card, FTA, and Field installation Kit	Chassis and spares	22	\$ 616.90	\$ 13,572
100-05529 - E7-2 XG 801 XGS-PON	Modules, XGSPON	20	\$ 11,670.00	\$ 233,400
100-04651 QSFP, 40GE Single Mode transceiver 40km, 1310nm, Duplex LC, C-Temp	Headends, all	10	\$ 6,497.00	\$ 64,970
100-05642- OIM 10G PON Laser	Modules, XGSPON	160	\$ 695.00	\$ 111,200
Generator - Generac 25 KV - 24 hour backup system	Headends, all	5	\$ 17,000.00	\$ 85,000
BATTERY STRING, 190AH	Small + Medium Headends	3	\$ 2,992.94	\$ 8,979
ELTEK FLATPKS RECTIFIER 1000W	Small + Medium Headends	12	\$ 642.35	\$ 7,708
Field Network Equipment, Subtotal				\$ 537,079
Installation Labor, Freight, Tax, and Contingency				\$ 483,191
Field Network Equipment, Total				\$ 1,020,270

ATTACHMENT 13 - DOCUMENTATION OF SUPPORTING COST ESTIMATES (CONTINUED)

DISTRIBUTION FIBER DESIGN BASIS	TOTAL	AERIAL	UNDERGROUND	UNIT COST, AERIAL	UNIT COST, UG
Straight Poles	7,084	7,084	-		
Curved Poles	1,771	1,771	-		
Total Poles	8,855	8,855	-		
Average Drop Length (feet)	745	-	-		
Path (feet)	2,329,822	1,611,603	718,219		
Cable Size 12 (feet)	1,293,507	782,263	511,244		
Cable Size 24 (feet)	384,315	279,493	104,822		
Cable Size 48 (feet)	301,781	235,815	65,966		
Cable Size 72 (feet)	333,453	289,361	44,092		
Cable Size 96 (feet)	351,079	303,130	47,949		
Cable Size 144 (feet)	511,536	432,024	79,512		
Cable Size 288 (feet)	-	-	-		
Cable Size 432 (feet)	-	-	-		
Cable Total (feet)	3,175,671	2,322,087	853,584		
Serving Terminal Size 4	216	94	122		
Serving Terminal Size 8	1,253	822	431		
Serving Terminal Total	1,469	916	553		
Distribution Splices at Drop Hubs and Distribution Splice Points - TOTAL	18,284	15,888	2,396		
Distribution Splices at Distribution Hubs - TOTAL	9,900	9,228	672		
Drop Tail Splices - TOTAL	-	-	-		
Feeder Splices at Distribution Hubs and Feeder Splice Points - TOTAL	587	577	10		
Feeder Splices at Headend - TOTAL	816	816	-		
Splices Total	1,403	1,393	10		
Splice Cases	310	260	50		
Small Headends	1	-	122		
Medium Headends	2	-	431		
Large Headends	2	-	50		
Headends Total	5	-	603		
Large Preterm Shelves - Total	28	-	-		
Small Preterm Shelves - Total	2	-	-		
Preterm Shelves Total - Total	30	-	-		
FDH Size 96	-	-	-		
FDH Size 144	-	-	-		
FDH Size 288	2	-	-		
FDH Size 432	26	-	-		
FDH Total	28	-	-		
Splitter Module Size 2 - Distribution	-	-	-		
Splitter Module Size 4 - Distribution	-	-	-		
Splitter Module Size 8 - Distribution	-	-	-		
Splitter Module Size 16 - Distribution	-	-	-		
Splitter Module Size 32 - Distribution	262	-	-		
Splitter Module Size 64 - Distribution	-	-	-		
Splitter Module All Size - Distribution	262	-	-		
Splitter Module All Size - Total	262	-	-		
Handhold Size 4 HUB	122	-	-		
Handhold Size 8 HUB	431	-	-		
Handhold Size 0 Splice	50	-	-		
Handhold Total	603	-	-		

(RETAIN FOR YOUR RECORDS)
Form 477 Filing Summary

FRN: 0023524705 | Data as of: Jun 30, 2020 | Operations: Non-ILEC | Submission Status: Original - Submitted | Last Updated: Sep 1, 2020 22:03:25

Filer Identification

Section	Question	Response
Filer Information	Company Name	All Points Broadband
	Holding Company Name	Virginia Everywhere, LLC
	SAC ID	
	499 ID	831251
Data Contact Information	Data Contact Name	[REDACTED]
	Data Contact Phone Number	(703) 554-6600
	Data Contact E-mail	[REDACTED]
Emergency Operations Contact Information	Emergency Operations Name	Don McElroy
	Emergency Operations Phone Number	(703) 554-6600
	Emergency Operations E-mail	[REDACTED]
Certifying Official Contact Information	Certifying Official Name	James Carr
	Certifying Official Phone Number	(703) 554-6600
	Certifying Official E-mail	[REDACTED]

Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	FCC477-Deployment-1H2020.csv	Sep 1, 2020 12:56:17	[REDACTED]
Fixed Broadband Subscription	fcc477_20200901.csv	Sep 1, 2020 18:25:33	[REDACTED]
Fixed Voice Subscription	fcc477_voip_20200701.csv	Sep 1, 2020 18:28:08	[REDACTED]

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Kentucky	All Points Broadband	Optical Carrier/Fiber to the End User	[REDACTED]
		Terrestrial Fixed Wireless	
Maryland	All Points Broadband	Terrestrial Fixed Wireless	[REDACTED]
Virginia	All Points Broadband	Terrestrial Fixed Wireless	[REDACTED]
West Virginia	All Points Broadband	Terrestrial Fixed Wireless	[REDACTED]

State	DBA Name	Technology	Blocks
Total			

Fixed Broadband Subscription

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

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Kentucky	Optical Carrier/Fiber to the End User	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	Terrestrial Fixed Wireless				
Maryland	Terrestrial Fixed Wireless				
Texas	Terrestrial Fixed Wireless				
Virginia	Terrestrial Fixed Wireless				
West Virginia	Terrestrial Fixed Wireless				
Total					

Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
[REDACTED]				

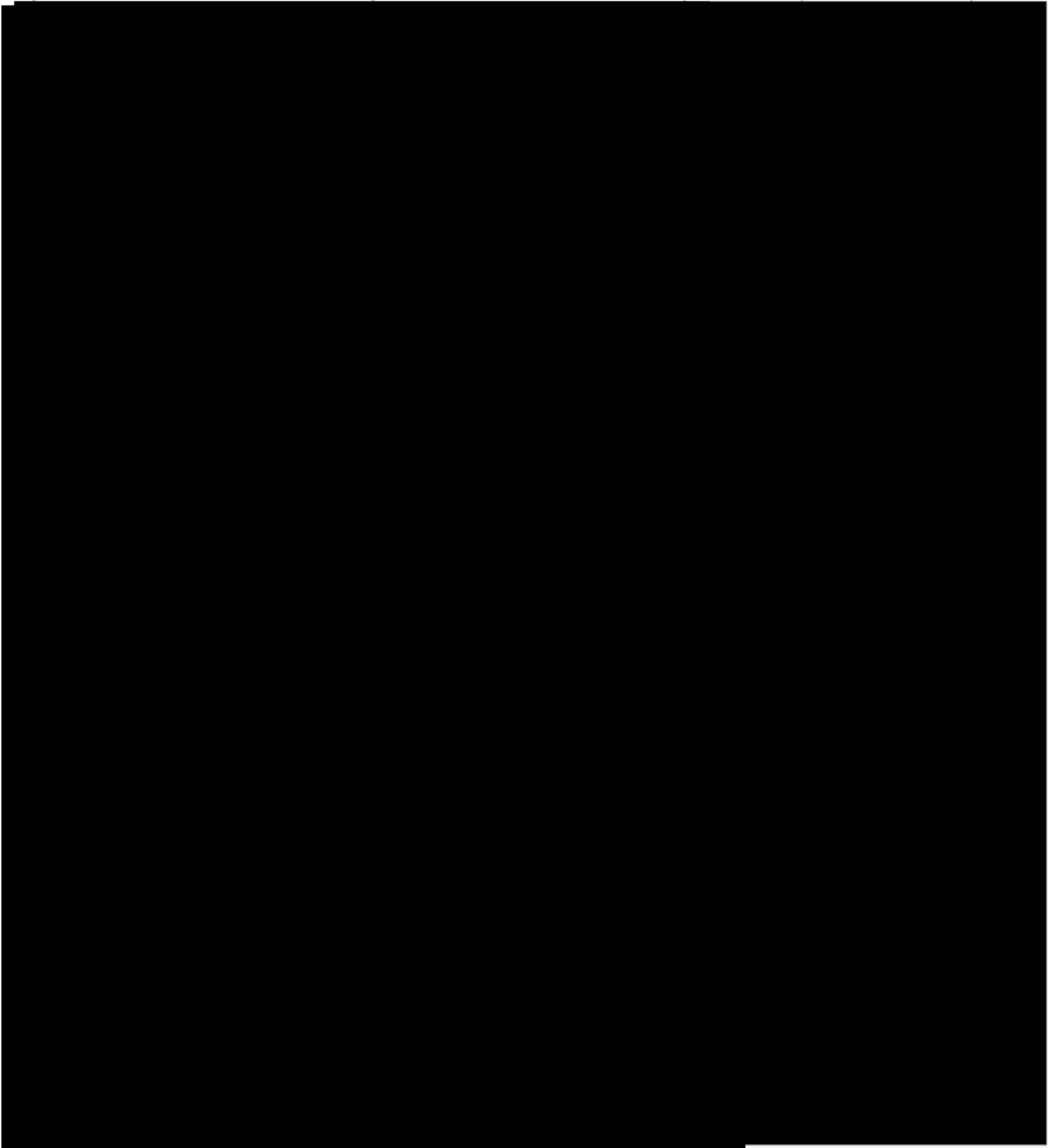
Downstream Bandwidth (in Mbps)

Upstream Bandwidth (in Mbps)

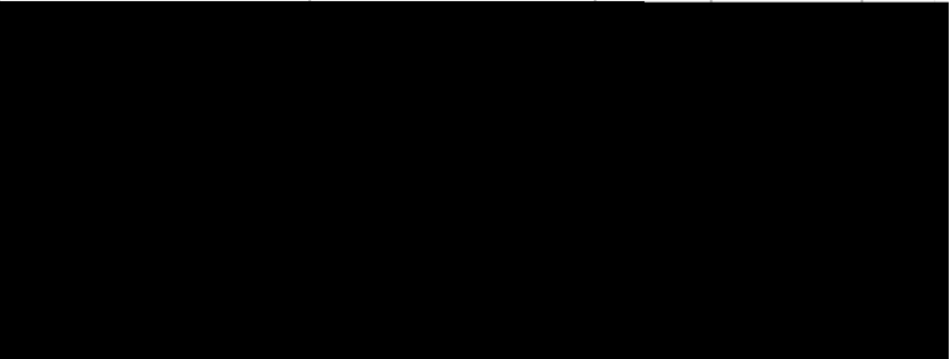
Consumer

Business / Govt

Total



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

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Optical Carrier/Fiber to the End User					

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Terrestrial Fixed Wireless					

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
	[REDACTED]				
Total					

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
Kentucky		[REDACTED]		
Virginia		[REDACTED]		
Total		[REDACTED]		

Fixed Voice Subscription (iVoIP)

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

State	Total	Consumer	Business / Govt
Kentucky		[REDACTED]	
Virginia		[REDACTED]	
Total		[REDACTED]	

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

State	Total	by End-user Type		by Bundle		by Last-mile Medium			
		Consumer	Business / Government	Sold w/ Internet	Sold w/o Internet	FTTP	Coax	Fixed Wireless	Copper
Kentucky		[REDACTED]							
Virginia		[REDACTED]							
Total		[REDACTED]							

(RETAIN FOR YOUR RECORDS)
Form 477 Filing Summary

FRN: 0023524705 | Data as of: Dec 31, 2020 | Operations: Non-ILEC | Submission Status: Original - Submitted | Last Updated: Mar 16, 2021 15:11:37

Filer Identification

Section	Question	Response
Filer Information	Company Name	All Points Broadband
	Holding Company Name	Virginia Everywhere, LLC
	SAC ID	
	499 ID	831251
Data Contact Information	Data Contact Name	[REDACTED]
	Data Contact Phone Number	(703) 554-6600
	Data Contact E-mail	[REDACTED]
Emergency Operations Contact Information	Emergency Operations Name	Don McElroy
	Emergency Operations Phone Number	(703) 554-6600
	Emergency Operations E-mail	[REDACTED]
Certifying Official Contact Information	Certifying Official Name	James Carr
	Certifying Official Phone Number	(703) 554-6600
	Certifying Official E-mail	[REDACTED]

Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	fcc477Deployment_20201231.csv	Mar 16, 2021 15:01:06	[REDACTED]
Fixed Broadband Subscription	fcc477_20201231.csv	Mar 16, 2021 15:01:27	[REDACTED]
Fixed Voice Subscription	voip_20201231.csv	Mar 16, 2021 15:01:46	[REDACTED]

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Kentucky	All Points Broadband	Optical Carrier/Fiber to the End User	[REDACTED]
		Terrestrial Fixed Wireless	
Maryland	All Points Broadband	Terrestrial Fixed Wireless	
Virginia	All Points Broadband	Terrestrial Fixed Wireless	
West Virginia	All Points Broadband	Terrestrial Fixed Wireless	

State	DBA Name	Technology	Blocks
Total			

Fixed Broadband Subscription

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

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Kentucky	Optical Carrier/Fiber to the End User	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	Terrestrial Fixed Wireless				
Maryland	Terrestrial Fixed Wireless				
Texas	Terrestrial Fixed Wireless				
Virginia	Terrestrial Fixed Wireless				
West Virginia	Terrestrial Fixed Wireless				
Total					

Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
[REDACTED]				

Downstream Bandwidth (in Mbps)

Upstream Bandwidth (in Mbps)

Consumer

Business / Govt

Total

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

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Optical Carrier/Fiber to the End User					

Technology	Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
Terrestrial Fixed Wireless	[REDACTED]				

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

Attachment 16 – RSSI Projection Shapefiles

-This page intentionally left blank as this is not a Wireless Project-



FTTH Rapid Assessment

Follow Up Results

TAKE RATE SURVEY

Altman Solon has conducted a Rapid primary research study to assess ARPU and take rate viability in underserved areas

Target Audience Process

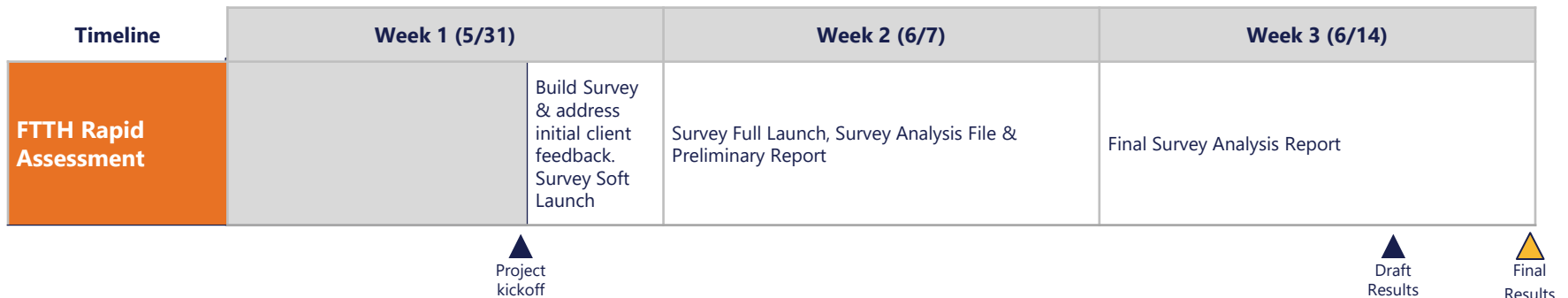
We targeted Zip Codes to address the following priorities:

- **Priority #1 (Underserved BB HHs):** Required 50% of HH within a zip code to have no cable or fiber availability

Qualification Criteria

Must

- Be above 18 years of age
- Purchase Wireless Phone or Home Internet
- Be either solely or partially involved in these purchasing decisions
- Not have access to Cable



Sources: Underserved BB Survey (N=1042), Altman Solon Research & Analysis

In our conjoint, respondents are asked to select product packages they are most likely to purchase

Sample Choice Based Conjoint (CBC) Question

If these were your only options, which would you choose?
(1 of 12)

	Satellite Internet (e.g. HughesNet, ViaSat)	Fiber (e.g. Verizon FiOs, MetroNet)	Fixed Wireless / Wireless Broadband (e.g. Belwave, Wisper, Nextlink)	DSL (e.g. Centurylink, Frontier, AT&T, Windstream)
Internet Technology	Satellite Internet (e.g. HughesNet, ViaSat)	Fiber (e.g. Verizon FiOs, MetroNet)	Fixed Wireless / Wireless Broadband (e.g. Belwave, Wisper, Nextlink)	DSL (e.g. Centurylink, Frontier, AT&T, Windstream)
Internet Speed	10 Mbps	1 Gbps	100 Mbps	5 Mbps
Landline Phone Offer	Not included	Unlimited	Not included	Unlimited
Monthly Offer Price	\$60	\$225	\$80	\$30
	Select	Select	Select	Select

Given what you know about the market, would you really buy the Internet Package you chose above?

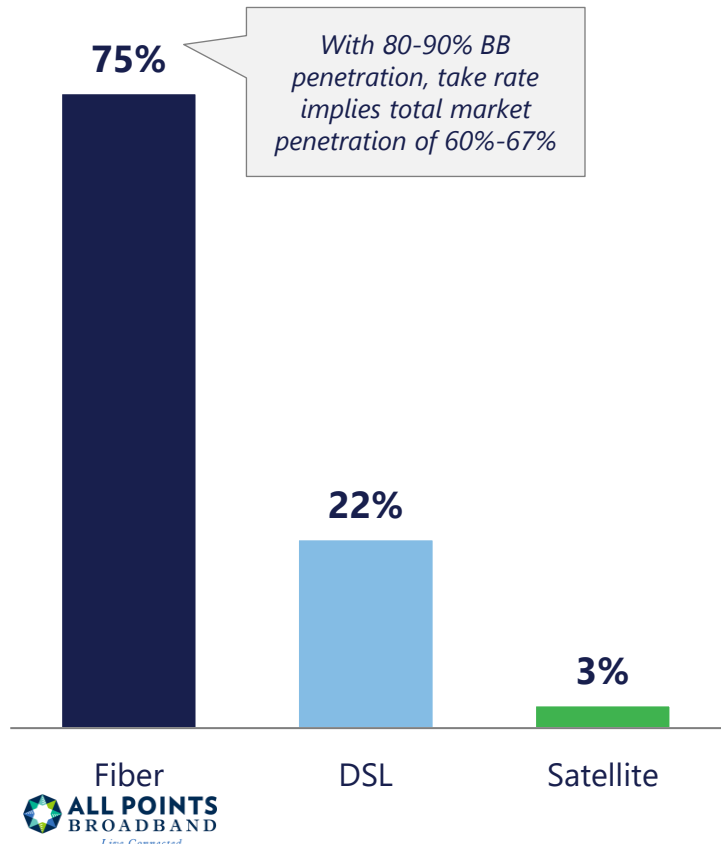
Yes No

- Respondents see 10-12 screens, and on each must select their **favored option out of the given options**, and indicate whether they would purchase this option in the marketplace
- A conjoint has two pieces:
 - **Attributes** (e.g., Internet Technology and Monthly Price)
 - **Levels** (e.g., DSL, Fiber, or \$60, \$120) which define the different options an attribute can take on
- By showing multiple randomized packages, conjoint surveys can determine the **relative value of product features based on survey-taker tradeoffs**
- Altman Solon uses Hierarchical Bayes estimations to determine **relative importance of each attribute and level**

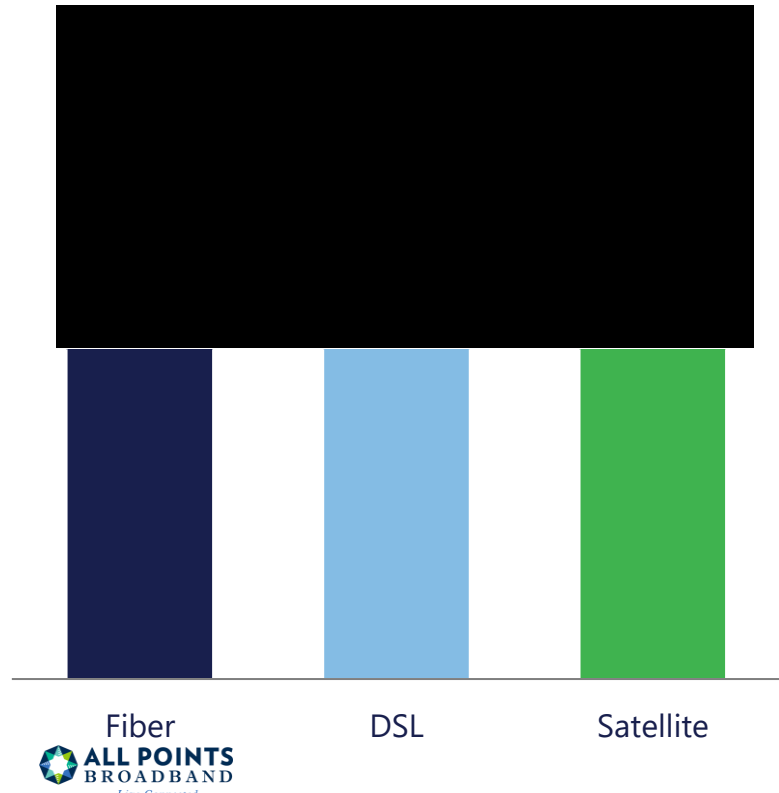
Note: This page would be preceded by a description page which defines each attribute and level, including the channels included in each channel package
Sources: Underserved BB Survey (N=1042), Altman Solon Research & Analysis

In Satellite + DSL markets with baseline prices, we observe 75% take rate and an ARPU well in line with APB targets

Take Rate by Technology
N=1042, % of simulated respondents



ARPU by Technology
N=1042, Simulated ARPU¹

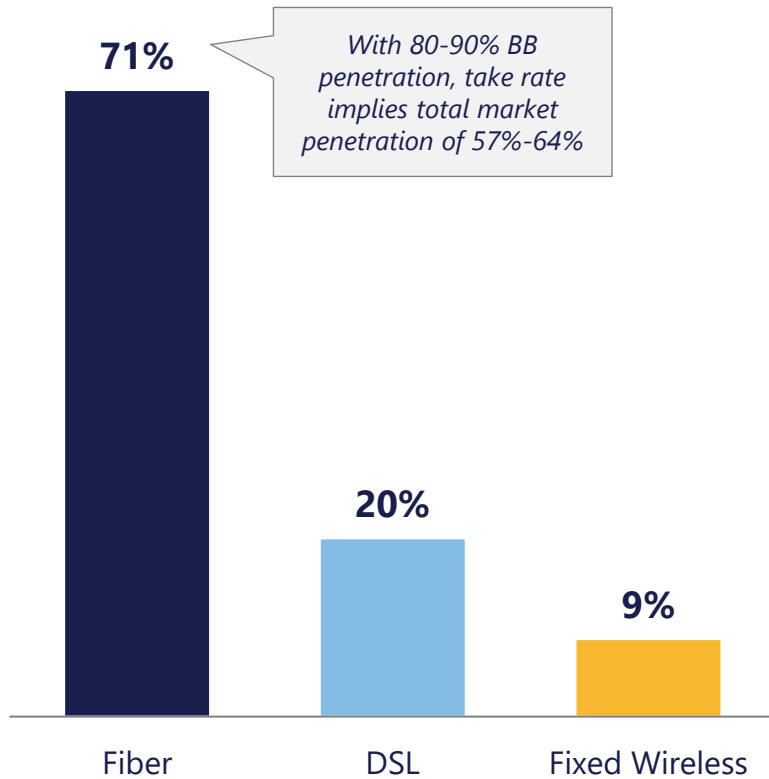


Notes: Calculated by multiplying take rate of each existing promo offer by cost of the promo offer
Sources: Underserved BB Survey (N=1042), Altman Solon Research & Analysis

In DSL + Fixed Wireless markets, we observe 71% take rate and an ARPU well in line with APB targets

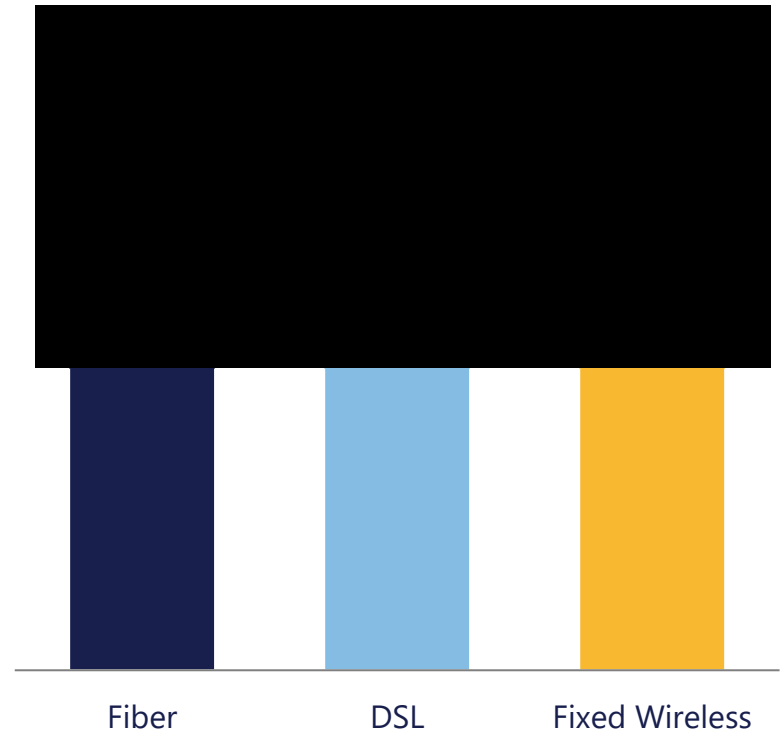
Take Rate by Technology

N=1042, % of simulated respondents



ARPU by Technology

N=1042, Simulated ARPU



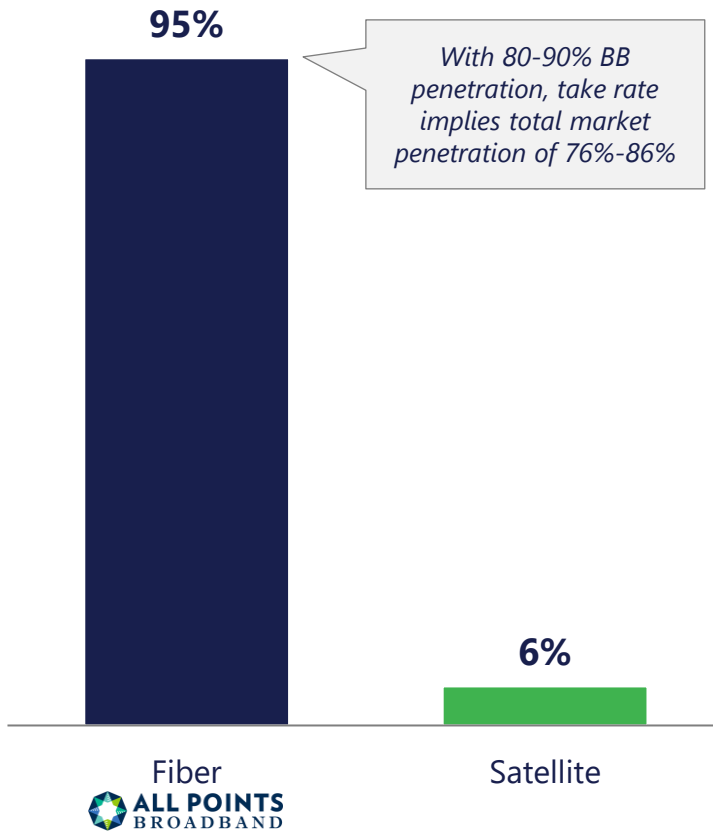
Notes: Calculated by multiplying take rate of each existing promo offer by cost of the promo offer
Sources: Underserved BB Survey (N=1042), Altman Solon Research & Analysis



In satellite only markets, we observe 95% take rate

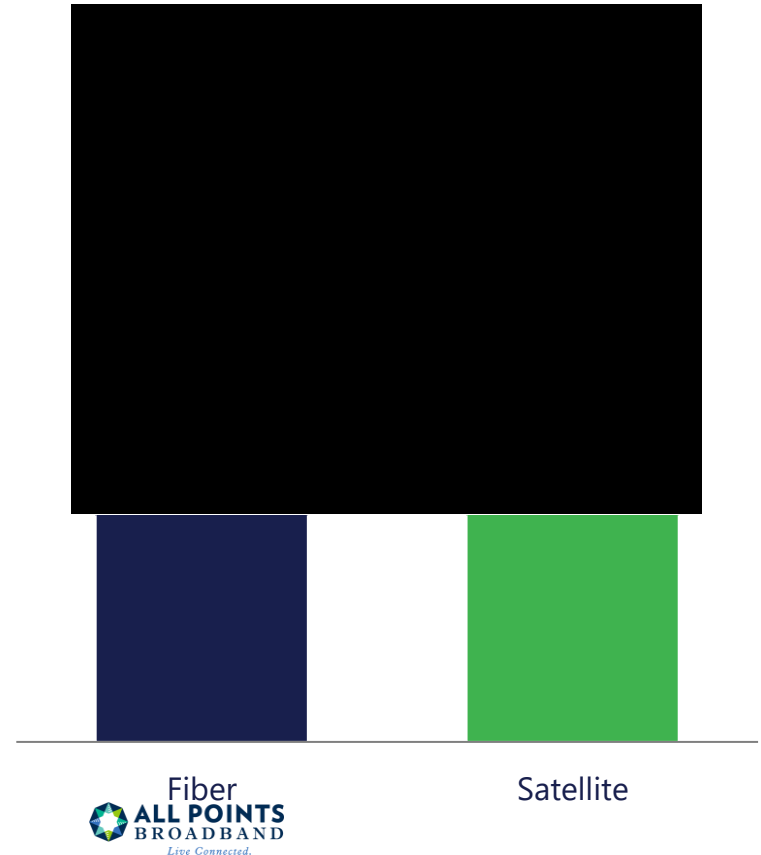
Take Rate by Technology

N=1042, % of simulated respondents



ARPU by Technology

N=1042, Simulated ARPU¹



Notes: Calculated by multiplying take rate of each existing promo offer by cost of the promo offer
Sources: Underserved BB Survey (N=1042), Altman Solon Research & Analysis

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Register Here for Fiber to Your Home

Gig Fiber Broadband in Your Home

All Points Broadband is engaged with its electric utility partners in several large scale fiber-to-the-home projects in Virginia. We are collecting information from customers in the zones below to ensure universal coverage and to finalize our construction sequence within each zone. All Point's standard FTTH architecture is capable of offering 10Gbps service to the home.

CROWD FIBER LANDING PAGE

To get started please follow these directions:

Step 1: Enter an address and press Go.

Step 2: Confirm your Pin/location is correct. If not, just grab it and move it to the correct location on the map. Press next.

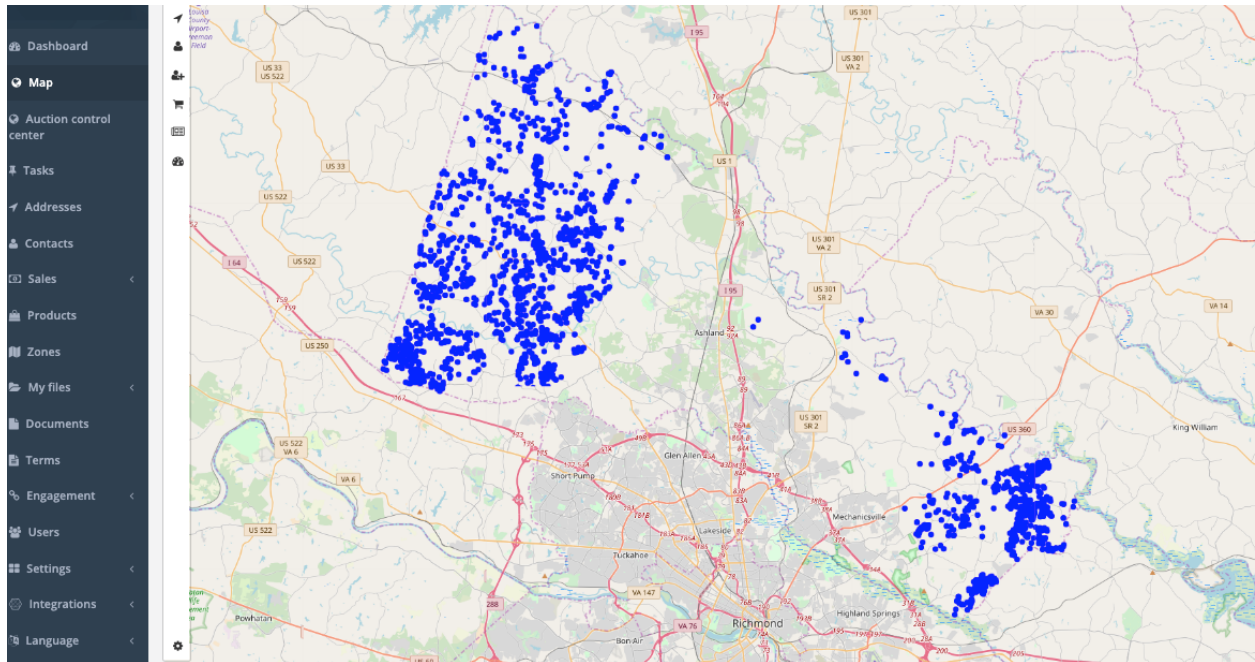
Step 3: Enter your contact information. Press next.

Step 4: Answer the quick questionnaire so we can provide the same great service for your friends and neighbors. Press next.

Step 5: Review your information and then tell everyone the great news and how to get registered. Submit

NO COMMITMENTS. PAY NOTHING UPFRONT. JUST SHOW YOUR INTEREST!

Pre-Registered Locations In Hanover County





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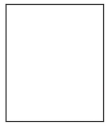
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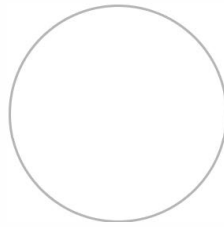
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Reliable High Speed Internet


Stream your favorite programs


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50/50

\$59.99

per month

- ✓ Equipment Install & Provisioning fee of \$199 with 1 year commitment
- ✓ Download up to 50 Mbps
- ✓ Upload up to 50 Mbps

GET STARTED

100/100

\$79.99

per month

- ✓ Equipment Install & Provisioning fee of \$199 with 1 year commitment
- ✓ Download up to 100 Mbps
- ✓ Upload up to 100 Mbps

GET STARTED

500/500

\$99.99

per month

- ✓ Equipment Install & Provisioning fee of \$199 with 1 year commitment
- ✓ Download up to 500 Mbps
- ✓ Upload up to 500 Mbps

GET STARTED

GIGABIT

\$119.99


per month


- ✓ Equipment Install & Provisioning fee of \$199 with 1 year commitment
- ✓ Download up to 1,000 Mbps
- ✓ Upload up to 1,000 Mbps

GET STARTED

Attachment 18 - All Points Broadband Digital Inclusion Academy Sample

My classes >

All Points Broadband Digital Inclusion Academy 

Class code: 7byvf6 

Lessons

People

CURRENT LESSONS

+ Add lessons

Google Workspace: Gmail

Learn the basic components of Gmail to help you send and receive emails.

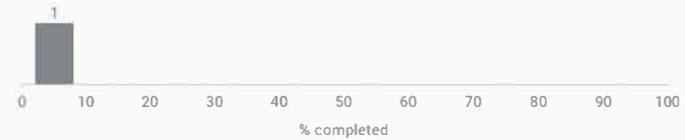
 1 activity

[View lesson](#)

[View materials](#)

Progress summary

Number of students and percent completed



[Videos watched](#)

[Projects submitted](#)

[Quiz results](#)

Use Digital Tools for Everyday Tasks

Learn to communicate more efficiently through emails, internet search, and digital documents.

 7 activities

Progress summary

Number of students and percent completed

1

Avoid Online Scams

Learn to identify and avoid online scams by analyzing a real-life situation in a group.

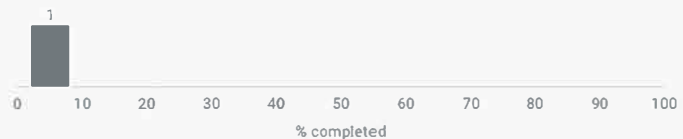
1 activity

[View lesson](#)

[View materials](#)

Progress summary

Number of students and percent completed



[Videos watched](#)

[Projects submitted](#)

[Quiz results](#)

Build Healthy Digital Habits

Create a healthy technology balance by reflecting on digital habits with one of three creative projects.

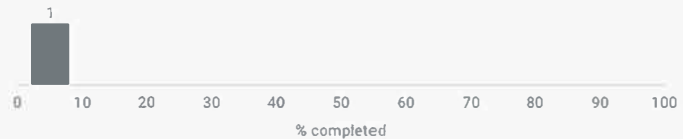
4 activities

[View lesson](#)

[View materials](#)

Progress summary

Number of students and percent completed



[Videos watched](#)

[Projects submitted](#)

[Quiz results](#)

Edit Your Resume

your resume to make it stronger and more appealing to an employer.

Progress summary

Number of students and percent completed

Use Google to Get a New Job

Conduct a successful job search using digital tools.

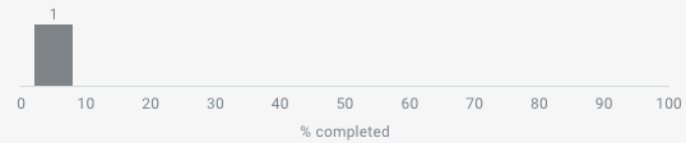
7 activities

View lesson

View materials

Progress summary

Number of students and percent completed



Videos watched

Projects submitted

Quiz results

Create a Budget in Google Sheets

Learn to make good financial decisions by researching and comparing costs and spending in a spreadsheet.

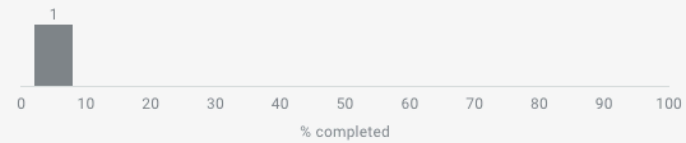
5 activities

View lesson

View materials

Progress summary

Number of students and percent completed



Videos watched

Projects submitted

Quiz results

Plan and Budget

alyze spending, research costs, and plan for purchases using a spreadsheet.

Progress summary

Number of students and percent completed

[View lesson](#)

[View materials](#)

[Videos watched](#)

[Projects submitted](#)

[Quiz results](#)

Google

Track Your Monthly Expenses

Use a spreadsheet to track your monthly expenses.

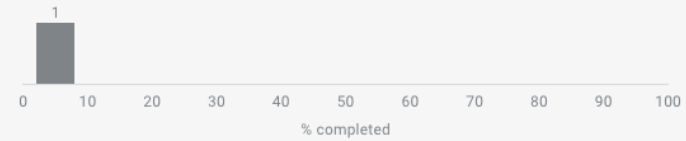
📅 1 activity

[View lesson](#)

[View materials](#)

Progress summary

Number of students and percent completed



[Videos watched](#)

[Projects submitted](#)

[Quiz results](#)

Connect and Collaborate From Anywhere with Digital Tools

Improve your digital collaboration and communication skills using online tools.

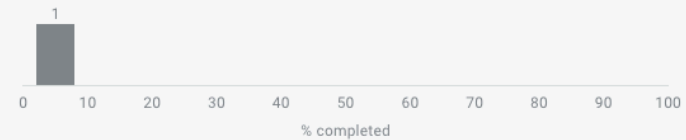
📅 1 activity

[View lesson](#)

[View materials](#)

Progress summary

Number of students and percent completed



[Videos watched](#)

[Projects submitted](#)

[Quiz results](#)

Welcome All Points Broadband Customer!



START LEARNING

[Browse our lessons](#) to start learning new skills.

My classes

All Points Broadband Digital Inclusion Academy 

Class code: 7byvf6

Current lessons

- [Google Workspace: Gmail](#)
0/1 activities completed
- [Use Digital Tools for Everyday Tasks](#)
0/7 activities completed
- [Avoid Online Scams](#)
0/1 activities completed

Hanover County

Blueprint to Broadband Internet

Strategies for Implementation



Broadband Advisory Committee
Approved 10-22-2020



Goal

Hanover County understands the need for universal broadband internet access is essential for our community. It is necessary to support business, education endeavors, public safety, and everyday life. Therefore, we support the development and implementation of a Broadband plan to extend the broadband network to the unserved and underserved areas of the County consistent with goals set by the Governor's Chief Broadband Advisor.



Speed

The preferred speeds, at a minimum, are 25Mbps / 3Mbps speeds for broadband service. This is the industry standard for fixed broadband speed published by the Federal Communications Commission (FCC) in the 2019 Broadband Deployment Report. It is also the minimum broadband speed recognized by most federal and state broadband funding opportunities.

Where satellite and mobile wireless (cellular) broadband are the only option for the purposes of this initiative they are not solely considered as sustainable broadband/internet options.



Delivery Methods

We envision a diverse network delivery consisting of fiber and fixed wireless options dependent on existing infrastructure, geography and cost.



Cost

The most attractive proposals for broadband service will be ones that provide services at market rate or other reasonable price points that will take into account the underserved and lower income needs of some Hanover citizens. Consideration will also be given for customer choice and options for various service levels.

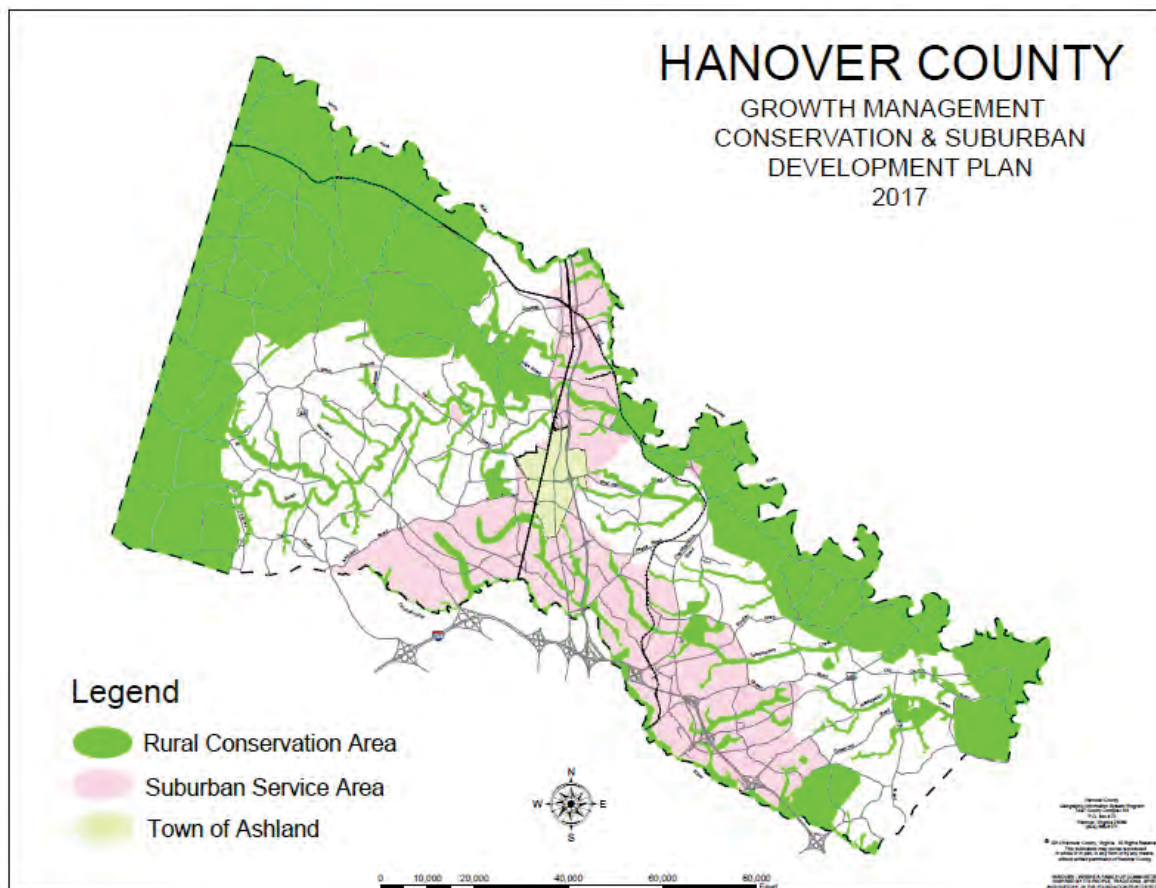


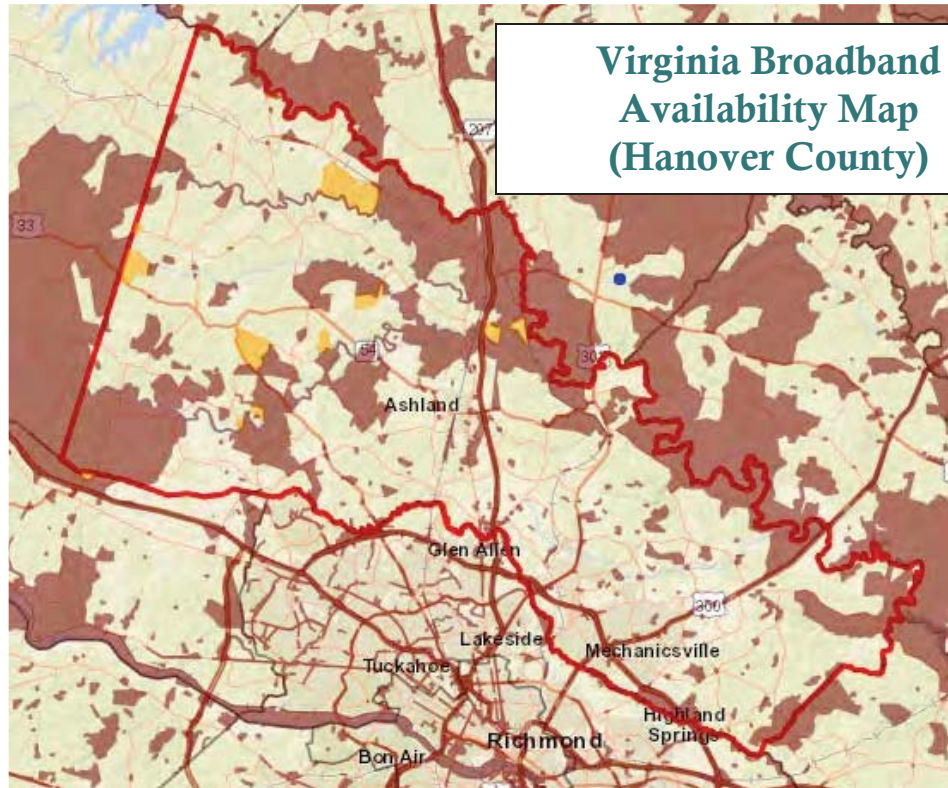
Introduction

Hanover has a number of unserved pockets with no reasonable broadband internet options available. In addition, many areas are considered underserved with substandard service for our residents. However, the majority of the residents have access to broadband internet service. This is due to the fact that the vast majority of residents live in the suburban area with higher densities and more commercial businesses where broadband internet is available. There are also areas within the designated rural/agricultural portions of the County that have access. The unserved population is in the mostly rural/agricultural areas that are generally along the borders with surrounding counties although there are exceptions



The Growth Management Conservation and Suburban Development Plan map is below. The pink area represents the suburban portion of the County, green is rural conservation and the white is planned to remain agricultural.

The Virginia Broadband Availability Map of Hanover County shows the unserved areas (brown) and underserved areas (yellow). As noted above they are generally within the rural conservation and agricultural areas. It has generally been acknowledged that this map understates the size of the unserved and underserved areas but that should not affect the general location.





Virginia Broadband Availability Map (Hanover County)

-  Unserved - below or equal to 10 Mbps download and 1 Mbps upload
-  Underserved - greater than 10 Mbps download and 1 Mbps upload and less than 25 Mbps download and 3 Mbps upload

Hanover is primarily served by two wired internet service providers, Comcast and CenturyLink. These providers do not overlap even though there is no regulatory requirement that they not overlap. The providers report it is not cost effective to make the sizable infrastructure capital investment and incur the ongoing operating expenses in an area that already has a service provider. Furthermore, broadband expansion grants are not available for areas that already have internet service.

Hanover partnered with Comcast in 2019 to apply for a Virginia Telecommunications Initiative (VATI) grant, which was unfortunately unsuccessful. In 2020 Hanover partnered with CenturyLink and Comcast to submit two VATI grant applications. As of the preparation of this report the awards had not been announced.

Hanover also worked with two fixed wireless internet service providers (WISP) that were willing to install the necessary equipment at no cost to the County. It was the Board of Supervisors' policy that tax payer funds were not to be expended on providing internet service. Unfortunately, these no-cost providers were both unsuccessful due to being undercapitalized and lack of the business and technical expertise necessary. The lesson learned was that the selected internet service provider partner must be well capitalized, have a proven business model, successfully executed projects and demonstrated ability to secure and administer broadband internet service grants.



Delivery Models

Board Policy Item: Options are as follow:

1. The State and/or Federal Government could define the need, develop the solution and then implement it.

Pros, the governments are providing considerable funding and by contracting directly with the service providers they are cutting out additional bureaucratic levels and reducing administrative costs.

Cons, not likely to happen. Both State and Federal governments have established funding opportunities for private broadband internet service providers such that the governments do not need to be directly involved.

2. Private service providers independently implementing broadband solutions.

Pros, purely a private service provider effort and the provider responsible for securing grants.

Cons, private service provider not likely to independently enter into a locality without some involvement by the local government. And, as we have experienced, private providers will expect a financial contribution by the government.

3. Establish a Broadband Service Authority/Service District with taxing authority with authority to partner with a service provider to implement solutions.

Pros, the service authority/Service District does not necessarily have to be countywide, it could be limited to a specific geographic area where the broadband service will be provided with the taxes assessed to those areas. This also reduces the involvement of the local government officials.

Cons, residents are all in or all out of the service authority/service district. If a district is created all residents are taxed whether they have service or not.

4. Develop a local government utility like structure for delivery of broadband internet services.

Pros, the local government would be in complete control of the service.

Cons, developing a utility from the ground up is an expensive and time intensive endeavor with a large capital investment up front. Would likely not be cost effective given the limited size.

5. Establish a public/private partnership with third party private broadband internet service providers to encourage expansion of broadband service area. The private broadband internet service provider must demonstrate it is well capitalized; possess sufficient resources to provide design, implementation, operation and maintenance services; have a demonstrated record of success and have been successful obtaining and managing State and Federal grants.

Pros, ability to leverage the expertise of the private providers while still having local government involvement yet with less staff time. The most widely used model in Virginia.

Cons, will need a local government funding source in addition to grant funds to make applications competitive.



Recommendation: Select Delivery Model 5, public/private partnership, and proceed with process to secure and enter into the necessary agreement(s).

Strategies to Facilitate Achievement

A. Administrative Resources – Investment of Dedicated Staff Resources

- A Deputy County Administrator and the Director of Information Technology have been assigned the responsibility to facilitate grant applications, build coalitions, foster relationships with providers, and conduct data collection, etc. In addition, the County Administrator, the Deputy County Administrator for Internal Services, and other County technical staff will support county efforts to educate, encourage, and facilitate the expansion of broadband solutions to our residents.
- The county will continue to pursue legislative advocacy efforts with our state and federal representatives to increase resource availability for providers to expand broadband infrastructure.
- Work with regional partners to identify mutual needs and benefits of collaboration.
- Work to date by County staff is summarized in **Appendix 1**.



Board Policy Item: Consider establishment of a new position (Director- Broadband and Technology Development) would have expertise and knowledge of broadband internet technology, understand FCC, be very knowledgeable on and experienced with grants, experience working with a broadband internet service provider(s) and perform advocacy on behalf of the County.

B. Focus Efforts of Regional Workgroup

In 2017 a Regional Broadband Workgroup was formed including Ashland, Charles City, Chesterfield, Cumberland, Fluvanna, Goochland, Hanover, Louisa, New Kent, Powhatan, and PlanRVA. Hanover has actively participated in the regional meetings since the group was formed. Previous meetings have included discussions with providers, representatives from the Governor’s Office, Commonwealth of Virginia’s Broadband Team, Center for Innovative Technology, and the United States Department of Agriculture (USDA) Rural Development office.

Hanover will continue to participate on the Regional Workgroup and in addition will work directly with adjacent localities when considering broadband deployment strategies.





C. Citizen & Business Resources

- Website containing plans
- Updates on county progress
- Improved Maps
- List of providers offering service
- Community Survey – broadband availability/need
- Speed test opportunities for residents to share speeds of existing service
- Brochure with Frequently Asked Questions (FAQ's)
- Economic Development staff will discuss broadband availability/needs during business visitations



D. Increased Local Access (\$100,000 Investment)

Establish enhanced opportunities for citizens to access broadband internet at local access points through expanded Hot Spots on and within public facilities and include parking lot coverage.

- Pamunkey Regional Libraries – Hanover Branches
- Parks & Recreation Community Centers
- Hanover County Public Schools
- Hanover County Fire Stations
- Hanover County Courthouse Complex
- Support Hanover County Public Schools and the Pamunkey Regional Libraries initiatives to provide students and residents in rural unserved areas with local access via mifi hot spots.

Develop partnerships with the business community to promote additional hot spot sites and expand internet accessibility.

- Business community partnerships to promote initiative
- Highlight business hot spot locations
- Local partnerships for expanded service



E. Commission Engineering and Implementation Plans

Board Policy Item: The County should consider partnering with one or more internet service providers and commit funding for necessary engineering, implementation plans and support for preparing and submitting grant and other necessary applications. The plans will define focus areas, appropriate technology, cost estimates and time frames to accomplish expansion efforts. The benefit of the engineering and implementation plans is they will allow the County to target the focus of implementation consistent with goals set by the Governor’s Chief Broadband Advisor. The effort will also provide the County with improved data and more accurate broadband availability maps to



facilitate provider expansion and support future funding requests. In addition, it will identify where additional middle mile fiber installations would expand opportunities for greater citizen access to broadband.

The agreement with the selected internet service provider partner should allow the partner to pursue State and Federal broadband expansion grants as the grants require the involvement of an ISP, the County cannot be the sole applicant. (See item VIII for details).

Prior to completion of a study, the County will continue to refine its mapping of the unserved and underserved areas. The underlying data will include miles of both public and private roads, and the number of potential connections. Maps in **Appendix 2** show the unserved areas more precisely defined by the County.

F. Open Door – Private Providers

All providers are welcome and encouraged to expand broadband internet service to Hanover citizens. We support and encourage private enterprise success and given that the county is not positioned to serve as an internet service provider nor are there County, State or Federal regulation that limit the ability of internet service providers to expand or enter into Hanover.

G. Foster Partnerships – Focus on Providers

Hanover will focus on fostering partnerships with providers in order to facilitate expansion of service to unserved & underserved areas of the county. Pursuit of state grant and funding opportunities require partnerships between local governments and private providers. Other federal or private funding opportunities may be more successful with similar partnerships.



H. Leverage Federal & State Funding Opportunities

The County is generally not eligible to apply on its own for broadband grants. The grants reviewed to date require the applicant to be an internet service provider or an internet service provider in partnership with the local government. As such the County will work with internet service providers to evaluate federal and state grant or loan opportunities to determine if it is in the best interest of the county to pursue as a funding opportunity. It is important to leverage federal and state funding opportunities, but requirements including partnerships, maps, plans, restricted service areas may make it impossible to pursue.



- Community Development Block Grant (CDBG) – Broadband Planning Grant – Virginia Department of Housing and Community Development
- Virginia Telecommunication Initiative (VATI) – Virginia Department of Housing and Community Development
- Rural eConnectivity Pilot Program (ReConnect Program) – United States Department of Agriculture
- Federal Rural Digital Opportunity Fund – United States Federal Communications Commission

Information for the grant programs is included in **Appendix 3**

I. Infrastructure Support – Leveraging Tower Network

- County allows access/lease of space on County assets such as emergency communications towers, water tanks and other suitable facilities, and to work with providers in a manner that is encouraging, flexible, cost effective, and values the investment of broadband providers.
- County has a staff liaison for all necessary permits and approvals for broadband infrastructure.
- County understands that more than one third-party provider may be interested and involved in the provision and expansion of broadband services but is mindful to avoid a detrimental effect on the service through frequency conflicts.
- To the extent feasible, the County is open to assisting broadband providers with pursuing federal or state broadband funding opportunities to help offset the capital costs of broadband access and capacity.



The maps provided in **Appendix 4** depict the County’s communication towers along with propagation maps for a typical fixed wireless broadband installation.

Board Policy Item: Investigate the ability/authority of the County to establish requirements that new developments extend existing broadband internet infrastructure and/or install new infrastructure for new developments. Could include the inclusion of spare conduits for use by others.



J. Existing Infrastructure

- In addition to the County's tower resources there are a large number of other vertical assets. The map provided in **Appendix 5** depicts all of the vertical assets in Hanover.
- There are a variety of existing private fiber operators in Hanover. **Appendix 6** includes mapping of the existing fiber assets. Please note the maps do not show the existing Comcast and CenturyLink facilities.

K. Financial Incentives

Board Policy Item: Consider the investment of local resources to leverage private, State &/of Federal funding to support the expansion of broadband internet service as follows:

- The County should evaluate the potential of providing tax increment incentives to providers in-partnership with the Hanover County Economic Development Authority (EDA).
- County should consider a partnership with the EDA to establish a fund to provide grants, matches, low interest loans or other incentives to providers.

L. Legislative Advocacy

- The county will continue to pursue legislative advocacy efforts with our state and federal representatives to increase resource availability for providers to expand broadband infrastructure.

Board Policy Items

1. Consider and select the most feasible preferred method of providing broadband internet service.
2. Consider establishment of a new position (Director- Broadband and Technology Development) would have expertise and knowledge of broadband internet technology, understand FCC, be very knowledgeable on and experienced with grants, experience working with a broadband internet service provider(s) and perform advocacy on behalf of the County.
3. The County should consider partnering with one or more internet service providers and commit funding for necessary engineering, implementation plans and support for preparing and submitting grant and other necessary applications.
4. Investigate the ability/authority of the County to establish requirements that new developments extend existing broadband internet infrastructure and/or install new infrastructure for new developments. Could include the inclusion of spare conduits for use by others.
5. Consider the investment of local resources to leverage private, State &/of Federal funding to support the expansion of broadband internet service



Next Steps Toward Universal Coverage

The County should continue to partner with incumbent internet service providers to apply for grants to cover the costs to provide for the logical expansion of their existing networks into unserved and underserved areas. As it is anticipated the incumbent providers will be unable to provide countywide coverage the County should also proceed with the recommended delivery model. As discussed in the Delivery Models section, this model is to establish a public/private partnership with third party private broadband internet service providers to encourage expansion of broadband service area. The private broadband internet service provider must demonstrate it is well capitalized; possess sufficient resources to provide design, implementation, operation and maintenance services; have a demonstrated record of success and have been successful obtaining and managing State and Federal grants.



County of Hanover
Connect Hanover
Access to Broadband Internet
Marketing Plan

Initiative Overview

In July 2021, Hanover County announced the “Connect Hanover” initiative to make broadband services available to residents living in unserved areas of the County. Hanover is working with All Points Broadband and CenturyLink to identify those areas of the County that lack access to a broadband internet. All Points Broadband is partnering with Dominion Energy Virginia and Rappahannock Electric Cooperative (REC), who will provide “middle-mile” fiber.

Each of these internet service providers have their own marketing plans and campaigns for their service. However, Hanover plans to supplement these efforts with marketing promotions that target Hanover County residents and businesses. This initiative will utilize print and in-person solutions, community partnerships, social media and websites, and email. These marketing efforts, which will leverage a number of community partners, will focus on educating citizens on:

- What is Connect Hanover (explain the initiative and benefits);
- Internet Service Provider options;
- List of services/plans offered;
- How to get service;
- Status of the project.

In addition, the Connect Hanover initiative goes beyond just a broadband grant program. The County will be working with Comcast to identify in-fill homes and businesses within their service area that do not have broadband internet. In the Comcast service area, Economic Development will be reaching out to businesses that have internet service, but do not have adequate or reliable internet service. Initial discussions with Comcast show they have an interest in assisting with various internet service deficiencies.

Physical and In-person Solutions

The County intends to utilize a variety of print solutions to promote the Connect Hanover initiative including:

- The County distributes a print newsletter, Hanover Review, that is mailed to all County residents and businesses semi-annually (45,000 homes and businesses). The County will have articles on the Connect Hanover initiative in this mailer.
- The County has a close relationship with the local newspapers. We have already had articles on Connect Hanover published and will continue to work on additional articles.



County of Hanover
Connect Hanover
Access to Broadband Internet
Marketing Plan

- The County uses local newspapers to meet advertising requirements for various legal obligations, so additional ads will be placed in the newspaper promoting Connect Hanover.
- An informational flyer will be developed and distributed to various community centers and local libraries.

The County intends to host community meetings at local sites throughout the project. On September 2, the County sponsored a community meeting on the Connect Hanover initiative at the Old Church Community Center, which is located in the heart of an unserved area. The meeting was attended by 60 citizens. Additional community meetings will be scheduled at the:

- Montpelier Community Center
- Old Church Community Center
- Rockville Community Center
- County Administration Building

The County will also provide project updates at periodic Board of Supervisor meetings and will present updates at various community events such as the Chamber of Commerce Coffee Club breakfast.

Community Partnerships and Resources

The County intends to utilize these partners to share the Connect Hanover message. These organizations will be asked to include information about the initiative on their websites and social media with links to County resources.

- Town of Ashland
- Hanover Chamber of Commerce
- Dominion Energy Innovation Center
- Market Ashland Partnership
- Downtown Ashland Association
- Hanover County Public Schools
- Pamunkey Regional Library
- All Points Broadband
- Dominion Energy Virginia
- Rappahannock Electric Cooperative
- CenturyLink/Lumen

The County will dedicate staff resources to support the Connect Hanover program. Since this initiative has a definitive timeline for completion, these may be contract resources.



County of Hanover
Connect Hanover
Access to Broadband Internet
Marketing Plan

Social Media and Websites

The County has established an informational web page on the Connect Hanover initiative and is promoting the initiative on our facebook page. Although the County will continue to include information about Connect Hanover on the main County facebook and website, the intent is to **create a separate facebook page and web page specifically to promote Connect Hanover**. These sites will use info-graphics and pictures will be posted as progress is made. Links to these specialized sites will be available from the main County sites.

The County intends to take advantage of key participant interviews and quotes of support and encouragement and will **develop targeted videos that will be posted on our YouTube site** with links from the Connect Hanover web page and facebook page. The videos will focus on the benefits of the initiative and how it will help the business area of the group being interviewed/quoted. These will be professionally developed videos. This will include leaders from Board of Supervisors, State and federal politicians, County government, Schools, Internet Service Providers, and local community organizations.

The County intends to **develop a GIS-based custom mapping application that will provide project progress updates** to the public. The County will coordinate with All Points and CenturyLink to obtain address data for homes/businesses that have been connected or are in the next phase of the construction project. This data will be used in the custom mapping application.

Email

The County will also utilize email to get the message out. The County has email lists for interested parties specific to broadband, but also to various other areas of interest (Planning, Parks & Recreation, Economic Development, etc.). The County also distributes the Hanover Access News to digital subscribers. Hanover County Public Schools have already sent out an email supporting the Connect Hanover initiative to parents of 17,000 school age students presently enrolled in Hanover Schools.

Attachment 20 – Project Management Team Bios

Key Individual	Roles and Responsibilities	Previous Experience
<i>Jimmy Carr – CEO (APB)</i>	CEO, APB	See below
<i>Sean Flora</i>	Director of Fiber Construction, APB	See below
<i>Brandon Ogilvie</i>	CFO, APB	See below
<i>Tom Innes</i>	SVP of Public-Private Partnerships, APB	See below
<i>Chuck Hogg</i>	SVP of FTTH Deployments, APB	See below
<i>Darren Glatt</i>	Partner and Co-Head of Infrastructure Investing, Searchlight Capital Partners	See below
<i>Ajit Pai</i>	Partner, Searchlight Capital Partners	See below
<i>Ed Diggs</i>	Manager, Rural Broadband, Dominion	See below
<i>Mark Ponton</i>	Director of Broadband and Fiber Services, Rappahannock Electric Cooperative	See below
<i>Frank Harksen</i>	Deputy County Administrator, Hanover County	See below
<i>Kevin Nelson</i>	IT Director, Hanover County	See below

Jimmy Carr, Chief Executive Officer

Jimmy is the Chief Executive Officer of All Points Broadband. In this role he is responsible for the Company's strategic direction and is focused on expanding All Points' portfolio of public-private partnerships to provide fiber-to-the-home access to currently unserved areas in partnership with investor-owned and cooperative electric utilities.

After growing a successful rural-focused internet service provider in another market, he founded All Points to bring state-of-the-art connectivity to underserved communities in Virginia, Kentucky and throughout the mid-Atlantic. Jimmy is a former member of the Board of Directors of the Wireless Internet Service Providers Association and former Chairman of its Government Affairs Committee. He represents the rural broadband industry on the Virginia Broadband Advisory Council and has testified before the U.S. Senate and Virginia General Assembly as an expert on rural broadband deployment.

Jimmy was the principal architect of All Points' innovative strategy to partner with investor-owned and cooperative electric utilities to achieve universal FTTH access in APB's partner jurisdictions. He led the APB team that developed and implemented this new approach with two electric utilities and five counties on Virginia's Northern Neck and has developed the specific electric utility partnerships that will apply this approach for this project.

Before joining the telecommunications industry, Jimmy was an associate with the law firm of Sullivan & Cromwell LLP. He previously served as Virginia's Assistant Secretary of Transportation in two administrations, directing legislative and regulatory affairs for six agencies with an annual budget in excess of four billion dollars. He is also the founder and principal architect of the public-private partnership to build the 55-mile Virginia Capital Trail.

Jimmy earned a law degree and an MBA at the University of Virginia, where he was the Managing Editor of the *Virginia Law Review*, President of the JD/MBA society and inducted into the Raven Society. He is an Order of the Coif graduate of the law school and received the business school's Shermet Award and Faculty Award for Academic Excellence. Jimmy graduated from Davidson College *cum laude* and with departmental honors.

Attachment 20 – Project Management Team Bios

Sean Flora, Director of Fiber Construction

Sean Flora is All Points' Director of Fiber Construction, overseeing the Company's OSP engineering and construction activities. Sean and his team are responsible for delivering best-in-class, fiber-to-the-home networks to All Points' partners and customers.

Prior to joining All Points, Sean spent 19 years at Cincinnati Bell in roles of increasing responsibility, including Senior Manager of OSP Construction and Contracts and Senior Manager of OSP Engineering. Sean was instrumental in Cincinnati Bell's FTTH deployments in multiple states.

Sean has been recognized as an ICT Visionary by ISE Magazine. He has served on the Fiber Broadband Association's Technology Committee, as well as the Education Subcommittee for the past 5 years. Sean holds a B.A. in Communications from Northern Kentucky University.

Brandon Ogilvie, Chief Financial Officer

Brandon leads All Points Broadband's finance and capital investment initiatives and oversees its accounting and administrative functions. He launched his career in Silicon Valley managing high-frequency product lines for telecommunications and networking applications. After relocating to Virginia, he formed a renewable energy company with a team of talented individuals where, as CFO, he led the development and financing of bioenergy facilities with rated outputs up to 50 MW. More recently he served as President and CFO of a national fuel distributor for five years.

Brandon earned an MBA from the University of Virginia's Darden School of Business where he was inducted into the Raven Society, received the Shermet Award, and was awarded the Thomas G. Labrecque Scholarship for Ethics. He graduated from Purdue University with highest distinction earning a B.S. and M.S. in Civil Engineering.

Tom Innes, Senior Vice President, Public-Private Partnerships

Tom works with All Points' partners to structure public-private partnerships that bring high-quality, FTTH broadband to unserved areas. He also manages APB's human capital functions.

Tom holds an MBA and a Master of Arts in Public Policy from the College of William & Mary. Prior to William & Mary, Tom was a civil engineer at The Louis Berger Group. He graduated from the Virginia Military Institute, where he earned a B.S. in Civil Engineering. He is a native of Richmond, Virginia and is an Eagle Scout.

Chuck Hogg, Senior Vice President for Fiber to the Home

Chuck is All Points' SVP for Fiber to the Home deployments and technical lead for All Points' groundbreaking partnerships with electric utilities. Prior to joining All Points, Chuck co-founded and spent 13 years growing Shelby Broadband, a highly successful, rural-focused ISP acquired by All Points in 2018.

Chuck is a recognized industry leader and pioneer in the conversion of fixed wireless networks to FTTH. He has served on the Board of the Wireless Internet Service Providers Association for 10 years and currently serves as its Vice Chairman. Chuck's career has included owning and partnering in various internet and technology companies, including Shelby Broadband, QuickLink Wireless, VIA Studio, FatHosting, AC Ventures, and Avolutia Ads. Chuck earned his BSBA in Information Systems from Xavier University.

Attachment 20 – Project Management Team Bios

Darren Glatt, Director and Operating Partner

Mr. Glatt is a Partner and Co-Head of Infrastructure Investing at Searchlight Capital Partners, overseeing the firm's efforts in the Technology, Media and Telecommunications ("TMT") sectors. Mr. Glatt is actively engaged in All Points' public-private partnerships. Prior to joining Searchlight in 2013, Mr. Glatt worked as a Partner in the Private Equity Group at Apollo Management, L.P., where he focused on both equity and credit investing in a range of industries that included TMT, Consumer, Leisure and Shipping, among others. Mr. Glatt also held positions at Apax Partners and The Cypress Group. He started his career at Bear Stearns in 1998 in New York. Mr. Glatt is currently a member of the Boards of Bezeq and B Communications Ltd., and formerly a member of the Boards of Charter Communications, Rackspace, Ocean Outdoor, PatientPoint, MediaMath, 160over90, PlayPower, Veritable Maritime and Core Media. Mr. Glatt received a BS from The George Washington University and an MBA from Harvard Business School.

Ajit Pai, Director and Operating Partner

Ajit Pai is a Partner at Searchlight Capital Partners who focuses on the firm's broadband and digital infrastructure efforts and is one of Searchlight's representatives on All Points' Board of Directors. Ajit served as Chairman of the FCC from January 2017 until January 2021. During Pai's tenure at the FCC as both Commissioner and Chairman from 2012-2021, he implemented major initiatives to help close the digital divide including the Connect America Fund and the Rural Digital Opportunity Fund; advance U.S. leadership in 5G, Open Radio Access Networks, Wi-Fi 6, and other wireless technologies; promote innovation; protect consumers, public safety, and national security; and make the agency itself more open, transparent, and data-driven. Earlier in his career, he served in various positions of increasing responsibility at the FCC, the U.S. Department of Justice, and the U.S. Senate. Before becoming a Commissioner at the FCC, he worked as a Partner at the law firm of Jenner & Block and served as in-house counsel at Verizon. Mr. Pai graduated with honors from Harvard University in 1994 and from the University of Chicago Law School in 1997.

Ed Diggs, Manager, Rural Broadband Program

Mr. Diggs is a Manager in Dominion Energy Virginia's Rural Broadband Program and will be responsible for coordinating the company's participation in this project. Mr. Diggs led Dominion's Rural Broadband Program during its pilot phase and was instrumental in creating the framework that Dominion and All Points now apply to all of their coordinated projects to deliver universal FTTH broadband in currently unserved areas.

Prior to launching Dominion's Rural Broadband Program, Mr. Diggs held a series of roles of increasing responsibility within the Company, including Project Manager, Right of Way Design Supervisor and Electric Distribution Design Supervisor.

Mark Ponton, Director of Broadband and Fiber Services

Mr. Ponton is Rappahannock Electric Cooperative's Director of Broadband and Fiber Services. In this role, he is responsible for directing REC's fiber utility network project, negotiating contracts with broadband service providers and working with counties in REC's service territory on broadband initiatives. Mr. Ponton has coordinated high-level design activities with All Points and will coordinate REC's ongoing involvement in this project.

Prior to his current role, Mr. Ponton was REC's supervisor of SCADA load management and telecommunications. He earned an associate's degree of Applied Science in computer technology from ECPI and a bachelor's degree in leadership and management from the University of Mary Washington.

Attachment 20 – Project Management Team Bios

Frank Harksen, Deputy County Administrator, Hanover County

Mr. Harksen is the Deputy County Administrator of Hanover County and will have overall responsibility for coordinating the County's involvement in this project and reporting to the County Administrator and the Board of Supervisors. Mr. Harksen has served in this role for nearly 15 years.

Kevin Nelson, IT Director, Hanover County

Mr. Nelson is the Director of the County's IT department and will serve as the County's technical lead for this project. Mr. Nelson has been working on the County's broadband initiative for the past 5 years.