

Application to DHCD Submitted through CAMS

County of Sussex

Sussex County Universal Broadband Coverage

Application ID: 86509132021104304
Application Status: Pending
Program Name: Virginia Telecommunications Initiative 2022
Organization Name: County of Sussex
Organization Address: 20135 Princeton Road
Sussex, VA 23884-0397
Profile Manager Name: Brenda Drew
Profile Manager Phone: (804) 834-1302
Profile Manager Email: bhdrew@sussexcountyva.gov

Project Name: Sussex County Universal Broadband Coverage
Project Contact Name: Richard Douglas
Project Contact Phone: (434) 246-1000
Project Contact Email: rdouglas@sussexcountyva.gov
Project Location: 20135 Princeton Road
Sussex, VA 23884-0391
Project Service Area: Sussex County

Total Requested Amount: \$4,896,892.00
Required Annual Audit Status: Pending Review

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Budget Information:

Cost/Activity Category	DHCD Request	Other Funding	Total
Telecommunications	\$4,896,892.00	\$1,678,571.00	\$6,575,463.00
Construction	\$3,574,731.00	\$1,225,357.00	\$4,800,088.00
Construction Related Soft Costs	\$1,126,285.00	\$386,071.00	\$1,512,356.00
Other: Electronics	\$195,876.00	\$67,143.00	\$263,019.00
Total:	\$4,896,892.00	\$1,678,571.00	\$6,575,463.00

Budget Narrative:

Questions and Responses:

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1. Project Description and Need

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

Answer:

The geographic area for this proposed Universal Service Coverage Fiber to the Home project includes all areas of Sussex County's 496 square miles that currently do not have a high-speed broadband option. Sussex County is located 45 miles to the southeast of the capital city of Richmond and 25 miles from the tri-cities area. Sussex County generally is bounded to the north by the County of Prince George, to the west by Dinwiddie County and Greensville County, to south Southampton County and the east Surry County. The boundary for the project, as depicted in the Project Area map, will be the entire area encompassed by the Sussex County lines. The project area was selected after consultation between Sussex County and RURALBAND and meets the eligibility criteria established by the Virginia General Assembly and the Department of Housing and Community Development ("DHCD") for a Virginia Telecommunication Initiative ("VATI") award. It aligns with the footprint of RURALBAND long-term expansion plan to implement broadband infrastructure incrementally from areas within and near our electrical utility service areas and adjacent to communities where RURALBAND currently provides or is expanding broadband service. Attachment #1 shows this area.

This VATI project will provide Universal Broadband Access to all Sussex County residents/businesses and in specific the 2,267 locations that are currently unserved and have no service available to them.

Through RURALBAND, residents and businesses will have access up to 1 Gbps/1 Gbps FTTH high-speed broadband availability, which in addition to everyday use will also support virtual education, home-based businesses, and telecommuting, better positioning the county to support an evolving work force and enhance quality of life.

Utilizing technology most appropriate to the site not only meets the grant requirements, it provides for an overall cost effectiveness. The selected areas represent unserved communities where the cost to connect them is prohibitive without assistance.

In response to COVID-19 and the changing business environment, numerous private and public employers are offering the opportunity for workers to telecommute. Like most counties in Virginia, Sussex County Schools had to implement a plan to accommodate 100% virtual learning. In addition, many of the County's college students are also starting the academic year virtually.

In addition to virtual learning at schools, Sussex County residents have been required to telecommute for their jobs and utilize Telemedicine for their health care needs.

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

Answer:

The address points for the project area chosen for this VATI grant submission currently do not have any providers offering high-speed service as set out by DHCD at greater than 25 Mbps/3Mbps. The information was primarily acquired via sources such as Broadbandnow.com, The Virginia Broadband Availability Map and Integrated Broadband Planning and Analysis Toolbox and research from RURALBAND.

The Town of Wakefield and Waverly are located near but not included in the project area. The above-mentioned towns are currently served by Spectrum at speeds above 25/3Mbps.

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

Answer:

Portions of Sussex County have previously received RDOF or CAF II funding. Attachment 2 identifies the areas in which RURALBAND has been awarded Federal funds in Sussex County.

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:

See attachment 3 for RDOF Areas Awarded to RURALBAND.

There are 1,026 passings in RDOF awarded areas within the VATI application area. Stated RDOF passings are in census block ID, 510538401001, 510538406001, 510818801011, 510818801013, 511498504002, 511498505012, 511498505013, 511752001001, 511752001002, 511752002001, 511818602002, 511818602003, 511818602004, 511838701001, 511838701002, 511838701003, 511838702011, 511838702012, 511838703001, 511838703002, 511838703003, 511838704001

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:

Attachment 4 shows the currently underserved portions of Sussex County that do not have access to a 10/1 mbps service. Thus, the same area would be defined as not having 25/3 mbps service either. This was derived from the DHCD and Virginia Tech availability map, <https://broadband.cgib.vt.edu/IntegratedToolbox/>. The VATI project will provide broadband access to 2,267 locations in Sussex County that are currently unserved based off of 25/3 mbps criteria and have no service available to them. RURALBAND has accounted for a 10% overlap for current wireline projects with the stated number of locations to be served. This percentage of overlap was derived from locations that will have to be traversed through during middle mile construction to enable RURALBANDs FTTH service to reach the underserved areas. If awarded funding through this process said funding would not be applied to serve end users in overlap areas. RURALBAND will build middle mile infrastructure through served areas that will have to be traversed through during middle mile construction to enable RURALBANDs FTTH service to reach underserved areas. If awarded funding through this process said funding would not be applied to serve end users in overlap areas currently served.

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

Answer:

- There are an estimated total of 2,267 passings. There are 2,223 residential passings, 33 business passings, and 11 community anchors in the project area. RURALBAND was able to determine the businesses and community anchors in the project by overlaying address points on a map of the submitted project area.
 - There are an estimated total of 1,359 passings located in RDOF awarded areas in which 1,332 are residential passings, 20 are business passings and 7 are to be considered community anchors. RURALBAND was able to determine the businesses and community anchors in the previously awarded RDOF by overlaying address points on a map of awarded RDOF funding area.
 - 106 locations will require special construction cost. RURALBAND created a geo boundary around existing and planned infrastructure and queried the number of passings located over 1,000 feet from infrastructure adjacent to state maintained roads.
 - 106 locations will receive broadband access under the special construction cost. This cost will mitigate the added cost for drop installation. This is based on the proximity of the 106 locations and their vicinity to existing and planned infrastructure. RURALBAND requires aid to construction cost (special construction cost) for locations located over 1,000 feet from infrastructure adjacent to state-maintained roads.
 - There are 2,267 locations that do not have 10/1 mbps. Attachment 4 shows the underserved portions of Sussex County that do not currently have access to a 10/1 service. This was derived from the DHCD and Virginia Tech availability map, <https://broadband.cgit.vt.edu/IntegratedToolbox/>. The VATI project will provide broadband access to 2,267 locations in Sussex County that are currently unserved based on the 10/1 criteria and have no service available to them.
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:

There is no response here as this proposal is a wired, FTTH project.

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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:

RURALBAND will provide a multi-tiered Fiber to the Home service offering to accommodate individual needs from a price-data speed prospective. Speeds are both dedicated bandwidth from optical GPON ports and symmetrical. RURALBAND has no data caps.

25 Mbps - \$49/month 100 Mbps - \$74/month 1 Gbps - \$99/month

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:

RURALBAND, through a lease agreement with Prince George Electric Cooperative (PGEC) and Dominion Energy is currently deploying Fiber-to-the-Home (FTTH) Calix E7-2 Gigabit Passive Optical Network (GPON). Network topology and architecture will primarily be of OLTs (Optical Line Terminals), fiber optic cables/drops, optical splitters, and the Optical Network Terminations (ONTs). Network is designed to be redundant using the hub & spoke model to manage the ERPS ring using the Calix hardware supplemented by Juniper switches. The entire ERPS ring including radial connections are managed with substation electronics. All the fiber optic cables are designed and engineered as ADSS (All dielectric self supporting) with both underground and overhead deployment in communication space.

The network is capable of handing all existing census blocks for schools, fire stations, businesses and residential locations with symmetrical upload/download speeds up to 1 GBPS connect.

Current state network design can be expanded to all members/customers requiring XGS-PON (10gbps) or NG-GPON (10 or 100 gbps) as the architecture is scalable and will support the GPON architecture.

The most common cause of congestion on a FTTH network is lack of CDN capacity. Netflix, Google, Facebook, Microsoft Hulu, Disney+, etc. are delivering the MAJORITY in terms of bits/sec into the RURALBAND network. With the exception of Disney+ all of these sources of content have direct peering or multi-lateral peering with Pixel Factory. In the case of Google, Facebook, Microsoft and Netflix Pixel has an on-prem cache appliance. This means that the transit connections are offloaded from carrying all of this heavy traffic. Congestion is eliminated by connecting RURALBAND directly to where 80% of the content comes from. As CDN pipes or caches fill up, Pixel has agreements in place to make those pipes and boxes larger to accommodate the traffic. This makes it essentially easy for RURALBAND, as long as the last mile capacity and the middle (MBC fiber long haul) is within the acceptable over-subscription ratio, the network will perform as expected.

Pixel rule of thumb for upgrading a CDN pipe or cache box depends on the CDN provider in question. Usually by the time we hit 50% capacity the CDN provider is going to help us upgrade. With DECIX taking

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over RVA-IX the largest independent carrier-neutral exchange in the work will be bringing its global peering customers and relationships right into the Pixel datacenter. This will help in keeping partners like Akamai that tend to run their CDN ports "hotter" than we may like on an upgrade plan that meets the needs of the exchange members (Akamai and DECIX have contracts in place that manage how much traffic can appear before an upgrade must be ordered).

Pixel will be peered at RVA-IX / DECIX Richmond with dual 100G connections and these can be scaled easily if more is needed.

Currently there are 40G of capacity from Pixel to RVAIX (2021) so the next round of upgrades will scale that 5x when it is installed in Fall 2021.

Material and equipment configuration:

Fiber Optic Cable:	ITU G.652
Fiber Optic Cable Color Identification and Coding:	ANSI/EIA-359-A
Optical Fiber Cable Color Coding:	ANSI/TIA/EIA-598-C
Requirements for Optic Fiber & Optical Fiber Cable:	GR-20-CORE
Ethernet Ring Protection Switching (ERPS):	ITU G.8032
Rapid Spanning Tree Protocol (RSTP):	IEEE 802.1w
Link Aggregation (LAG):	IEEE 802.3ad/802.1AX
Virtual Router Redundancy Protocol (VRRP) :	RFC 5798 Version 3 for IPv4/IPv6
Cable Manufacturer:	Prysmian
Remote Cabinets: Integration Kit	Fiber Active Cabinet 400 FPS-Series Rectifier
Splitters:	SFP+ from FS
GPON	ITU G.984
XGS-PON	ITU G.9807.1
NG-PON	ITU-G.989
Active Ethernet	IEEE 802.3z/ae
Transport	WS-C4500X-32 (CISCO)
GPON	OLTs/ONTs integrated 10Gb/s manufacturer

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Calix E7-2

RURALBAND (PGEC Enterprises LLC) currently operates 2 L3 10GBPS rings with 8 L2 network nodes. L3 area rings are all linked together with a multi-10GBPS fiber optic rings. All 10 nodes will be interconnected with at least 2 network failover paths in addition to the Calix E-7 nodes that will be part of ERPS ring (Hub and Spoke model).

All voice services will be derived from ONT ports with software configuration on Calix E-7 for VOIP telephone and facsimile services.

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

Answer:

This project will achieve Universal Fiber to the Home broadband coverage for Sussex County. RURALBAND will use existing PGEC middle mile assets to accomplish universal coverage throughout PGEC's electric system footprint within Sussex County. RURALBAND will utilize Dominion Energy assets to be constructed as middle mile support in accomplishing universal coverage throughout Dominion Energy's electric system. RURALBAND will construct the necessary infrastructure to fill any middle mile gaps as well as build the last mile in accomplishing universal coverage throughout Sussex County. RURALBAND will work through support of this agreement, if awarded, to provide service at no cost to those outside of the RURALBAND 1,000-foot threshold from planned or existing infrastructure. RURALBAND is committed to serving the underserved and will provide coverage to all under served locations within the project area.

11. **Project Readiness**

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

Answer:

This information has been provided directly to DHCD via email due to the Non-Disclosure Agreements in place.

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:

RURALBAND received a 2020 VATI grant for 2.25M with its partnership with Surry County. To date RURALBAND has designed and constructed 300.41 miles of middle mile fiber optic cable, passed 2,876 homes and businesses combined, designed and constructed 790 to the home drops and connected 790 accounts in Surry County through this partnership. This grant was for Universal Service Coverage of Surry County and this project is on schedule to be completed by 10/31/2021.

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:

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

Answer:

In addition to the financial support above, the County will provide support for the project by assisting with the acquisition permits. The County will also assist with local marketing of the availability of service to residential and business customers. RURALBAND will work with additional partners to provide updates and availability through various channels of communication.

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:

In addition to the financial support above, the County will provide support for the project by assisting with the acquisition permits. The County will also assist with local marketing of the availability of service to residential and business customers. RURALBAND will work with additional partners to provide updates and availability through various channels of communication.

a/b. RURALBAND utilizes a third-party internet sales platform that is embedded onto RURALBAND's dedicated website. The availability for service addresses to electronically apply for service is driven by opened shapefiles within the platform to determine eligibility. Residents can complete the service application on the portal or request a hard copy. RURALBAND has built a robust dedicated website at RURALBAND.coop, where all aspects of the internet offerings can be accessed – including interactive maps indicating areas of availability and progress on buildout areas. RURALBAND will send direct communications to all service addresses informing residents of service and directing them to the website for additional information. RURALBAND's program details are also communicated via several social media platforms and our local office maintains a member services staff to field program inquiries.

RURALBAND estimates the take rate for the projection is approximately 40% as demonstrated in other rural communities (Surry County and Prince George) we serve. The take rate was determined by averaging the number of passings/connections in other surrounding rural localities RURALBAND currently serves. Marketing efforts proposed for continued implementation for the broadband project include an aggressive direct mail campaign, community meetings, and outreach through the RURALBAND sales department. Additionally, advertising and marketing through social and traditional media will be ongoing, as well as mail inserts for our existing electrical utility customers.

RURALBAND will provide the Cooperative Living Room. RURALBAND will staff the Cooperative Living Room during normal business hours as an educational and support tool for the residents of Sussex County. The Cooperative Living Room will provide an educational experience for residents of Sussex County who desire to gain the best experience and value from a service previously not available.

Sussex County will partner with local libraries and workforce development initiatives to support digital learning within the community. RURALBAND will support the local speakers bureau to help residents understand best practices for utilizing broadband service TV streaming, social media, email utilization, and educational opportunities.

RURALBAND is actively engaged in local outreach activities, including but not limited to school events, community fairs, Rotary Club engagements, Chamber of Commerce involvement, etc.

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

Answer:

Key Staff

Title/Role

Casey Logan

President & CEO- Will provide a high level of oversight, providing knowledge and experience while executing other duties ensuring the success of the project.

Lane Chambers

General Manager- Will be overall responsible for the project. Lane will provide support at all levels. Lane will work with the localities directly communicating updates and progress reports. Lane will support the project with overall experience and knowledge.

Sarat Yellipedi

Chief Operation Officer- Overall responsible for the operations at PGEC, will work with providing necessary cooperative support for RURALBAND. Will work on IT front providing RURALBAND support as well.

Walter Chappell

VP of Operations- Responsible for coordinating operations resources and support from the cooperative. Will work closely with RURALBAND Manager of Engineering and Operations.

Justin Harville

Manager of Engineering and Operations- overall responsible for the design and construction of the project. Justin will oversee the construction, maintenance and engineering aspects ensuring the project remains on schedule.

Richard Douglass

County Administrator-Direct supervisor for the day-to-day operation of all county departments. Provides administrative support to the Board of Supervisors and implements directive from the board. Will serve as Project Administrator for the VATI project.

Beverly Walkup

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Responsible for the entry of status and progress updates in CAMS.

The grant management process will be completed through a cooperative effort between RURALBAND and Sussex County. RURALBAND has experience in this process through a previously awarded VATI grant. RURALBAND is well versed in the construction of broadband facilities as it currently provides coverage in portions of Sussex County, Prince George County and is finalizing universal broadband coverage in Surry County. RURALBAND has built a reliable and efficient contractor base capable of meeting the needs of this project. RURALBAND has dedicated contract staff to ensure the engineering and design aspects as well as any required permitting is completed on schedule and meets the standards set forth. RURALBAND will use current contract employees in the execution of the construction phase. The current contract staff has performed to or above standards on previous projects providing broadband coverage to the rural communities on Prince George Electric Cooperative and Dominion Energy electric systems. The RURALBAND staff will provide extensive industry knowledge in the design and construction process. RURALBAND staff will provide the necessary oversight in the execution of the contract pertaining to contract construction and design work. Sussex County has previous experience in this process in executing the prior broadband contract funded by the Tobacco Commission, and community development block grant (comprehensive community development) and indoor plumbing (rehabilitation) projects funded via DHCD. Sussex County and RURALBAND will meet monthly either virtually or in person. RURALBAND will provide to Sussex County project status updates and milestone completion updates. Sussex County will be responsible for updating the monthly status and milestones completed in the CAMS portal.

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:

This information has been provided directly to DHCD via email due to the Non-Disclosure Agreements in place.

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. \$ 5,107,140.00

b. 2,267

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19. Commonwealth Priorities (Up to 40 points)

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

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

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

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

Answer:

a. Schools, Churches, Libraries and Civic Organizations will be empowered with the ability to support the surrounding communities at yet a higher level with access to broadband. Given the recent pandemic organizations will have the opportunity to stay connected with those in which they support. Business previously not connected will benefit by the ability to provide online shopping options. Medical providers will be capable of providing virtual medicine options to support the grant area and surrounding communities. Offering a slice of normal in abnormal situations.

b.

Dominion Energy- as a middle mile provider the partnership with Dominion Energy will be a resource to complete the project in a timely manner.

The Cameron Foundation- the partnership between Sussex County and The Cameron Foundation will provide the additional financial support to expedite this deployment to meet the immediate needs of the citizens of Sussex County. This partnership will ensure the health and welfare of the citizens of Sussex County and the surrounding areas in which health care providers in Sussex County support.

VDOT, RURALBAND currently have active Blanket Land Use Permits within the project area that supports a timely and efficient process during all phases of the project.

Through the above partnerships and a cooperative effort, universal coverage for the project area will be a success and completed in a timely manner.

c.

FCC Life Line Program the FCC Emergency Broadband Benefit Fund and the VATI Special Construction Cost Allowance

Per 2010 census data Sussex County residents' per capita income is \$ 21,652 with 21.6 % of the citizens living at or below the poverty level. RURALBAND offers a package fitting the needs of citizens within the county meeting the requirements of the above mentioned programs.

The VATI Special Construction Cost Allowance will provide support in connecting home outside of RURALBANDS 1,000 foot threshold alleviating additional cost for the underserved in this project area. RURALBAND provides a subscriber option at 25/3 that meets the requirements for the Emergency Broadband Benefit Fund.

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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:

[Please see attachment 17 for a sample copy of the Sussex County Board of Supervisors resolution in support of this partnership, and attachment 18 for a copy of RURALBANDs internet pricing sheet.](#)

Attachments:

Map(s) of project area, including proposed infrastructure

Attachment1ProjectAreaMap55269132021122814.pdf

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

Attachment2DocumentationofFederalFundingArea55279132021122825.pdf

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

Attachment3RDOFAwardedAreasincludedinVATIApplication55289132021122839.pdf

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Documentation that proposed project area is unserved based on VATI criteria

Attachment4DocumentationUnservedAreaVATICriteria55299132021122855.pdf

Passings Form (Use template provided)

Attachment5Passingsform55309132021122911.pdf

Timeline/Project Management Plan

Attachment7TimelineProjectManagementPlan55389132021123217.pdf

Letters of Support

Attachment11LettersofSupport9132021124408.pdf

Two most recent Form 477 submitted to the FCC or equivalent

Attachment14TwomostrecentForm47755429132021123439.pdf

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

Attachment15PointandPolygonShapefiles9132021123700.zip

Optional

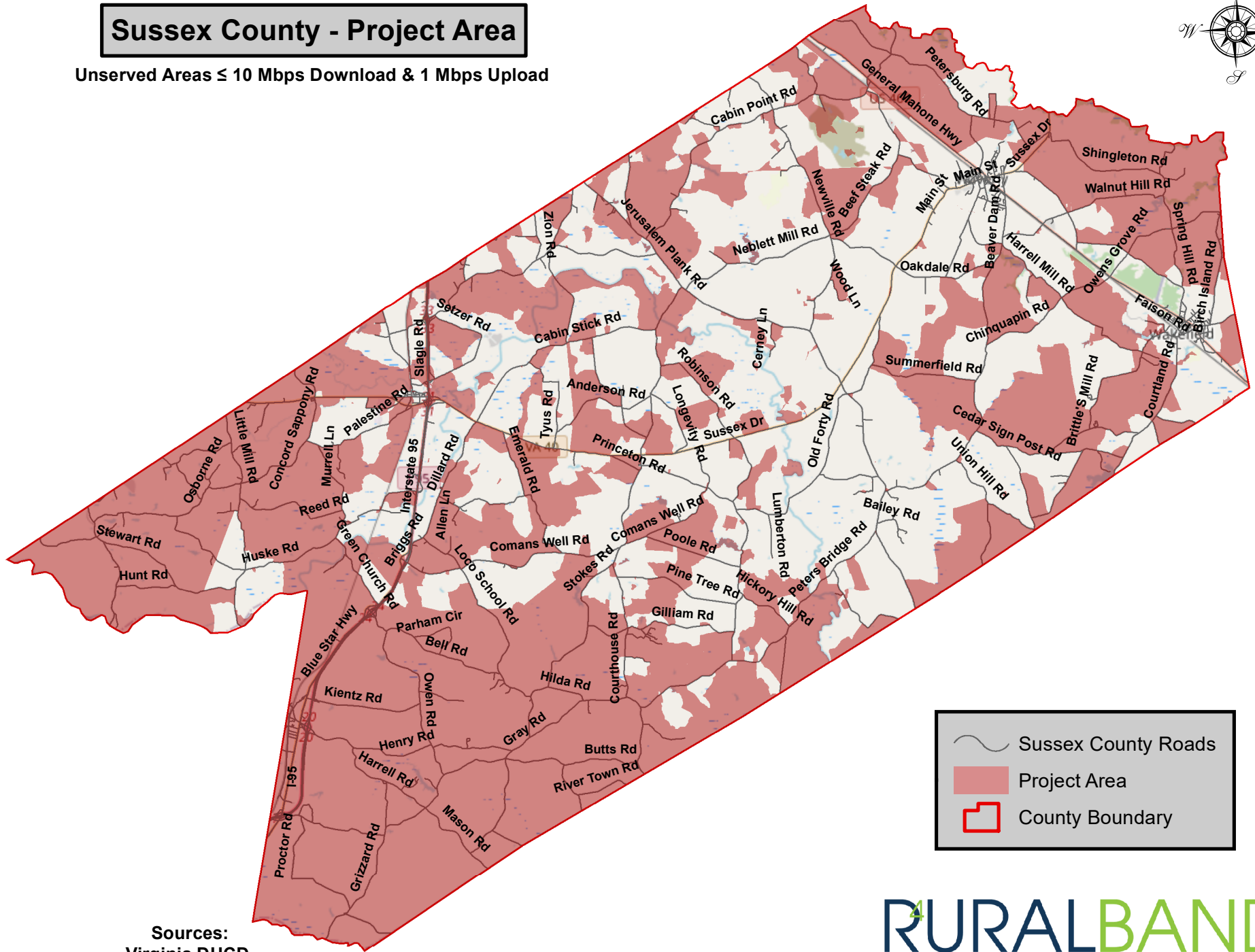
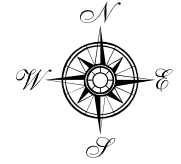
Attachment17Resolution9132021125757.pdf

Optional

Attachment18RuralbandPricingSchedule9132021125842.pdf

Sussex County - Project Area

Unserved Areas \leq 10 Mbps Download & 1 Mbps Upload

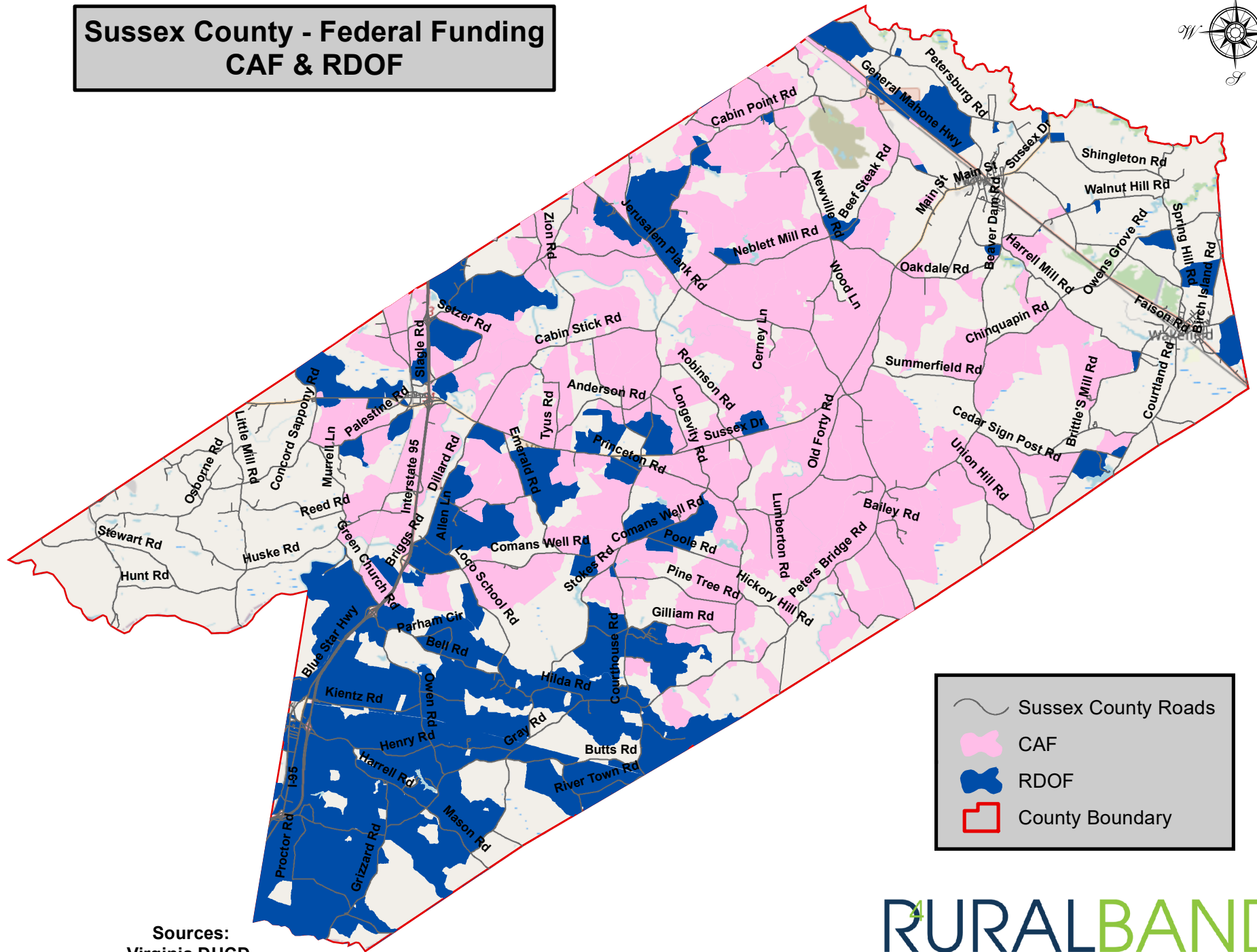
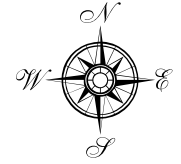


- Sussex County Roads
- Project Area
- County Boundary

Sources:
Virginia DHCD,
Virginia Geographic Information Network, and
FCC - Fixed Broadband Deployment June 2020 Data



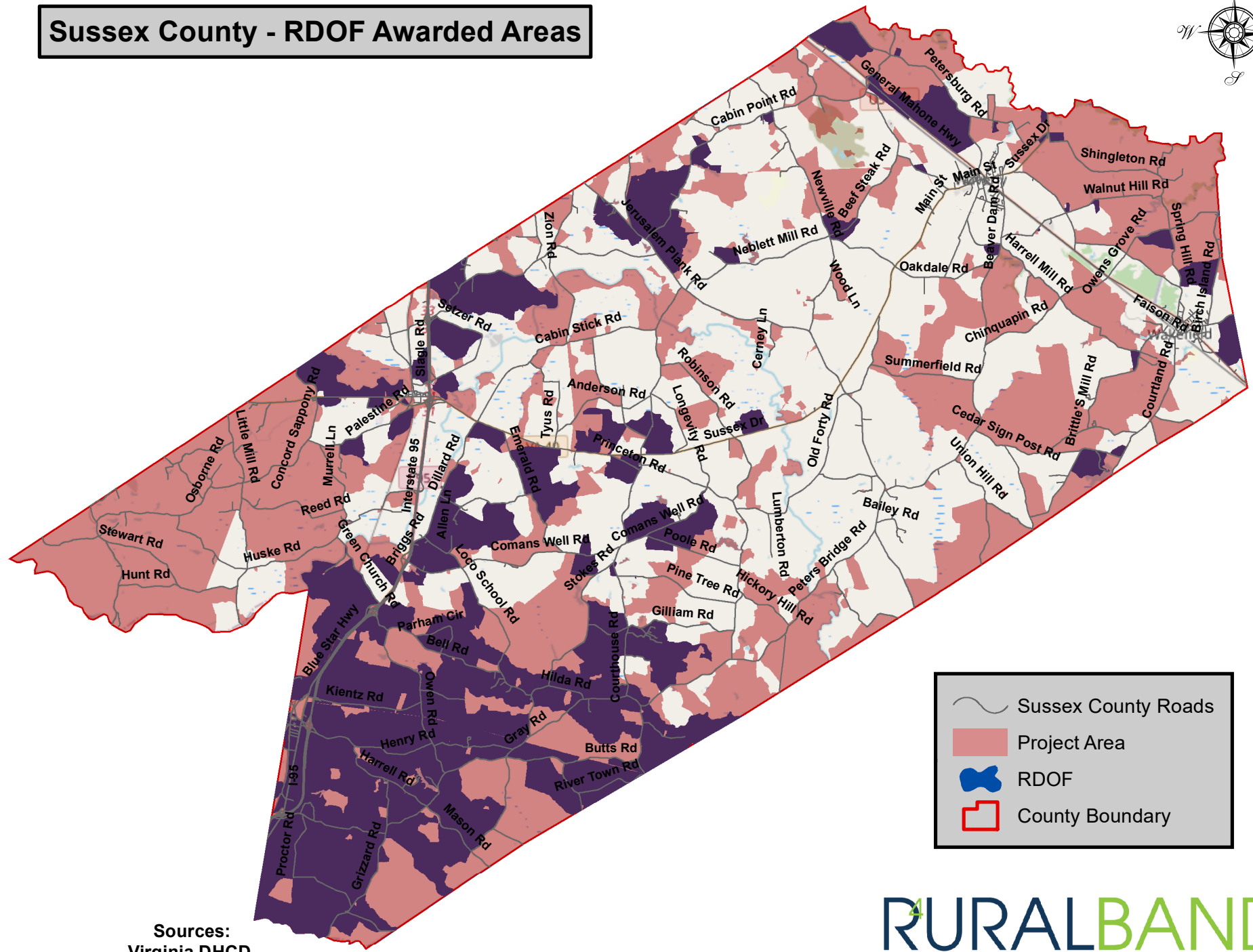
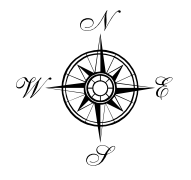
Sussex County - Federal Funding CAF & RDOF



	Sussex County Roads
	CAF
	RDOF
	County Boundary

Sources:
Virginia DHCD,
Virginia Geographic Information Network, and
FCC - Fixed Broadband Deployment June 2020 Data

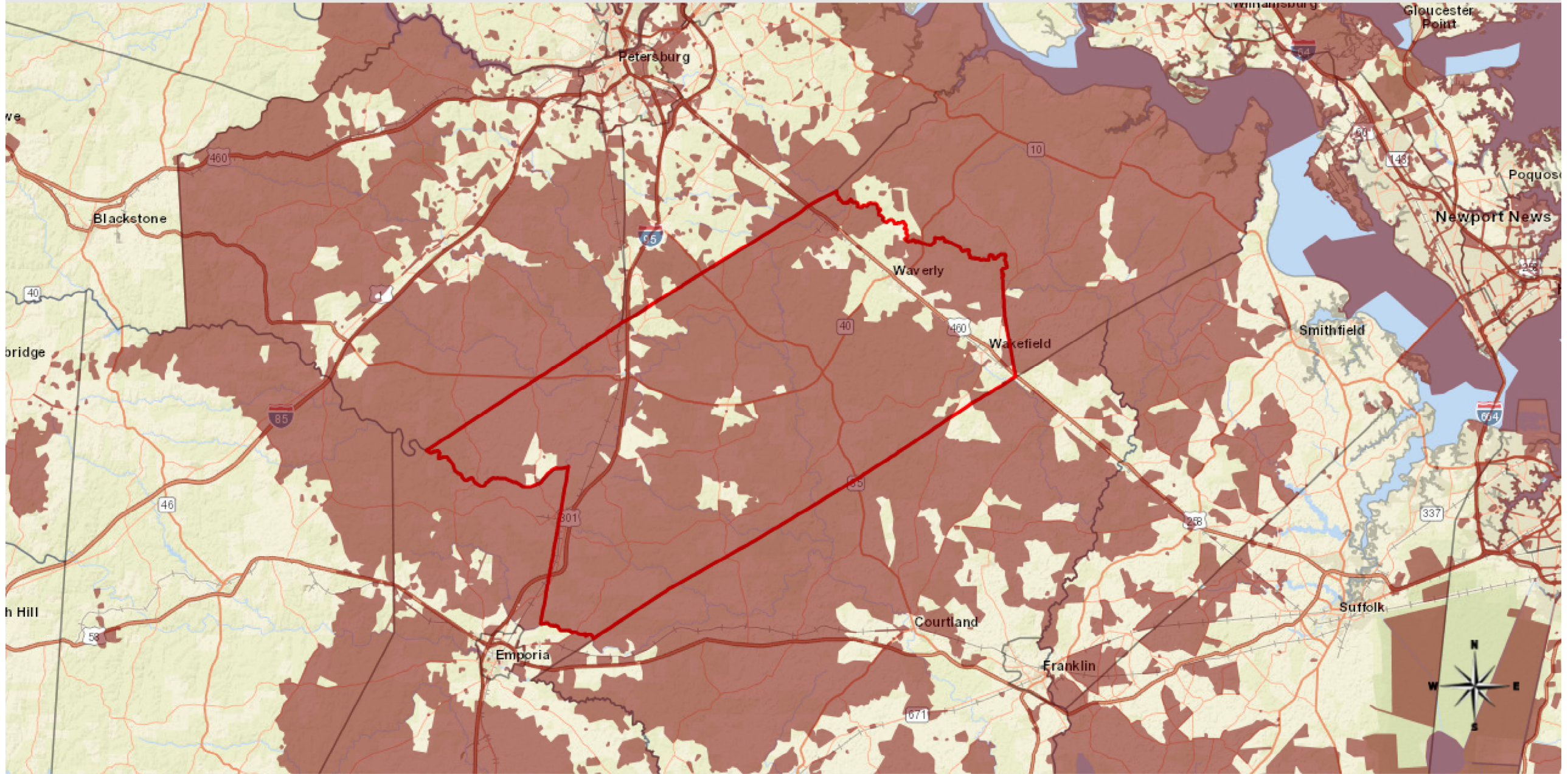
Sussex County - RDOF Awarded Areas



	Sussex County Roads
	Project Area
	RDOF
	County Boundary

Sources:
 Virginia DHCD,
 Virginia Geographic Information Network, and
 FCC - Fixed Broadband Deployment June 2020 Data

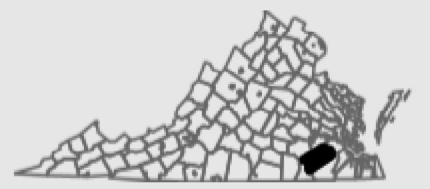




Legend
■ Unserved Areas [below or equal to 10 Mbps download and 1 Mbps upload]

About the Map

5 mi
Scale 1:700354
Report generated on 8/30/2021



2022 Virginia Telecommunication Initiative (VATI) Passing Form Sussex County

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	891	794	97	891
Businesses (non-home based)	13	5	8	13
Businesses (home-based)	0	0	0	0
Community Anchors	4	3	1	4
Non-residential	0	0	0	0
Total	908	802	106	908

2022 Virginia Telecommunication Initiative (VATI) RDOF Passings Form

Type of Passings	Total Number of Passings in the Project Area that lie within Preliminarily Awarded RDOF Areas ¹
Residential	1,332
Businesses (non-home based)	20
Businesses (home-based)	0
Community Anchors	7
Non-residential	0
Total Number of RDOF Passings	1,359

Attachment 7 – Timeline Project Management Plan

Sussex County VATI Project
Schedule

	Fiber Design Engineering	Make-Ready Construction	Fiber Construction	Splicing and Service Drop	Home Installations
2022					
June	Begin Design				
July					
August					
September		Begin Make Ready			
October					
November					
December			Begin Construction		
2023					
January				Begin Service Drop Installs	Begin Home Installs
February	Complete Design				
March					
April					
May		Complete Make Ready			
June					
July					
August					
September					
October					
November			Complete Construction	Complete Service Drop Installs	Begin Home Installs

Definition of Phases of Project Execution

Distribution Design (Fiber Design Engineering)- This is the first phase of the project. During this step design engineers take to the field to conduct an in-depth survey. After field visits are complete design engineers begin to enter the field verified design into software systems and prepare drawings for construction crews. This step identifies any make ready work that may be required to prepare existing systems for the attachment of ADSS middle mile cable. This step finalizes the design for the middle mile construction required to connect the distribution system throughout the project area.

Make-Ready Construction- This phase of the process begins as Distribution Design starts to turn around the first set of jobs. This is the step in which any poles identified during distribution design requiring replacement to accommodate the addition of the fiber cable are replaced. The Make-Ready and

Distribution Design phase of the project are by design set to occur with overlap to develop a smooth process.

Distribution Construction- This is the step in which all middle mile infrastructure is constructed. In the previous steps Distribution Design and Make-Ready Construction all work has been completed to allow for a smooth deployment of the middle mile cable preparing the system for the next step.

Distribution Splicing and Drops- This is considered a two-step process, as distribution cable is prepared for connections by the splicing process the to the home drops are designed and constructed. Extra care is given in the design process to work with the end user to develop a detailed installation plan to mitigate damaging property owner private facilities.

In-Home Connection- This is the final step in connecting the member to the internet. During this step the in-home electronics are installed, and connectivity is verified.

Project Management Duration

The total duration of this proposed project is 18 months. If awarded this project will commence in June, 2022 and come to full completion in November of 2023.

Upon kick off of the project, fiber design engineering will commence. Fiber design will prepare the required documentation to be reviewed and handed over for the make-ready work required to begin. Fiber design engineering will review the final route for the distribution cable required to be constructed in the field. Preparing required staking sheets for the execution of the design as well as any additional detailed drawings necessary for the execution of the fiber construction. At this time any changes or amendments will be identified and addressed, reviewed, and approved by the Manager of Engineering and Operations. This process will be executed by contract support staff with oversight provided by RURALBANDS Fiber Design Engineer. Fiber design engineering will turn over the required make ready work to contract crews for the make-ready construction phase to begin. (Completion of month 3 of 15) Fiber design engineering has met 20% of the project engineering goal required for the construction of distribution cable under the scope of this project as presented.

Fiber design engineering will continue field visits, preparing the necessary documents needed to continue moving the project forward. Fiber design will begin executing audits of the make-ready work being completed to ensure the work has been completed as designed and to the standards set forth by RURALBAND. (Completion of month 6 of 15) Fiber design engineering has met 40% of the project engineering goal required for the construction of distribution cable under the scope of this project as presented.

Fiber design engineering will continue field visits, preparing the necessary documents needed to continue moving the project forward. Fiber design will continue executing audits of the make-ready work being completed to ensure the work has been completed as designed and to the standards set

forth by RURALBAND. The fiber design team will continue to move approved work orders to the construction team for the construction phase of the fiber cable. The fiber design team will in addition to providing make-ready audits, begin to conduct fiber construction as-built reviews ensuring work has been completed as-designed and to the standards set forth by RURALBAND and is prepared for the splicing phase to begin. The fiber design team will provide splice diagrams for splicing to be executed. (Completion of month 9 of 15) Fiber design engineering has met 60% of the project engineering goal required for the construction of distribution cable under the scope of this project as presented.

Fiber design engineering will continue field visits, preparing the necessary documents needed to continue moving the project forward. Fiber design will continue executing audits of the make-ready work being completed to ensure the work has been completed as designed and to the standards set forth by RURALBAND. The fiber design team will continue to move approved work orders to the construction team for the construction phase of the fiber cable to begin. The fiber design team will in addition to providing make-ready audits begin to conduct fiber construction as-built reviews ensuring work has been completed as-designed and to the standards set forth by RURALBAND and is prepared for the splicing. The fiber design team will continue providing splice diagrams for splicing to be executed. The fiber design team will begin mapping the field verified audits of the design, construction and splicing phase of the project. (Completion of month 12 of 15) Fiber design engineering has met 80% of the project engineering goal required for the construction of distribution cable under the scope of this project as presented.

Fiber design will have completed executing audits of the make-ready work being completed to ensure the work has been completed as designed and to the standards set forth by RURALBAND. The fiber design team will have moved all approved work orders to the construction team. The fiber design team will have completed all make-ready audits, completed as-designed audits and splicing audits. Fiber design engineering has met 100% of the project engineering goal required for the construction of distribution cable under the scope of this project as presented.

Throughout the entire Fiber design process of the proposed project, RURALBAND, through direction and oversight by the General Manager, Manager of Engineering and Operations and the Fiber Design Engineer will have provided the oversight and guidance required for the timely and successful completion of the project.

Note: Make-Ready work follows Design to create a design buffer to allow for smooth workflow.

Note: Fiber Construction follows Make-Ready work to accommodate a smooth workflow.

NOTE: Splicing, Service Drop Install and In-Home connections follows construction to provide a smooth workflow.



PGEC Enterprises, LLC, DBA RURALBAND
P.O. Box 196, Waverly, Virginia 23890
www.RURALBAND.coop
804-834-2424

Prince George Electric Cooperative DBA "RURALBAND" has committed to provide a match in the amount of \$ 678,571.00 for the proposed project encompassing the under served areas of Sussex County.



COMMONWEALTH OF VIRGINIA
HOUSE OF DELEGATES
RICHMOND

Delegate Roslyn Tyler
25359 Blue Star Highway
Jarratt, Virginia 23867

SEVENTY-FIFTH DISTRICT

COMMITTEE ASSIGNMENTS:
EDUCATION (CHAIR)
APPROPRIATIONS
AGRICULTURE, CHESAPEAKE,
AND NATURAL RESOURCES

September 7, 2021

Mr. Erik Johnston, Director
Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, VA 23219

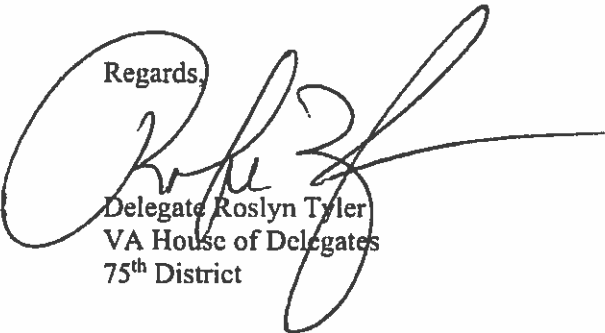
Dear Mr. Johnston,

I am writing this letter in support of Sussex County application for the Virginia Telecommunication Initiative (VATI) Grant.

The Governor of Virginia and the General Assembly has made broadband expansion/accessibility a priority and essential to enhance economic development, improve quality of life, and overall prosperity of all communities. Southside Virginia and rural areas are specifically underserved and will require assistance to build broadband infrastructure. The COVID-19 pandemic, unfortunately, has amplified the urgency for funding broadband expansion and making services affordable in socio-economic deprived districts and rural areas.

Therefore, funding the grant for VATI will promote businesses, improve education, enhance family services, and advance our communities to the new world of technology. Thank you for favorably considering to fund the VATI Grant for Sussex County. Should you need any additional information, please feel free to contact me.

Regards,


Delegate Roslyn Tyler
VA House of Delegates
75th District

CRATER PLANNING DISTRICT COMMISSION

Monument Professional Building • 1964 Wakefield Street • Post Office Box 1808 • Petersburg, Virginia 23805
PHONE: (804) 861-1666 • FAX: 804-732-8972 • E-MAIL: info@craterpldc.org • WEBSITE: www.craterpldc.org

September 13, 2021

Dr. Tamarah Holmes, Director
Office of Broadband
Virginia Department of Housing and Community Development
600 East Main Street, Suite 300
Richmond, VA 2321

Dear Dr. Holmes:

I write you on behalf of the Crater Planning District Commission in support of Sussex County's application to VATI for funding of broadband implementation. The County is partnering with RuralBand to implement universal broadband coverage via fiber to the home. We strongly support this project and the focus on infrastructure development.

Our mission is to strengthen the quality of life throughout the Crater District by serving as a regional forum of member local governments to address issues of regional significance, providing technical assistance to localities and promoting and enhancing the collective consensus on the economic, transportation, social, environmental and demographic interests of the region. This project closely aligns with our mission, by increasing community enhancement and development throughout Sussex County.

Ten small localities in southern Virginia comprise the Crater Economic Development District, home to 186,938 people according to the 2020 US Census. Population growth is stagnant with an increase shy of 7,000 since 2010. A lack of investment in modernization of infrastructure and services like broadband internet accompanies this lack of growth.

Unemployment rates in these ten localities range from 4.1% – also the rate for the Commonwealth as a whole – to 10.3%. Per capita income in the Crater Economic Development District was \$39,684, nearly \$20,000 less than Virginia's per capita income in 2019 according to the US Bureau of Economic Analysis.

Investment in broadband infrastructure is both an objective of Goal 4 and a performance measure under Goal 5 of the Comprehensive Economic Development Strategy of the Crater Economic Development District. These goals are to (4) encourage and facilitate the provision of well planned, state-of-the-art public infrastructure that will attract higher-wage employers and to (5) enhance the innovation/information technology ecosystem.

In conclusion, I fully support the efforts of Sussex County to seek federal VATI funding through the Virginia Telecommunication Initiative. We are committed to supporting this project and look forward to continuing our collaborative efforts to enhance the Crater Planning District.

Sincerely,



Alec Brebner
Executive Director

VATI Attachment #14



(RETAIN FOR YOUR RECORDS)
Form 477 Filing Summary

FRN: 0026799551 | Data as of: Dec 31, 2019 | Operations: Non-ILEC | Submission Status: Revised - Submitted | Last Updated: Apr 27, 2020 14:07:52

Filer Identification

Section	Question	Response
Filer Information	Company Name	PGEC Enterprises, LLC
	Holding Company Name	Prince George Electric Cooperative
	SAC ID	199023
	499 ID	833031
Data Contact Information	Data Contact Name	Steven M. Chernoff
	Data Contact Phone Number	(703) 584-8670
	Data Contact E-mail	schernoff@fcclaw.com
Emergency Operations Contact Information	Emergency Operations Name	Casey Logan
	Emergency Operations Phone Number	(804) 834-2424 ext: 1003
	Emergency Operations E-mail	clogan@pgec.coop
Certifying Official Contact Information	Certifying Official Name	Casey Logan
	Certifying Official Phone Number	(804) 834-2424 ext: 1003
	Certifying Official E-mail	clogan@pgec.coop

Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	PGEC_fbdd_2019Q4_022920.csv	Apr 27, 2020 14:07:30	1320
Fixed Broadband Subscription	PGEC_fbsd_2019Q4_022920.csv	Apr 27, 2020 14:07:30	29

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Virginia	Prince George Electric Coop	Optical Carrier/Fiber to the End User	1320
Total			1320

Fixed Broadband Subscription

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

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total

State	Total	by End-user Type		by Bundle		by Last-mile Medium			
		Consumer	Business / Government	Sold w/ Internet	Sold w/o Internet	FTTP	Coax	Fixed Wireless	Copper
Virginia	183	182	1	183	0	183	0	0	0
Total	183	182	1	183	0	183	0	0	0

Fixed Broadband Subscription

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Virginia	Optical Carrier/Fiber to the End User	46	1820	32	1852
Total		46	1820	32	1852

Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (In Mbps)	Upstream Bandwidth (In Mbps)	Consumer	Business / Govt	Total
25.000	25.000	237	0	237
50.000	50.000	0	7	7
100.000	100.000	1101	19	1120
250.000	250.000	376	5	381
500.000	500.000	0	1	1
1000.000	1000.000	106	0	106
Total		1820	32	1852

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	25.000	25.000	237	0	237
	50.000	50.000	0	7	7
	100.000	100.000	1101	19	1120
	250.000	250.000	376	5	381
	500.000	500.000	0	1	1
	1000.000	1000.000	106	0	106
Total			1820	32	1852

Fixed Voice Subscription

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

State	Total VGE Lines	Consumer VGE Lines	Total VoIP Subscriptions	Consumer VoIP Subscriptions
Virginia	0	0	183	182
Total	0	0	183	182

Fixed Voice Subscription (iVoIP)

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

State	Total	Consumer	Business / Govt
Virginia	0	0	0
Total	0	0	0

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

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(RETAIN FOR YOUR RECORDS)
Form 477 Filing Summary

FRN: 0026799551 | Data as of: Dec 31, 2020 | Operations: Non-ILEC | Submission Status: Revised - Submitted | Last Updated: Mar 12, 2021 14:32:05

Filer Identification

Section	Question	Response
Filer Information	Company Name	PGEC Enterprises, LLC
	Holding Company Name	Prince George Electric Cooperative
	SAC ID	199023
	499 ID	833031
Data Contact Information	Data Contact Name	Steven W. Chernoff
	Data Contact Phone Number	(703) 584-8670
	Data Contact E-mail	schernoff@fcclaw.com
Emergency Operations Contact Information	Emergency Operations Name	Casey Logan
	Emergency Operations Phone Number	(804) 834-2424 ext: 1003
	Emergency Operations E-mail	clogan@pgec.coop
Certifying Official Contact Information	Certifying Official Name	Casey Logan
	Certifying Official Phone Number	(804) 834-2424 ext: 1003
	Certifying Official E-mail	clogan@pgec.coop

Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	PGEC_fbdd_2020Q4_031221.csv	Mar 12, 2021 14:30:48	1148
Fixed Broadband Subscription	PGEC_fbzd_2020Q4_031221.csv	Mar 12, 2021 14:30:48	46
Fixed Voice Subscription	PGEC_fvs_2020Q4_031221.csv	Mar 12, 2021 14:30:48	9

Fixed Broadband Deployment

Census Block Counts by State, DBA Name and Technology

State	DBA Name	Technology	Blocks
Virginia	Prince George Electric Coop	Optical Carrier/Fiber to the End User	1148
Total			1148

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

State	Technology	End-user Type	Subscriptions

State	Technology	Census Tracts	Subscriptions		
			Consumer	Business / Govt	Total
Virginia	Optical Carrier/Fiber to the End User	29	892	12	904
Total		29	892	12	904

Fixed Broadband Subscriptions by Bandwidths and End-user Type

Downstream Bandwidth (in Mbps)	Upstream Bandwidth (in Mbps)	Consumer	Business / Govt	Total
50,000	50,000	757	6	763
100,000	100,000	116	4	120
250,000	250,000	0	2	2
1000,000	1000,000	19	0	19
Total		892	12	904

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	50,000	50,000	757	6	763
	100,000	100,000	116	4	120
	250,000	250,000	0	2	2
	1000,000	1000,000	19	0	19
Total			892	12	904

RESOLUTION IN SUPPORT OF A VIRGINIA TELECOMMUNICATIONS INITIATIVE
GRANT TO PROVIDE BROADBAND SERVICE IN SUSSEX COUNTY

WHEREAS, high-speed broadband connectivity is a necessity for families and businesses attempting to access a wide array of services including, but not limited to, education, healthcare, e-commerce, banking, communication, etc.; and,

WHEREAS, a significant portion of the nearly 5,000 homes and 200 businesses in Sussex County are underserved or unserved relative to reliable high-speed broadband internet service; and,

WHEREAS, the Board of Supervisors of Sussex County is committed to providing local match funding sufficient to support implementation of the broadband project.

NOW, THEREFORE, BE IT AND IT IS HEREBY RESOLVED that the Board of Supervisors of the County of Sussex, Virginia authorizes the submission of a Virginia Department of Housing and Community Development Virginia Telecommunications Initiative Grant application.

BE IT FURTHER RESOLVED that the County Administrator is authorized to sign and submit the appropriate documents for the submittal of the Virginia Telecommunications Initiative Grant proposal and any subsequent contract documents necessary to satisfy program requirements.

Attachment 18 – RURALBAND Pricing Structure

25 Mbps - \$49/month 100 Mbps - \$74/month 1 Gbps - \$99/month