Application to DHCD Submitted through CAMS

Hanover County

Hanover County CenturyLink 2021

Application ID:	75708072020093926
Application Status:	In Progress - DHCD
Program Name:	Virginia Telecommunications Initiative 2021
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 CenturyLink 2021
Project Contact Name:	Kevin Nelson
Project Contact Phone:	(804) 365-6168
Project Contact Email:	knelson@hanovercounty.gov
Project Location:	7497 County Complex Road Hanover, VA 23069-1529
Project Service Area:	Hanover County

Total Requested Amount: $1,014,251.00

Required Annual Audit Status: No Current Audits Found

Application to DHCD Submitted through CAMS

Hanover County

Hanover County CenturyLink 2021

Budget Information:

Cost/Activity Category	DHCD Request	Other Funding	Total
Telecommunications	**$1,014,251.00**	**$382,249.00**	**$1,396,500.00**
Construction	$1,014,251.00	$382,249.00	$1,396,500.00
Total:	**$1,014,251.00**	**$382,249.00**	**$1,396,500.00**

Budget Narrative:

This broadband grant application is to implement broadband internet service to 515 homes, businesses, and community anchors in the Doswell - Gum Tree area of Hanover County. The total project cost is $1,396,500. CenturyLink is providing $356,499 in cash to the project as the co-applicant, which is 25.55% of the project cost. The Hanover County Board of Supervisor Community Development Committee authorized a County match of $50 per passing equating to $25,750, which is 1.85% of the project cost. The funding is subject to appropriation by the full Board. The proposed VATI grant request is in the amount of $1,014,251, which is 72.60% of the project cost. The matching funds invested by CenturyLink and Hanover County include the full costs of the project, including planning, engineering, permits and easements, and materials and labor for the construction and installation of the fiber solution. Hanover County recognizes the need to expand access to broadband internet is critical for its citizens and businesses. As such, the County has dedicated funding and staff time and expertise to broadband expansion initiatives.

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:

The County has undertaken extensive research on internet service availability, including intensive community engagement. The County has received many comments from citizens and businesses on the lack of adequate internet in areas of the County. In addition, the County has worked with CenturyLink, Comcast, Verizon, and various wireless and satellite internet service providers to identify areas where better internet service is needed. This information led to the development of a broadband plan that identifies areas of the County that should be targeted for enhanced internet service.

The geographic area for this proposed project is in the Doswell/Gum Tree area of Hanover County. The general project area, which, to the extent possible, will include service to residences/businesses on both sides of the road, including those public and private subdivision roads that have their primary access off this road, is as follows.

Old Ridge Road – from its intersection with Blunts Bridge Road westerly to Katy Lane (Katy Lane is not included);

Blunts Bridge Road – from its intersection with New Found Road northerly to Old Ridge Road;

Rockets Mill Road – from its intersection with Scotchtown Road northerly to Old Ridge Road;

New Market Mill Road – its entire length;

Verdon Road – from its intersection with Mount Hope Church Road westerly to its intersection with Noel Road (including Noel Road).

The project area was selected after consultation between the County and CenturyLink 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.

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:

Hanover County conducted extensive outreach with existing wireline, wireless, and satellite internet service providers to determine if the areas proposed as part of the grant application had access to broadband internet service. The proposed grant area is located in the CenturyLink telephone exchange. CenturyLink presently provides limited DSL services that are less than the 10 Mbps / 1Mbps minimum, including approximately 200 homes/businesses that cannot subscribe to any speed of DSL and another 100 homes/businesses that can subscribe to 3 Mbps or less. Data from CenturyLink shows 79.6% of homes having 10 Mbps / 1Mbps or less internet speeds.

Living Units equal to 0 Mbps (no DSL) – 199 (39%)

Living Units equal or less than 3 Mbps – 281 (55%)

Living Units less than 10/1 – 378 (73.4%)

Living Units equal 10/1 – 32 (6.2%)

Living Units >10/1 - 25/3 – 105 (20.3%)

Total Living Units – 515

Hanover County developed an internet survey website that was distributed to the community. This website allowed citizens and businesses to record their internet speeds and providers and report that information to the County. The service providers identified included CenturyLink DSL, satellite, and wireless LTE services provided by Verizon and AT&T. For the specific proposed grant project area Hanover reached out to Verizon as the general area is shown on FCC maps to have Verizon DSL internet service. Verizon responded as follows:

"We have reviewed the three projects Hanover County is proposing for this year's round of Virginia Telecommunications Initiative (VATI) grants. Verizon does not have any objections to the service areas these proposals seek to cover and will not contest them during the challenge phase of the grant application process." Jeff

Merriman, Verizon State and Local Government Affairs

The County also reached out to Comcast and there is no service overlap with their territory.

Information from the survey documented the following internet speeds:

58 survey responses

39 reported less than 10 Mbps / 1 Mbps

16 reported 10-24 Mbps / 1-3 Mbps

3 greater than 25 Mbps / 3 Mbps (mobile hot spots)

Information on the County's intent to apply for VATI grants, including the areas proposed to be included in the grant application, has been posted on the County's website and a notice was distributed alerting the community of such with links to this information.

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

Answer:

CenturyLink has confirmed that no company accepted CAFII auction, ACAM, ReConnect, or Community Connect funding for these areas. CenturyLink is the ILEC for this area and no funding was awarded to deploy broadband for this area under the CAFII program. There are RDOF eligible census blocks within the proposed project area.

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

Answer:

The project area is unserved as the area does not have broadband speeds. The area is presently part of the CenturyLink Gum Tree exchange. Hanover County conducted extensive outreach with existing wireline, wireless, and satellite internet service providers to determine if the areas proposed as part of the grant application had access to broadband internet service.

Hanover County developed an internet survey website that was distributed to the community. This website allowed citizens and businesses to record their internet speeds and providers and report that information to the County. The only other providers identified by the survey were telephone company mobile hot spots and satellite providers. Information from the survey documented the following internet speeds:

58 survey responses

39 reported less than 10 Mbps / 1 Mbps

16 reported 10-24 Mbps / 1-3 Mbps

3 greater than 25 Mbps / 3 Mbps (mobile hot spots)

There is no broadband internet service overlap with Verizon, Comcast, or other wireline or wireless providers.

5. Total Passings: Provide the number of total serviceable units in the project area. Applicants are encouraged to prioritize areas lacking 10 Megabits per second download and 1 Megabits per second upload speeds, as they will receive priority in application scoring. For projects with more than one service area, each service area must have delineated passing information. Label Attachment: Attachment 4 – Passings Form

   a. Of the total number of passings, provide the number of residential, business, non-residential, and community anchors in the proposed project area. Describe the methodology used for these projections.

   b. Provide the number of serviceable units in the project area that have 10/1 mbps or less. Describe the methodology used for these projections.

Answer:

The total number of residential serviceable units is 515, which, based on recent Census person per household data, equates to 1,365 people. These addresses have been plotted considering the infrastructure design provided by CenturyLink and using County GIS technology. Based on the County's survey results, we estimate a minimum of 95% of these service units have less than 25 Mbps / 3Mbps and 67% have less than 10 Mbps / 1 Mbps internet access speeds. Data from CenturyLink shows 79.6% of homes having 10 Mbps / 1Mbps or less internet speeds.

Living Units equal to 0 Mbps (no DSL) – 199 (39%)

Living Units equal or less than 3 Mbps – 281 (55%)

Living Units less than 10/1 – 378 (73.4%)

Living Units equal 10/1 – 32 (6.2%)

Living Units >10/1 - 25/3 – 105 (20.3%)

Total Living Units - 515

Community Anchors (using Google Maps, County property records, and CenturyLink business records):

Gifted Time Books LLC (educational books) – 13028 Old Ridge Road

Haiti Outreach Ministries – 12364 New Market Mill Road

Jack Heidenescher (school and educational services) – 17251 Burchett Lane

Mission Critical Support, LLC – 16355 Little River Drive

Robert N Glenn PHD PC (medical services) – 16429 Little River Drive

Watkins Medical Supplies – 11416 Doswell Road

Wound Care Systems Inc (medical equipment) – 12226 Darbys Road

The School Board identified 111 K-12 students located in the project area.

The Commissioner of the Revenue identified 17 home-based businesses in the project area. However, the County does not require a business license, which makes it more difficult to determine the true number of home-based businesses. Hence, CenturyLink provided data from their records, which documented 91 home-based businesses. The website survey documented 17 responses that have a home-based business out of 58 submissions, so the 91 number seems a more accurate reflection of home-based businesses. The non-residential units are churches.

6. For wireless projects only: Please explain the ownership of the proposed wireless infrastructure. Please describe if the private co-applicant will own or lease the radio mast, tower, or other vertical structure onto which the wireless infrastructure will be installed.

Answer:

Not applicable.

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

Answer:

Speeds: Download and Upload Speeds: All locations will have access to CenturyLink's Fiber Gigabit service, which provides a maximum of 940 Mbps download and 940 Mbps upload. Bandwidth is dedicated.

Technology: The technology that will be used is "Fiber to the Home," or "GPON." GPON is "Gigabit Passive Optical Network." In a Fiber to the Home/GPON environment, voice and high-speed data (up to 1Gbps) is transported on a single fiber (one wavelength for transmit, another wavelength for receive) from the office/remote electronics to the home or premises. The single fiber operates at a rate of 2.4Gbps downstream (to the home) and 1.2Gbps upstream (from the home). The CenturyLink deployment can share this bandwidth between 32 customers. The GPON infrastructure eliminates the need for active electronics (and the associated powering, real estate and maintenance costs) in the distribution plant, depending on the distance from the Central Office/ Remote and available feeder fibers.

Service offering: Pricing for CenturyLink services is generally a nationwide price, so that customers in rural Virginia pay the same rate as customers in urban areas in other states. CenturyLink currently offers two speed tiers for fiber-to-the-home customers as part of CenturyLink Internet with Price For Life, which are 100 Mbps for $49/month or Fiber Gigabit (940 Mbps) for $65/month. There are additional options bundled with other services like Fiber Gigabit (940 Mbps) plus Home Phone Unlimited for $85/month. The above rates do not include any required taxes or fees, and plans are always subject to change, please refer to centurylink.com for the most up to date information.

8. Network Design: Provide a description of the network system design used to deliver broadband service from the network's primary internet point(s) of presence to end users, including the network components that already exist and the ones that would be added by the proposed project. Provide a detailed explanation of how this information was determined with sources. If using a technology with shared bandwidth, describe how the equipment will handle capacity during peak intervals. For wireless projects, provide a propagation map for the proposed project area with a clearly defined legend for scale of map. Label Map: Attachment 5 – Propagation Map Wireless Project.

Answer:

As described in response to question 7, the network design is "fiber-to-the-home" or "GPON." The components that would be added are optical fiber connections to residences including over 179,000' (34 miles) of fiber cable construction in addition to new GPON electronics, two fiber distribution hubs (FDHs), and 250 fiber pedestals (MDTS). The twisted pair copper lines would no longer be used. Additional components would be necessary to connect the fiber to existing CenturyLink facilities. The advantage of using a fiber-based solution is that it provides the fastest speeds available to consumers. Although copper-based solutions such as VDSL can provide speeds of 100 Mbps, fiber can provide speeds measured in Gigabits. Also, the fiber network does not have the same distance limitation of copper-based DSL technology. The source of these statements is CenturyLink's actual experience in providing fiber solutions to residences across the Commonwealth and county, to many state and federal government customers and to thousands of businesses across the United States and around the world with more than 150,000 buildings "on-net".

This is 100 % fiber to the home project (no wireless) so there is no Attachment 5.

9. Project Readiness

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

Answer:

The Hanover County Board of Supervisors approved a resolution supporting the grant application with CenturyLink. A formal partnership agreement between Hanover County and CenturyLink is in process. The County and CenturyLink have entered into a Memorandum of Understanding as it relates to compiling the grant application and planning for the initiative.

The Doswell – Gum Tree Exchange project has passed engineering and financial commit stages and is approaching final design. Preliminary engineering is substantially complete. Final design will commence upon the award of the grant by DHCD and will continue to completion on or before the construction deadline pursuant to a final grant agreement. CenturyLink is confident it can complete the proposed work on time and within budget. A workflow is included in the attached project management plan.

CenturyLink's obligations are to implement the work tasks identified in the project plan. The specific initial tasks

include project engineering and right of way preparation. CenturyLink may need to obtain the necessary permits/easements from various entities/agencies to place facilities in the VDOT right of way or other properties and will need support from the County in ensuring that necessary power supplies are coordinated and installed with the local electric company. Hanover County will assist in obtaining these permits/easements and power supplies expeditiously. This coordination will need to begin immediately upon notice of the grant award. Material procurement and some pre-construction work will occur during this period and will enable CenturyLink to proceed with actual construction as soon as permit/easement issues are obtained.

CenturyLink anticipates completing the project within 12 months after contract execution between the County and DHCD. As contemplated by the 2021 VATI guidelines, CenturyLink may request an extension if it encounters permitting or other circumstances beyond its control which may delay the project timeline. Activation of all HFC plant will be completed by both in-house CenturyLink employees and select contract personnel. The final quality control inspection of all new infrastructure will be completed by CenturyLink employees to ensure all new construction meets or exceeds FCC standards. A notice of service availability will be provided not later than 20 days prior to the completion date.

CenturyLink and Hanover County will establish a Communication Plan that will ensure updates are provided between both organizations, including where/when broadband has been enabled.

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

Answer:

The total project cost is $1,396,500. CenturyLink is providing $356,499 in cash to the project as the co-applicant, which is 25.55% of the project cost. The Hanover County Board of Supervisor Community Development Committee authorized a County match of $50 per passing equating to $25,750, which is 1.85% of the project cost. The funding is subject to appropriation by the full Board. The proposed VATI grant request is in the amount of $1,014,251, which is 72.60% of the project cost. The matching funds invested by CenturyLink and Hanover County include the full costs of the project, including planning, engineering, permits and easements, and materials and labor for the construction and installation of the fiber solution.

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

Answer:

CenturyLink is ranked the 159th largest company according to Fortune’s annual list. In Virginia, CenturyLink has more than $1.6 Billion in total network investment within Virginia and annualized investments of more than $54 million. CenturyLink has internal approval through their Capital Governance process, which allocates capital spending for North America, to spend $1,396,500 as part of their Hanover County application with the VATI grant of $1,014,251.

Hanover County is contributing $50/passing toward the project totaling $25,750. Hanover has provided local project management for numerous road improvement projects, including financial and construction oversight. The County also manages its own public utility system, including multiple treatment facilities and hundreds of miles of infrastructure. Managing these major infrastructure projects has given the County experience with acquiring applicable permits and easements, which will assist CenturyLink with in-kind services on this effort.

12. Marketing: Describe the broadband adoption plan.

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

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

Answer:

The projected take rate for this project area is 50% within one year of project completion. The projection is based on CenturyLink's experience in providing broadband in localities across the Commonwealth, as well as our experience in other states. The actions the co-applicants will take to reach the identified potential customers include frequent notices from the County and CenturyLink. The County has established email lists of local residents in the project area from the survey.

At least one public meeting will be held in or near the proposed project area to inform the residents about the upcoming work and answer questions. Nearer the completion of the project a public meeting will be held to educate potential customers on the proposed services and to encourage sign-ups and answer questions. The County’s Public Information Office will promote the proposed internet service and educate residents and businesses on the opportunities of this service through email and social media.

CenturyLink will also utilize standard go-to-market plans for fiber-to-the-home launches. CenturyLink’s local team determine, based on geography of the impacted households, the best method of marketing the launch in addition to partnering with Hanover County. This could include direct mail, prelaunch/preorder website, yard signs, door hangers, press releases, and/or mobile marketing.

Hanover County is using Cares Act funding to establish public wireless internet access at public buildings. This program includes placing wireless access points at up to 10 locations across the County with public access to internet services. Hanover County is a member of the Pamunkey Regional Library. The Library has a full digital literacy program that includes providing public wireless, mobile hotspots, and other mobile services (printing, etc.). Hanover County Schools will be providing an on-line educational program that includes issuance of tablets to all students in grades 3-12 and to all teachers. Schools will also provide complete web-based educational services.

13. Project Management: Identify key individuals who will be responsible for the management of the project and provide a brief description of their role and responsibilities for the project. Present this information in table format. Provide a brief description of the applicant and co-applicant’s history and experience with managing grants and constructing broadband communication facilities. Please attach any letters of support from stakeholders. If

applicant is not a locality(s) in which the project will occur, please provide a letter of support from that locality. Attachment 10 – Letters of Support.

Answer:

Name	Title	Responsibility
Derek Kelly	Government Affairs Director - CenturyLink	Project Coordination – Mr. Kelly will be responsible for overall coordination of the project with Hanover County. He will provide all coordination with the planning, engineering, construction, marketing, and operation teams within CenturyLink. Mr. Kelly has a history of this function in North Carolina in addition.
Heather Lee	Sr. Analyst – Public Policy – CenturyLink	Project Coordination – Ms. Lee will project manage all teams within CenturyLink to ensure reporting requirements are met. Ms. Lee is dedicated to this function for state grants across CenturyLink's footprint.
Darin Wilder	Manager, Edge Planning – CenturyLink	Network Planning – Mr. Wilder oversees all fiber-to-the-home planning for VA, WV, NC, SC, FL, KY, MD, & DC.
Glenn Butler	Sr. Planning Engineer – CenturyLink	Networking Planning – Mr. Butler has direct responsibility for designing fiber-to-the-home solutions for Hanover County and has experience designing successful VATI grants in other counties.
Craig Hager	Director of Local Network – CenturyLink	Engineering & Construction – Mr. Hager oversees all construction tasks and testing

		in Virginia in addition to NC, MD, WV, and DC.
Bill Owens	Manager of Local Network, VA – CenturyLink	Mr. Owens has direct responsibility for managing construction and testing for this project. Mr. Owens has managed these functions for multiple VATI grants.
Willie Thompson	Construction Supervisor, VA – CenturyLink	Mr. Thompson will direct all crews for the construction and installation of fiber and equipment for this project. Mr. Thompson has managed these functions for multiple VATI grants.
Trip Stipanovich	Manager, Region Operations	Installation & Operations: Ms. Stipanovich has responsibility for all customer installation and repair for Virginia.
Frank Harksen	Deputy County Administrator	Project Coordination
Kevin Nelson	County IT Director	Project Management

In FY20 alone, the County processed nearly $25M in grant funds for everything from road construction to drug treatment programs to equipment installation and more. The County has also accepted over $18 million in Cares Act funds that are being solely administered by the County. Hanover 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 County's Board approved financial policies.

CenturyLink, through its affiliates (collectively, "CenturyLink"), has been providing voice service for more than 100 years, and has been serving consumers and businesses with High-speed Internet for more than 20 years. CenturyLink is the second largest U.S. communications provider to global enterprise customers, with enterprise customers in more than 60 countries and residential customers in 37 states. CenturyLink has a long-standing history of managing grants at the Commonwealth/State and Federal level, including multiple VATI grants and other state grants including North Carolina, Minnesota, and others. CenturyLink has dedicated resources responsible for coordination with localities, project managing grants and compliance, consumer team responsible for pursuing public-private partnerships, in addition to our local planning, engineering, construction, and operations team responsible for all aspects of implementing the project.

The following supportive documents are included in an attachment:

Hanover County Board of Supervisors Resolution

Delegate Fowler

Delegate Wyatt

15 supportive emails (names and emails attached – specific emails can be provided)

53 support comments from on-line survey (names and emails attached – specific comments of support can be provided)

14. Project Budget and Cost Appropriateness

Budget: Applicants must provide a detailed budget that outlines how the grant funds will be utilized, including an itemization of equipment, construction costs, and a justification of proposed expenses. If designating more than one service area in a single application, each service area must have delineated budget information. For wireless projects, please include delineated budget information by each tower. Expenses should be substantiated by clear cost estimates. Include copies of vendor quotes or documented cost estimates supporting the proposed budget. Label Attachments: Attachment 11 – Derivation of Costs; Attachment 12 - Documentation of Supporting Cost Estimates.

Answer:

The completed budget template document is attached. The following additional information is provided.

The cost for this project includes all of the planning, engineering, materials and labor for the installation of the fiber facilities necessary for this project, along with the equipment necessary to provide the broadband service. The cost estimates are based on CenturyLink's extensive experience in building these same systems throughout the country. CenturyLink's network planning team thoroughly reviewed each passing when developing the project solution, and derived the costs based on the best solution to bring a fiber-to-the-home solution to Hanover County.

The project cost is $1,396,500, consisting of $35,000 in electronics and $1,361,500 in fiber and distribution facilities. These costs include all of the fiber installation and the equipment required for the project, along with all of the planning, permitting, construction and testing costs.

The attached chart details out the ISP (electronics), OSP (GPON fiber and distribution), and total construction costs for each project area. Included in the OSP portion are the placement of two Fiber Distribution Hubs (FDH), one fiber splitter pedestal, 250 fiber pedestals (MDTS), and approximately 34 miles of fiber construction. The ISP portion is for new GPON electronics.

15. The cost benefit index is comprised of three factors: (i) state share for the total project cost, (ii) state cost per unit passed, and (iii) the internet speed. From these statistics, individual cost benefit scores are calculated and averaged together to create a point scale for a composite score. Provide the following:

a. Total VATI funding request
b. Number of serviceable units
c. Highest residential speed available in proposed project area

Answer:

a. The Total VATI funding request is $1,014,251

b. There are 515 serviceable units

c. The highest residential speed available is Fiber Gigabit, which consistent with industry standards is 940 Mbps both download and upload speeds.

16. Commonwealth Priorities

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

a. How the proposed project fits into a larger plan to achieve universal broadband coverage for the locality. Explain the remaining areas of need in the locality and a brief description of the plan to achieve universal broadband coverage.

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

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

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

Answer:

The County has drafted a broadband expansion plan (attached), which is intended to provide a framework for implementation of adequate internet across the County focusing on those areas that have less than 25 Mbps download and 3 Mbps upload. In the absence of accurate mapping defining these areas, the County has identified five geographic areas where citizens and businesses have expressed frustration with their internet bandwidth (one of which is a part of this grant). The County has developed a survey tool where citizens can document their internet bandwidth, so that an accurate inventory of existing conditions can be compiled. This information shows additional areas where broadband internet is lacking.

The County is pursuing all means necessary to expand broadband internet across the County, including partnerships with private internet service providers and pursuing grants. Permitting processes have been streamlined to promote tower expansion and additional tower capacity. All known internet service providers have been contacted by the County to encourage expansion within Hanover County. Most providers have expressed concern over their lack of opportunity to see a Return on Investment for the needed capital to provide service within less densely populated areas of the county. The County has engaged Secretary of Technology’s office for

assistance on identifying solutions to meet the needs of Hanover County residents. A list of providers and numbers to call was created and placed on the County website.

The Emergency Communications Department sent letters out to a number of wireless internet service providers and telephone companies to take advantage of the County's extensive emergency communication tower network consisting of 18 towers. A number of cellular providers have entered into tower lease agreements to co-locate on County towers with the plan to provide 4G LTE service (and potentially 5G service).

The 7 community anchors identified are focused on critical educational and medical services that serve the rural community. The project will support 111 K-12 students, many of whom will be utilizing on-line educational resources. Centurylink has identified 91 home-based businesses in the area. The negative impact to these small businesses by not having broadband internet access is impactful.

Hanover County is using Cares Act funding to establish public wireless internet access at public buildings. This program includes placing wireless access points at up to 10 locations across the County with public access to internet services. Hanover County is a member of the Pamunkey Regional Library. The Library has a full digital literacy program that includes providing public wireless, mobile hotspots, and other mobile services (printing, etc.). Hanover County Schools will be providing an on-line educational program that includes issuance of tablets to all students in grades 3-12 and to all teachers. Schools will also provide complete web-based educational services.

CenturyLink provides qualifying low-income customers access to Lifeline. Lifeline is the FCC's program to help make communications services more affordable for low-income consumers. Lifeline provides subscribers a discount on monthly telephone service purchased from participating providers. The discounts, which can be applied to stand-alone broadband, bundled voice-broadband packages - either fixed or mobile - and/or stand-alone voice service, help ensure that low-income consumers can afford state-of-the-art Broadband and the access it provides to jobs, education and opportunities.

In 2010 the Board of Supervisors established a high speed internet advisory committee to develop a plan to expand high speed internet access across the County. The committee drafted a report that included a number of recommendations. The County has been implementing these recommendations. However, at that time, internet service providers were not prevalent and the County was not able to generate any interest from private internet service providers to expand broadband internet service into rural areas of the County. In addition internet service technology has been greatly enhanced. In 2010 high speed internet was considered speeds greater than 4 Mbps download and 1 Mbps upload (today that is 25/3).

As the County has grown and technology has evolved, the reliance on adequate internet service has become a priority for citizens and businesses in the County. As such, in 2019 the Board of Supervisors established another broadband advisory committee. This committee has been tasked with a similar goal to develop recommendations to expand broadband internet access across the County. The Committee's report is due in early 2021. Initial work is to identify strategies for the expansion and enhancement of broadband within the County.

The High Speed Internet Committee (HSIC) reported back in 2012 with a number of recommendations for consideration by the Board, which have served as the basis for the County's broadband planning effort. A summary of their recommendations:

Designate point person for broadband – completed

Communication – completed (on-going)

Pursue grant opportunities – completed (on-going)

Map internet availability – completed (using State/Federal mapping resources and on-line surveys)

Ensure Libraries have broadband internet service – completed

Consider establishing special tax districts – completed (Board of Supervisors determined not to proceed with this option)

Hanover staff have also pursued Wireless Internet Service Provider partners. In 2015, the County entered into a tower lease agreement with Last Mile Wireless. In 2016, the County had discussions with All Points Broadband, but they declined to enter into the Hanover market. In 2017, the County worked with SCS Broadband on a comprehensive plan to serve most of the unserved and underserved areas of the County. The initial two lease agreements were approved at a greatly discounted rate. SCS Broadband never met any of its obligations and has since filed for bankruptcy.

17. Additional Information

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

Label Additional Attachments as:
a. Attachment 13 – Two most recent Form 477 submitted to the FCC or equivalent
b. Attachment 14 – XXXXXXX
c. Attachment 15 – XXXXXXX
d. Attachment 16 – XXXXXXX
e. Attachment 17 – XXXXXXX

Answer:

Additional attachments include:

Attachment 14 - Home-based business list from CenturyLink database.

Attachment 15 - Hanover County Broadband Plan.

Attachment 16 - Hanover County VATI Plan.

Attachments:

Application to DHCD Submitted through CAMS

Hanover County

Hanover County CenturyLink 2021

Map(s) of project area, including proposed infrastructure

Attachment1ProjectAreaMap816202014802.pdf

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

Attachment2DocumentationonFederalFundingArea817202083841.pdf

Documentation that proposed project area is unserved based on VATI criteria

Attachment3DocumentationUnservedAreaVATICriteria816202014843.pdf

Passings Form (Please use template provided)

Attachment4PassingsForm816202014859.pdf

Propagation Map if Wireless Project

Attachment5PropagationMapWirelessProject816202014911.pdf

Timeline/Project Management Plan

Attachment6TimelineProjectManagementPlan816202014924.pdf

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

Attachment7MOUMOAbetweenApplicantCoApplicant816202014936.pdf

Funding Sources Table

Attachment8FundingSourcesTable8172020110527.pdf

Documentation for match funding

Attachment9DocumentationofMatchFunding8172020112101.pdf

Letters of Support

Attachment10LettersofSupport8172020115335.pdf

Derivation of Cost (Project Budget)

Attachment11DerivationofCosts8172020111847.pdf

Application to DHCD Submitted through CAMS

Hanover County

Hanover County CenturyLink 2021

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

Attachment12DocumentationofSupportingCostEstimates8172020112441.pdf

Two most recent Form 477 submitted to FCC

Attachment13TwomostrecentForm477submittedtotheFCCorequivalent817202021806.pdf

Optional

Attachment14HomeBasedBusinesses816202015529.pdf

Optional

Attachment15HanoverCountyBroadbandPlan816202015544.pdf

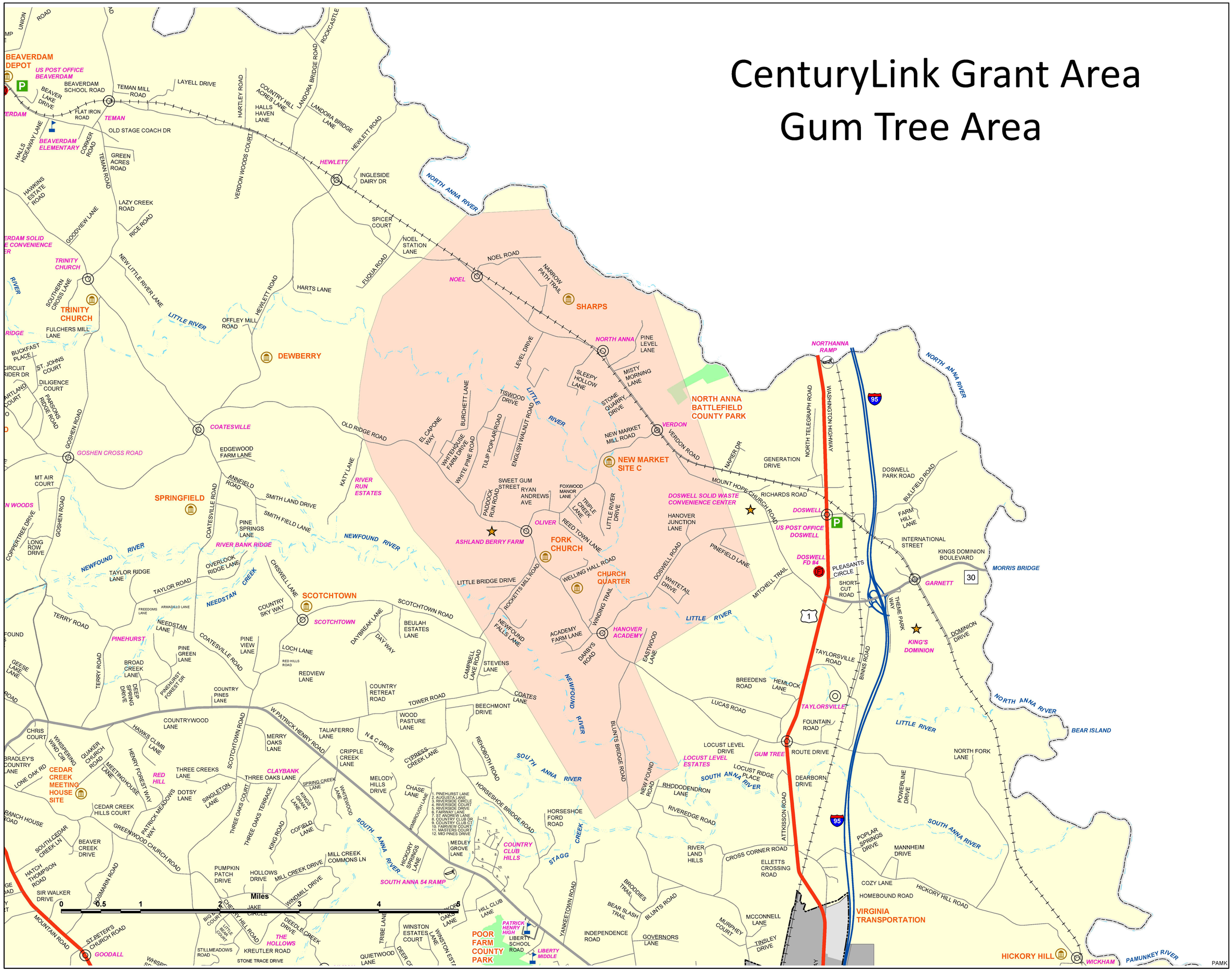
Optional

Attachment16HanoverCountyVATIPlan817202021828.pdf

Notes:

Hanover County, in partnership with CenturyLink, is pleased to submit this broadband grant application. The County recognizes the importance of providing our residences and businesses access to high speed internet. This grant request is just one of several initiatives the County has pursued to meet this goal.

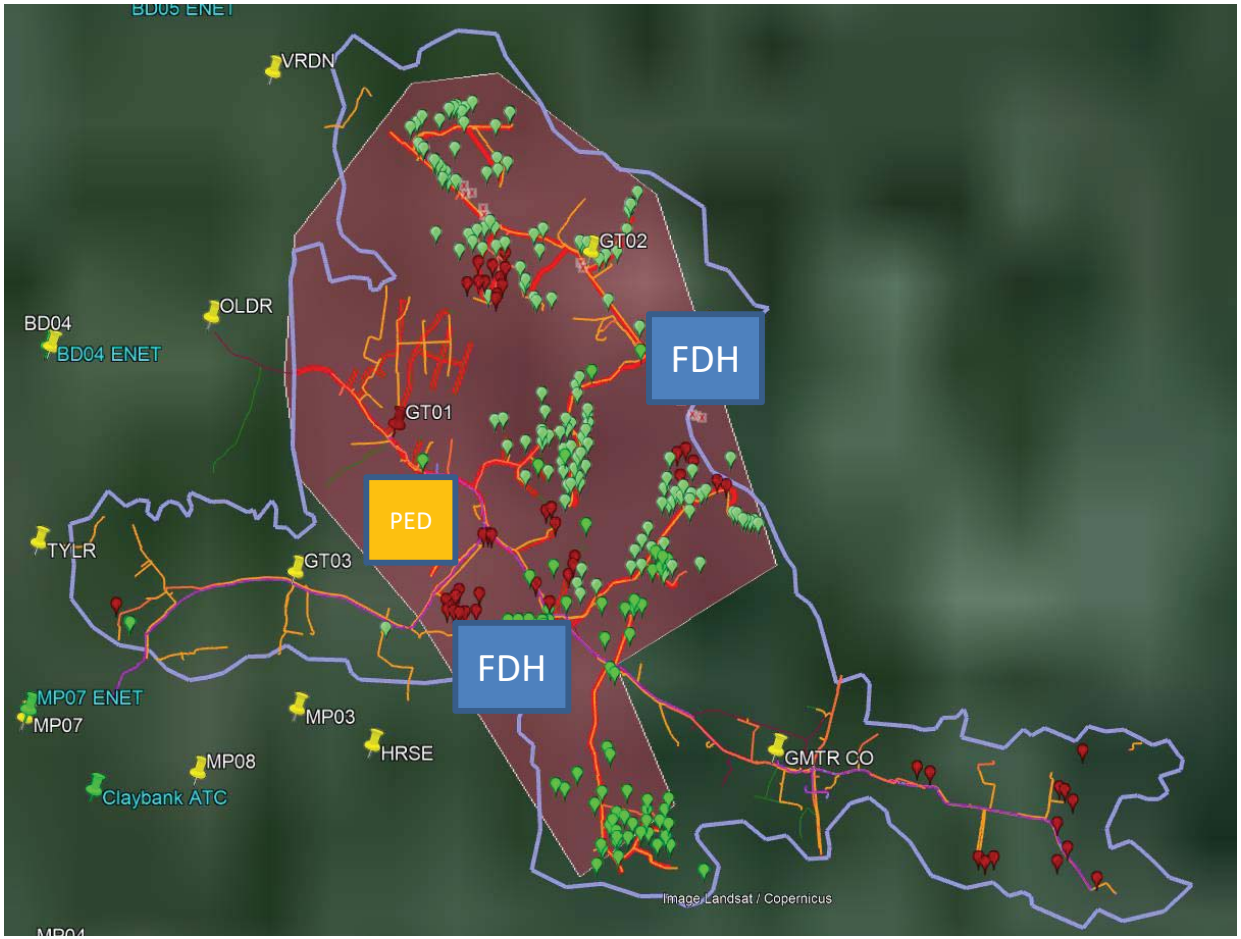
CenturyLink Grant Area
Gum Tree Area



Gum Tree – West of CO (FTTH)

$1,396.5K
$2,712/ 1G LU

515 1G LUs



Place 2 FDHs, 1 Splitter PED & 250 MDTS, $108.5K

Add E7 GPON w/ GPON @ GT01, $35K

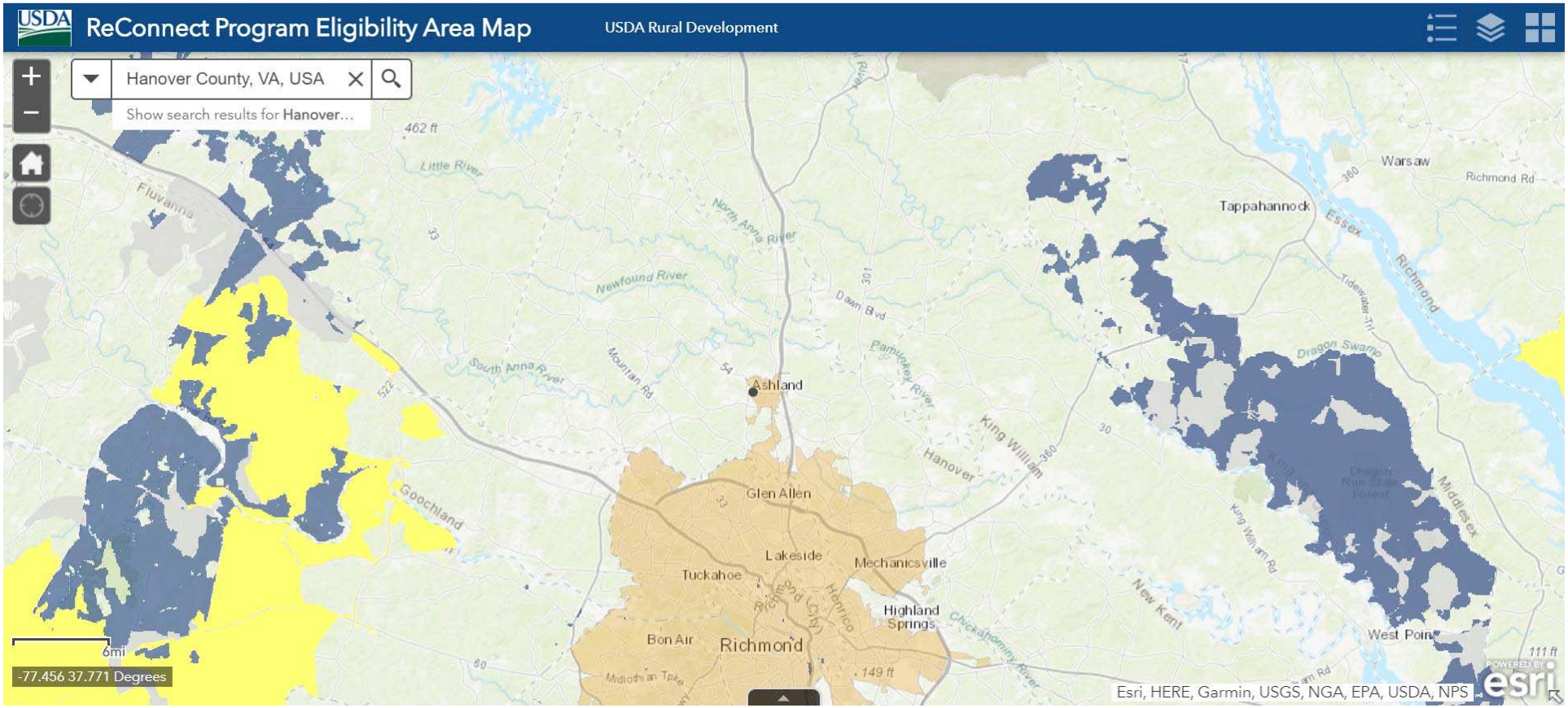
Attachment 2 – Documentation of Federal Funding

CenturyLink / Hanover County VATI 2021 Project

USDA ReConnect Program Eligibility Map

- Shows a pending application (yellow) to the west of Hanover County
- Shows a CAFII Auction winner to the east of Hanover County

Source: http://ruraldevelopment.maps.arcgis.com/apps/webappviewer/index.html?id=51bbfce8e72549dcb5374d0aa32e1736



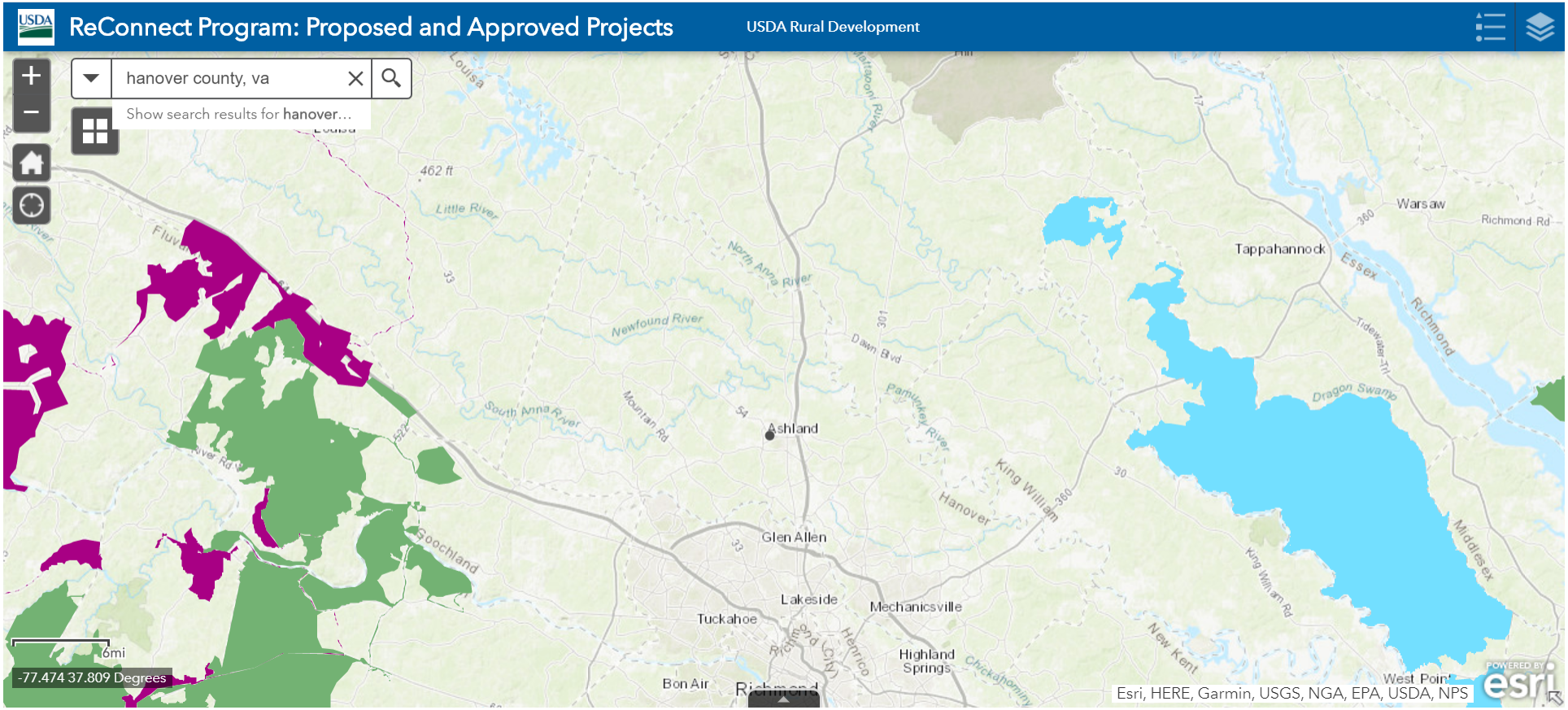
Attachment 2 – Documentation of Federal Funding

CenturyLink / Hanover County VATI 2021 Project

USDA ReConnect Program: Proposed and Approved Projects

This map confirms there are no ReConnect grants that are either pending or approved in Hanover County.

Source: https://www.arcgis.com/apps/webappviewer/index.html?id=e2d4c909e06c46d3aa9577bea695a2b9

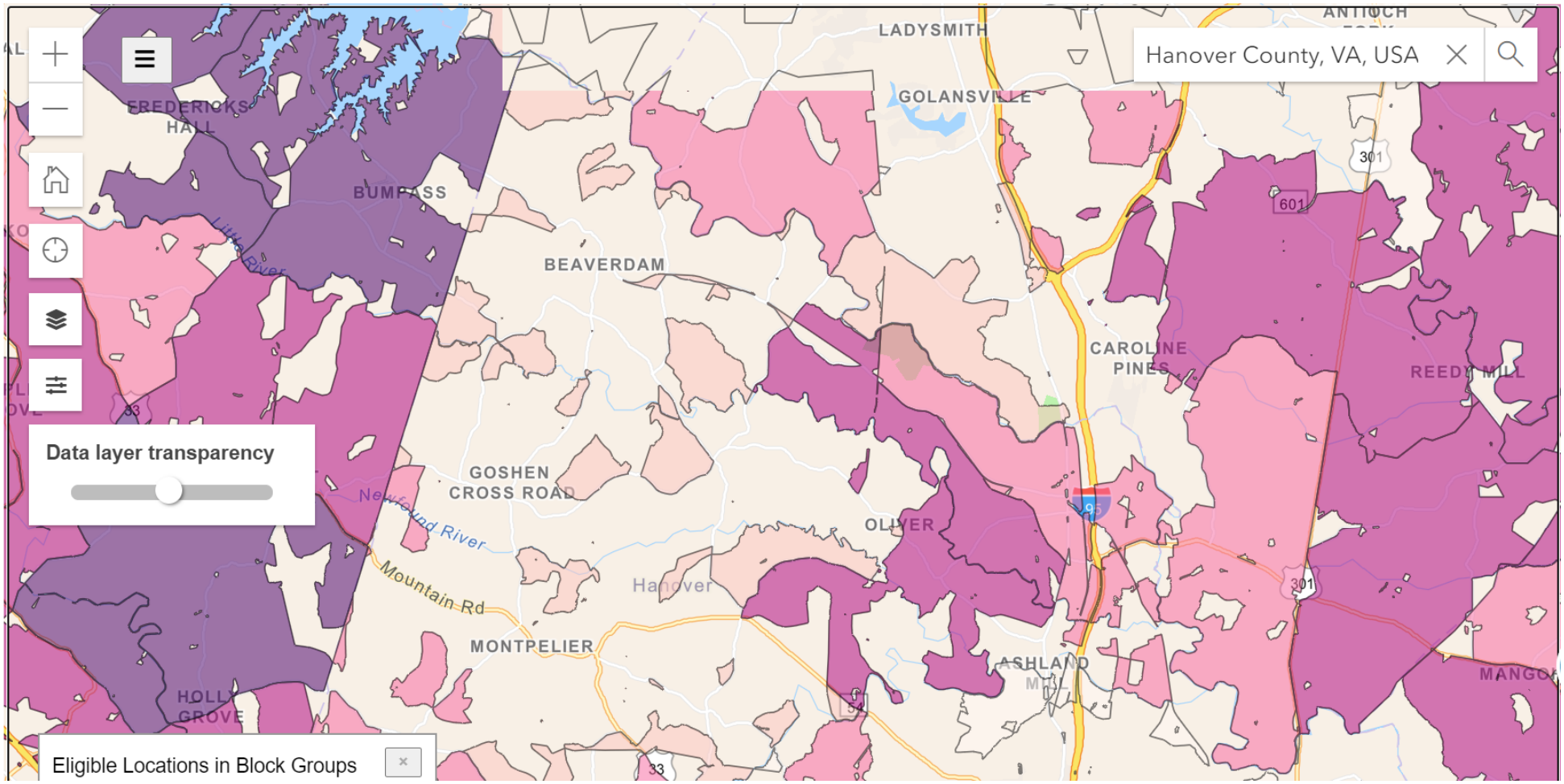


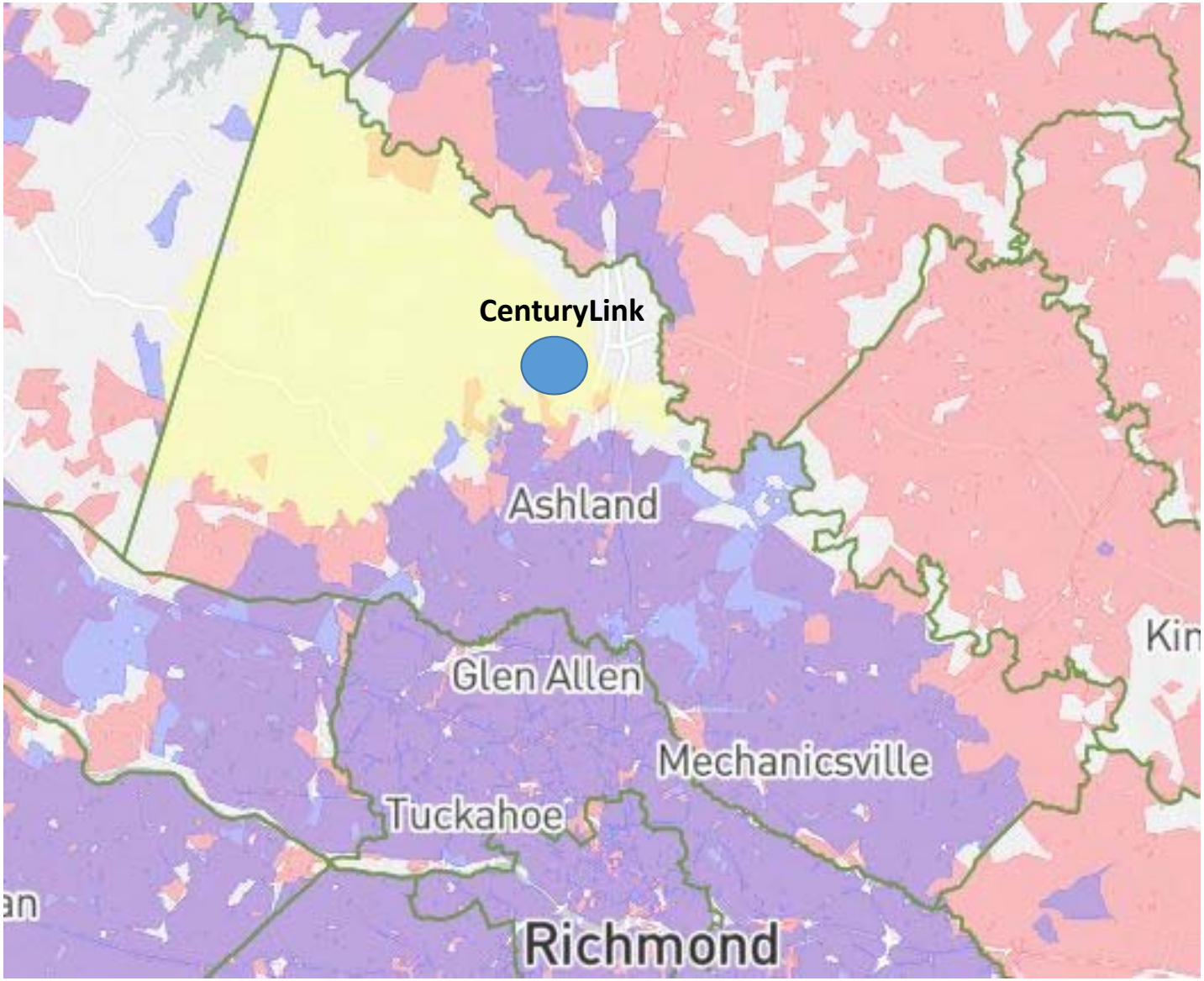
Attachment 2 – Documentation of Federal Funding

CenturyLink / Hanover County VATI 2021 Project

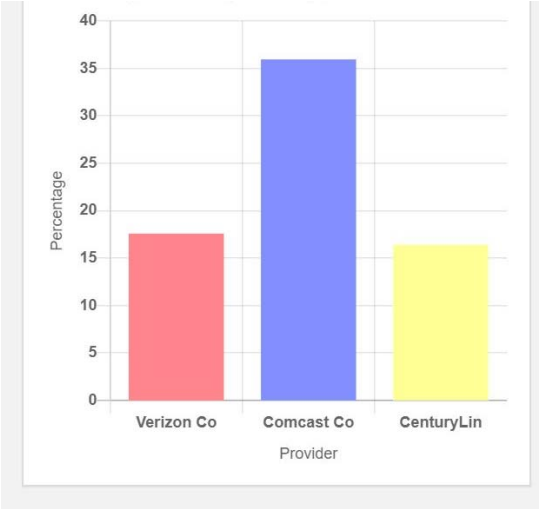
Rural Digital Opportunity Fund (RDOF) Updated Eligible Areas

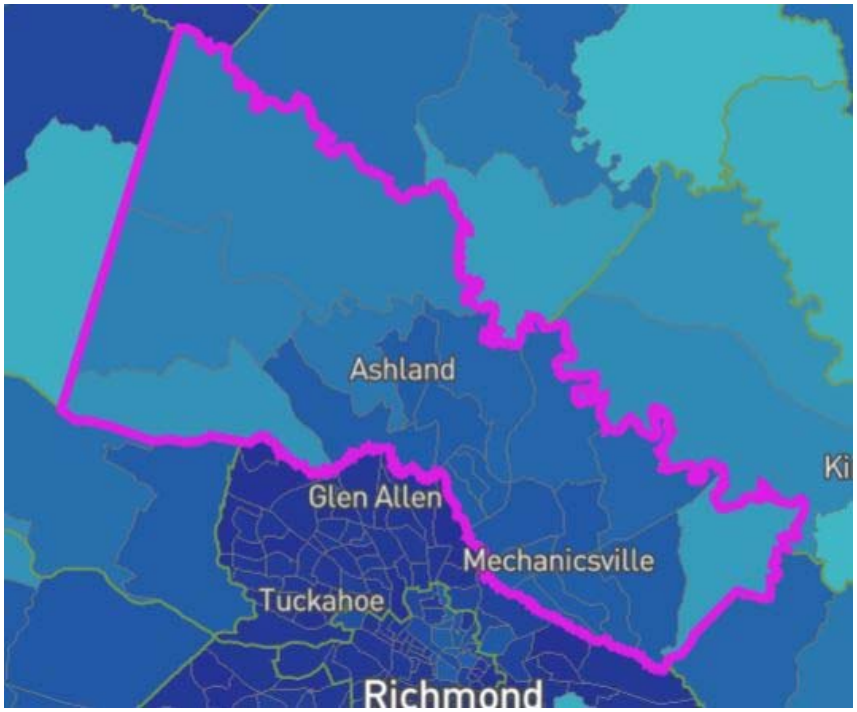
Source: https://www.fcc.gov/reports-research/maps/auction-904-updated-jun20-eligible-areas/





FCC
Broadband
Mapping





CenturyLink Area
FCC Mapping

2021 Virginia Telecommunication Initiative (VATI)
Passing Form

Type of Passings	Total Number in Project Area	Number with Speeds at 10/1 or below in Project Area
Residential	505	404
Businesses (non-home based)	0	0
Businesses (home-based)	81	65
Community Anchors	7	6
Non-residential	3	2
Total Number of Passings	515	412

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

Definitions

Passing – any structure that can receive service.

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

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

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

Attachment 5 – Propagation Map Wireless Project

This is 100 % fiber to the home project (no wireless) so there is no Attachment 5.

Attachment 6 – Timeline/Project Management Plan

Month	1	2	3	4	5	6	7	8	9	10	11	12
Approval/Release Funding from VATI												
Project Planning												
Site Survey												
Easement Research and Acquisition												
Design Engineering												
Permit Acquisition												
OSP Fiber Build												
Site Preparation												
Commercial Power Activation												
Equipment Installation & Turn-up												
Cable Transfers												
Market Launch												

MEMORANDUM OF UNDERSTANDING

The parties to this Memorandum of Understanding (MOU) are Hanover County and CenturyLink. The purpose of this MOU is to establish a commitment by the parties to participate in the development of a grant proposal in 2020 for the Virginia Telecommunications Initiative (VATI) program established by the Virginia Department of Housing and Community Development (DHCD). Hanover County and CenturyLink agree to work jointly to coordinate a complete VATI application, making decisions on roles and responsibilities where necessary to facilitate a timely and effective submission of necessary information. Although a partnership between Hanover County and CenturyLink has not yet been formalized for this proposed project, both parties are collaborating on an agreement to be executed if DHCD awards them a VATI grant. An agreement would cover the following areas.

CenturyLink commits to:

a. Draft a Project Management Plan;
b. Complete all Grant Activities described in pertinent DHCD agreements;
c. Provide regular updates to Hanover County on the status of the project;
d. Notify Hanover County if its assistance is needed;
e. Submit requests for payment (no more frequently than monthly) to Hanover County as work is completed;
f. Complete all work within the required timeframe;
g. Provide Hanover County information on the locations where broadband had been enabled; and
h. Propose any required nondisclosure agreements if CenturyLink were requested to share confidential information.

Hanover County commits to:

a. Processing requests for payment in a timely manner;
b. Review information provided by CenturyLink and submit requests for additional information in a timely manner;
c. Complete any necessary non-disclosure agreements;
d. Complete all Grant Activities described in pertinent DHCD agreements;
e. Assist CenturyLink in obtaining necessary rights of way within the scope of Hanover County's authority; and
f. Assist in contacting residents and others as appropriate to foster completion of the project within the required timeframe.

CENTURYLINK

Name (printed): Kevin McCarter

Title: RVP East

Signature: Kevin McCarter

Date: 08/14/2020

HANOVER COUNTY

Name (printed): Frank W. Harksen, Jr.

Title: Deputy County Administrator

Signature: [illegible]

Date: 8.14.2020

Attachment 8 – Funding Sources

Hanover County / CenturyLink VATI 2021

The funding source table is provided below. The total project cost is $1,396,500 which includes all equipment, fiber, permits and easements, material and labor for the construction and installation of the fiber solution.

Hanover County will contribute $25,750 towards the project and the VATI grant amount is $1,014,251. CenturyLink has financial approval to spend $1,396,500 on the construction of the solution, and after receiving the grant from Hanover County and VATI will fund the remaining $356,499.

Hanover County VATI 2021										
Project	Capital Costs			Passings		VATI				
Project	ISP	OSP	Total Construction	Living units	Cost/ Living Unit	CenturyLink Amount	Hanover County Amount	VATI Grant Amount	VATI Cost/LU	VATI Grant %
Gum Tree	$ 35,000	$ 1,361,500	$ 1,396,500	515	$ 2,643.69	$ 356,499	$ 25,750	$1,014,251	$1,969	72.6%

Attachment 9 – Documentation of Match Funding

The total project cost is $1,396,500. CenturyLink is providing $356,499 in cash to the project as the co-applicant, which is 25.55% of the project cost. The Hanover County Board of Supervisor Community Development Committee authorized a County match of $50 per passing equating to $25,750, which is 1.85% of the project cost. The funding is subject to appropriation by the full Board. The proposed VATI grant request is in the amount of $1,014,251, which is 72.60% of the project cost. The matching funds invested by CenturyLink and Hanover County include the full costs of the project, including planning, engineering, permits and easements, and materials and labor for the construction and installation of the fiber solution.

VIRGINIA: At a regular meeting of the Board of Supervisors for Hanover County held in the Board Room of the Hanover County Administration Building on the 22nd day of July, 2020, at 3:00 p.m.

Present: Mr. Sean M. Davis, Vice-Chairman
Ms. Susan P. Dibble
Mr. F. Michael Herzberg, IV
Mrs. Angela Kelly-Wiecek
Mr. W. Canova Peterson
Ms. Faye O. Prichard

Absent: Mr. Aubrey M. Stanley, Chairman

A RESOLUTION APPROVING THE FILING OF A GRANT APPLICATION 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 "last-mile" broadband telecommunications infrastructure in the unserved areas of the Commonwealth. The deadline for applications has been set for 17 August 2020; and
WHEREAS, the program guidelines for grant application, requires a government entity as the applicant with a qualified and experienced private sector broadband provider as the co- applicant; and

WHEREAS, CenturyLink has recently discussed its plans to extend parts of its system in the north western area of the County. This project will bring high speed internet to portions of Hanover and could involve many miles of construction.

NOW, THEREFORE, BE IT RESOLVED, the Hanover County Board of Supervisors does hereby approve the submittal of a grant application to the Virginia Department of Housing and Community Development to assist in constructing "last-mile" broadband telecommunications infrastructure in the unserved areas of the Commonwealth and authorizes the County Administrator to take such action necessary to file the grant application with DHCD with the co-applicant, CenturyLink.

On motion by Mrs. Kelly-Wiecek, seconded by Ms. Prichard, the members of the Hanover County Board of Supervisors voted to adopt this Resolution, as follows:

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

Date: July 24, 2020

John A. Budesky
County Administrator / Clerk
Hanover County Board of Supervisors

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

August 7, 2020

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

Dear Dr. Holmes:

I would like to express my strong support for Hanover County's Virginia Telecommunications Initiative g rant 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,

Hyland F. Fowler, Jr.

DISTRICT: (804) 305-8867 • RICHMOND: (804) 698-1055 • DELBFOWLER@HOUSE.VIRGINIA.GOV

COMMONWEALTH OF VIRGINIA
HOUSE OF DELEGATES
RICHMOND

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

NINETY-SEVENTH DISTRICT

COMMITTEE ASSIGNMENTS:
TRANSPORTATION
COUNTIES, CITIES AND TOWNS

August 5, 2020

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 increase access to broadband with Comcast by upgrading and expanding its network.

There is a demonstrated need in the 97th District, which covers eastern Hanover, for access to broadband. I have heard 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.

Increased access to high speed broadband will allow businesses to compete more effectively; provide new educational opportunities for students, especially as many students will utilize virtual learning; and offer residents more convenience and entertainment in their homes. Additional broadband will also draw new businesses and residents from outside the region by allowing telecommuting and other networking options necessary in today's global economy.

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,

Scott A. Wyatt
Member, Virginia House of Delegates

RECEIVED
AUG 10 2020
COUNTY ADMINISTRATOR'S OFFICE

DISTRICT: (804) 442-2737 • RICHMOND: (804) 698-1097 • E-MAIL: DELSWYATT@HOUSE.VIRGINIA.GOV

Name	Address	USER_Email	Expansion Area Company
Alice Talley	12444 Noel Road	altalley49@aol.com	CenturyLink
Allen Kincaid	16466 Little River Drive	awkmountaineer69@gmail.com	CenturyLink
Althea Steers	16429 Little River Drive	Altheafield@gmail.com	CenturyLink
Angela Dreyfuss	16422 Little River Drive Beaverdam 23015	A.dreyfuss@hotmail.com	CenturyLink
Anne Vig	15986 Academy Farm Lane Doswell	vtcaus@yahoo.com	CenturyLink
Bill Ward	15166 Blunts Bridge Road	bward@provenancehealth.com	CenturyLink
Bridgette Rappe	12942 Sweet Gum St Beaverdam, VA 23015	bridgette.rappe@yahoo.com	CenturyLink
Carol Sutton-Abaire	17227 White Pine Rd., Beaverdam, VA 23015	cesabaire@embarqmail.com	CenturyLink
Carolyn Johnson	13072 noel rd	cjohnson804@outlook.com	CenturyLink
Celeste Lawton	12320 welling hall rd Doswell VA 23047	celestel1025@gmail.com	CenturyLink
Christopher Landeck	16466 Little River Dr.	todd.landeck@gmail.com	CenturyLink
Clayton Eugene Gits	17335 Tiswood Drive	clayton@missionrealty.com	CenturyLink
Crystal Tate	16369 Little River Drive	Crystal.Tate@WestRock.com	CenturyLink
Cynthia Thompson	11211 Pinefield Lane	Cinrichard1@gmail.com	CenturyLink
David Jordan	17145 English Walnut rd. Beverdam, Va	djordan9@NETZERO.NET	CenturyLink
Debbie Woody	17172 English Walnut Road, Beaverdam, VA 23015	Woody9945@centurylink.net	CenturyLink
Diana Ripka	12432 Noel Road, Doswell, VA 23047	dripka@rumsey.com	CenturyLink
Douglas Webb	16492 Little River Drive	dwebb1117@aol.com	CenturyLink
Everett Bole	17104 White Pine Road, Beaverdam VA 23015	pug4@me.com	CenturyLink
Fernanda Crandol	16394 Little River Drive	vtmom2b@aol.com	CenturyLink
Francesca Schilling	13230 Old Ridge Rd	Francesca0320@yahoo.com	CenturyLink
Grayson Taylor	12309 old ridge rd doswell va 23047	grayson1974@yahoo.com	CenturyLink
Gregory Vig	15986 academy farm lane, Doswell, va 23047	Gvigvt@yahoo.com	CenturyLink
Herman S Streilein Jr	12305 NEW MARKET MILL RD, same	hstreilein2@live.com	CenturyLink
Ian Melton	16361 Little River Dr Beaverdam Va 23015	Imelton@wjrapp.com	CenturyLink
Jack Haar	16096 Rocketts Mill Rd	jlhaar2@gmail.com	CenturyLink
Jarrod Hamm	12264 Darbys Rd	jarrod.hamm@gmail.com	CenturyLink
Jason Spivey	13077 Old Ridge rd	jspivey1084@gmail.com	CenturyLink
Jay Jones	17253 TULIP POPLAR ROAD BEAVERDAM VA 23015	ginger.jones@cox.net	CenturyLink
Jessica Adams	16085 ROCKETTS MILL RD	jadams536@gmail.com	CenturyLink
Jessica Carneal	17015 little river drive, Beaverdam, va 23015	Livlif2itsfulest@gmail.com	CenturyLink
john wayne evans sr	16380 little river dr	wayne@southwoodbuilders.com	CenturyLink
Joyce Dyer	17325 Tiswood Drive, Beaverdam, VA 23015	joyceedyer@gmail.com	CenturyLink
Julie Casanova	12541 new market mill road	Jacasanova3@gmail.com	CenturyLink

Kevin McLaughlin	12475 Old Ridge Rd, Doswell VA 23047	muttopia@gmail.com	CenturyLink
Kirk Baumbach	17657 Level Drive, Doswell, VA 23047	kirk.baumbach@gmail.com	CenturyLink
Lauren DeNoia	17145 Tulip Poplar Road, Beaverdam, VA 23015	lauren.m.denoia@gmail.com	CenturyLink
Luke & Jessica Adams	16085 Rocketts Mill Rd Doswell VA 23047	ldadams@gmail.com	CenturyLink
Madilyn Walls	12465 Old Ridge Road Doswell Virginia 23047	Madilynwalls73@gmail.com	CenturyLink
Madison walls	12465 old ridge rd Doswell va 23047	Madisonwalls72@gmail.com	CenturyLink
Michael Joyce	17268 White Pine Rd Beaverdam, VA 23015	pockets637@gmail.com	CenturyLink
Michael McGrew	12293 New Market Mill Road Beaverdam VA 23015	mcg456@netzero.com	CenturyLink
Michael Wessells	17028 Little River Drive	mikewessells@gmail.com	CenturyLink
MIchelle Quigley	17215 Burchett Lane, Beaverdam, VA	mnsquigley@aol.com	CenturyLink
Mission Critical Support, LLC	16355 Little River Dr	lyall.shank@missioncriticalsupport.com	CenturyLink
Muniec	13177 Old Ridge Rd Beaverdam, Va 23017	Lmuniec@yahoo.com	CenturyLink
Nancy Kitchens	16496 Little River Dr Beaverdam VA 23015	Nancy.kitchens@att.net	CenturyLink
nancy taylor	12247 old ridge rd doswell va 23047	nantaylor13@gmail.com	CenturyLink
Paula Muniec	12520 Old Ridge Rd Doswell VA 23047	gregandpaula@embarqmail.com	CenturyLink
Randall L Ashburn	11431 Whitetail Drive, Doswell, Va 23047	Randallashburn@yahoo.com	CenturyLink
Rebecca Watson	17312 Tiswood Dr., Beaverdam, VA 23015	abwatson723@gmail.com	CenturyLink
Sara Holder	13063 Noel Road	seoholder@live.com	CenturyLink
SCOTT SPENCER	16080 Academy Farm Lane, doswell, va 23047	SCOTT.SPENCER@ROCKETMAIL.COM	CenturyLink
Steven Ellis	12440 Little Bridge Dr., Doswell	sellis@workshaper.com	CenturyLink
Steven R Kitchens	16410 Little River Drive	richmondkitchens@yahoo.com	CenturyLink
Tammy Brooks	12140 Doswell Road Doswell VA 23047	Brooksie1104@Gmail.com	CenturyLink
Thomas D. Courtney	12493 Old Ridge rd	dancourtney@embarqmail.com	CenturyLink
Tommy Manis	17029 Little River Dr	tommy.manis@outlook.com	CenturyLink
Tonya and Buddy Austin	16415 Little River Drive, Beaverdam, VA 23015	tjaye@msn.com	CenturyLink
wanda jacobus	13083 verdon road, doswell, va 23047	jake0115@msn.com	CenturyLink
William Kitchens	16496 Little River Drive, Beaverdam, VA 23015	Bill.kitchens@att.net	CenturyLink
Tonya Austin		TJAYE@msn.com	CenturyLink
Fernanda Crandol		fernanda.crandol@dof.virginia.gov	CenturyLink
Donna Deskins		donnakdeskins@gmail.com	CenturyLink
Althea Steers		altheafield@gmail.com	CenturyLink
Jimmy Hopkins		jimmy.hopkins@verizon.net	CenturyLink
Randy Kitchens		srkitchens@aetna.com	CenturyLink
Selena Kitchens		selenakitchens1@gmail.com	CenturyLink
Bill Kitchens		bill.kitchens@att.net	CenturyLink

Nancy Kitchens		nancy.kitchens@att.net	CenturyLink
Tommy Manis		tommy.manis@outlook.com	CenturyLink
Michael McGrew		mcg456@netzero.net	CenturyLink
Wayne and Susan Melton		sbm.wlm@gmail.com	CenturyLink
Herman and Jeannie Streilein		hstreilein2@live.com	CenturyLink
Mike Wessells		mikewessells@gmail.com	CenturyLink
Brandon Wright		bwright@merchantsfixture.com	CenturyLink

-----Original Message-----
From: Melissa Miller [mailto:melissa@hanoverchamberva.com]
Sent: Monday, August 17, 2020 11:46 AM
To: Harksen, Frank W. <fwharksen@hanovercounty.gov>
Cc: 'Kenny Janes' <kenny.janes@ubs.com>
Subject: RE: Grant Application Support

Hi Frank,

Our Chamber can comment the following on broadband expansion.

The Hanover Chamber of Commerce, VA, represents over 315 businesses and 650 individuals across our County; our membership includes every size business and industry. Our mission is to provide leadership within the Hanover County VA business community, to champion economic development while safeguarding business interests and property rights, to promote professional standards and ethics within the business community and to maintain positive relationships among businesses, educators, governments and residents.

The Hanover Chamber of Commerce, VA, 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, enhance the possibilities for telecommuting, 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.

Again, thank you for contacting us on this topic.
Best,
Melissa

Melissa Miller
Executive Director
Hanover Chamber of Commerce

Office: (804) 442-2093
Direct: (804) 442-2094
melissa@hanoverchamberva.com

Events, News, Membership & more online at hanoverchamberva.com.

Attachment 11 – Derivation of Costs

Hanover County / CenturyLink VATI 2021

The completed budget template document is attached. The following additional information is provided.

The cost for this project includes all of the planning, engineering, materials and labor for the installation of the fiber facilities necessary for this project, along with the equipment necessary to provide the broadband service. The cost estimates are based on CenturyLink's extensive experience in building these same systems throughout the country. CenturyLink's network planning team thoroughly reviewed each passing when developing the project solution, and derived the costs based on the best solution to bring a fiber-to-the-home solution to Hanover County.

The project cost is $1,396,500, consisting of $35,000 in electronics and $1,361,500 in fiber and distribution facilities. These costs include all of the fiber installation and the equipment required for the project, along with all of the planning, permitting, construction and testing costs.

The below chart details out the ISP (electronics), OSP (GPON fiber and distribution), and total construction costs for each project area. Included in the OSP portion are the placement of two Fiber Distribution Hubs (FDH), one fiber splitter pedestal, 250 fiber pedestals (MDTS), and approximately 34 miles of fiber construction. The ISP portion is for new GPON electronics.

Project			***Capital Costs***		
Project	**Exchange**	**Slide**	**ISP**	**OSP**	**Total Construction**
Gum Tree	Gum Tree	3	$ 35,000	$ 1,361,500	$ 1,396,500

Attachment 12 – Documentation of Supporting Costs

Hanover County / CenturyLink VATI 2021

The cost for this project includes all of the planning, engineering, materials and labor for the installation of the fiber facilities necessary for this project, along with the equipment necessary to provide the broadband service. The cost estimates are based on CenturyLink's extensive experience in building these fiber-to-the-home systems throughout the Commonwealth and the country.

Pages three of the attached Summary document provides a detailed map of the project area including fiber routes, approximate locations of passings, placement of Fiber Distribution Hubs, number of MDTS (fiber pedestals), and required equipment. The map and data will be used to expedite the final network plans for CenturyLink's Engineering and Construction teams.

The below chart shows the materials and labor breakdown based on GPON fiber & distribution as well as electronics for each of the eleven project areas:

Project Area	GPON Fiber & Distribution Materials	GPON Fiber & Distribution Labor	GPON Fiber & Distribution	Electronics Materials	Electronics Labor	Total Electronics	Total Cost
Gum Tree	$ 476,525	$ 884,975	$1,361,500	$ 21,000	$ 14,000	$35,000	$ 1,396,500

Federal Communications Commission

Attachment 13 - FCC Form 477 Filing Summary (last two)

(RETAIN FOR YOUR RECORDS)

Form 477 Filing Summary

FRN: 0018626853 | Data as of: Dec 31, 2019 | Operations: ILEC | Submission Status: Revised - Submitted | Last Updated: Jun 8, 2020 15:27:55

Filer Identification

Section	Question	Response
Filer Information	Company Name	CenturyLink, Inc.
	Holding Company Name	CenturyLink, Inc.
	SAC ID	160138, 170209, 190254, 190567, 210341, 220356, 230470, 230471, 230485, 240506, 250298, 259788, 259789, 270434, 280458, 290552, 290557, 290567, 290574, 300630, 300661, 310671, 310689, 310702, 310705, 320747, 320801, 320832, 330841, 330857, 330877, 330884, 330895, 330898, 330913, 330922, 330924, 330931, 330934, 330950, 330956, 330959, 330970, 331155, 331159, 341057, 351126, 351274, 355141, 361445, 361456, 365142, 371595, 375143, 385144, 395145, 401142, 401143, 401144, 401705, 401711, 401720, 401727, 411317, 411842, 411957, 421151, 421957, 429784, 429785, 429786, 429787, 442084, 442101, 442114, 442117, 442140, 455101, 462185, 462187, 462208, 465102, 472223, 472225, 475103, 475162, 482249, 485104, 492274, 495105, 505107, 511595, 512299, 515108, 522400, 522408, 522410, 525161, 532361, 532400, 535163, 552223, 552348
	499 ID	801408, 802182, 802263, 802890, 803583, 803998, 804156, 804159, 804165, 804168, 804171, 804180, 804186, 804192, 804195, 804201, 804204, 804207, 804210, 804213, 804216, 804219, 804222, 804225, 804228, 804231, 804234, 804237, 804246, 804249, 804255, 804256, 805554, 805557, 805725, 806259, 806260, 806262, 806263, 806265, 806274, 806277, 807099, 807684, 808152, 808440, 815632, 817854, 817862, 817886, 818006, 820461, 820906, 820908, 820918, 822076, 822566, 822568
Data Contact Information	Data Contact Name	Robert Tice
	Data Contact Phone Number	(913) 884-1110
	Data Contact E-mail	robert.tice@centurylink.com

Emergency Operations Contact Information	Emergency Operations Name	Richard Rousselot
	Emergency Operations Phone Number	(913) 884-1108
	Emergency Operations E-mail	richard.a.rousselot@centurylink.com
Certifying Official Contact Information	Certifying Official Name	Stacy Hartman
	Certifying Official Phone Number	(720) 578-3421
	Certifying Official E-mail	stacy.hartman@centurylink.com

Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	CTL ILEC Deployment Rev 1 7_Dec 19.csv	Jun 8, 2020 14:06:03	1463243
Fixed Broadband Subscription	CTL ILEC Broadband Subscribership_Dec 19.csv	May 14, 2020 15:43:43	320832
Fixed Voice Subscription	CTL Wireline Census Tracts5_Dec 19.csv	May 14, 2020 15:43:43	13851

Federal Communications Commission

?rr_afkclr/1+DAA Dmpk 255 Dgjgle Qs k k_pw&j_qr rum'

(RETAIN FOR YOUR RECORDS)

Form 477 Filing Summary

FRN: **0018626853** | Data as of: **Jun 30, 2019** | Operations: **ILEC** | Submission Status: **Original - Submitted** | Last Updated: **Sep 3, 2019 22:06:42**

Filer Identification

Section	Question	Response
Filer Information	Company Name	CenturyLink, Inc.
	Holding Company Name	CenturyLink, Inc.
	SAC ID	160138, 170209, 190254, 190567, 210341, 220356, 230470, 230471, 230485, 240506, 250298, 259788, 259789, 270434, 280458, 290552, 290557, 290567, 290574, 300630, 300661, 310671, 310689, 310702, 310705, 320747, 320801, 320832, 330841, 330857, 330877, 330884, 330895, 330898, 330913, 330922, 330924, 330931, 330934, 330950, 330956, 330959, 330970, 331155, 331159, 341057, 351126, 351274, 355141, 361445, 361456, 365142, 371595, 375143, 385144, 395145, 401142, 401143, 401144, 401705, 401711, 401720, 401727, 411317, 411842, 411957, 421151, 421957, 429784, 429785, 429786, 429787, 442084, 442101, 442114, 442117, 442140, 455101, 462185, 462187, 462208, 465102, 472223, 472225, 475103, 475162, 482249, 485104, 492274, 495105, 505107, 511595, 512299, 515108, 522400, 522408, 522410, 525161, 532361, 532400, 535163, 552223, 552348
	499 ID	801408, 802182, 802263, 802890, 803583, 803998, 804156, 804159, 804165, 804168, 804171, 804180, 804186, 804192, 804195, 804201, 804204, 804207, 804210, 804213, 804216, 804219, 804222, 804225, 804228, 804231, 804234, 804237, 804246, 804249, 804255, 804256, 805554, 805557, 805725, 806259, 806260, 806262, 806263, 806265, 806274, 806277, 807099, 807684, 808152, 808440, 815632, 817854, 817862, 817886, 818006, 820461, 820906, 820908, 820918, 822076, 822566, 822568
Data Contact Information	Data Contact Name	Robert Tice
	Data Contact Phone Number	(913) 353-7069
	Data Contact E-mail	robert.tice@centurylink.com

Emergency Operations Contact Information	Emergency Operations Name	Richard Rousselot
	Emergency Operations Phone Number	(913) 353-7066
	Emergency Operations E-mail	richard.a.rousselot@centurylink.com
Certifying Official Contact Information	Certifying Official Name	Stacy Hartman
	Certifying Official Phone Number	(720) 578-3421
	Certifying Official E-mail	stacy.hartman@centurylink.com

Data Submitted

Form Section	File Name	Date & Time	Number of Rows
Fixed Broadband Deployment	CTL ILEC Deployment File 7v3_Jun 19.csv	Sep 3, 2019 21:41:22	61785
	CTL ILEC Deployment File 6v3_Jun 19.csv	Sep 3, 2019 21:12:56	249997
	CTL ILEC Deployment File 5v3_Jun 19.csv	Sep 3, 2019 20:22:17	249999
	CTL ILEC Deployment File 4v3_Jun 19.csv	Sep 3, 2019 19:04:36	249999
	CTL ILEC Deployment File 3v3_Jun 19.csv	Sep 3, 2019 19:03:51	249999
	CTL ILEC Deployment File 2v3_Jun 19.csv	Sep 3, 2019 18:07:05	249997
	CTL ILEC Deployment File 1v3_Jun 19.csv	Sep 3, 2019 16:50:00	249984
Fixed Broadband Subscription	CTL ILEC Broadband Subscribership_Jun 19_v2.csv	Aug 27, 2019 12:02:49	292177
Fixed Voice Subscription	CTL Wireline Census Tracts5_Jun 19.csv	Aug 21, 2019 12:21:37	13871

Business Name	Street Address	Business Type	Community Anchor
Arnold Kitchen and Bath Llc, N	11147 Pinefield Ln	Special trade contractors, nec, nsk	
Bolton Racing, LLC	11406 Doswell Rd	Nonclassifiable establishments	
Amy Marie Events	11416 Doswell Rd	Nonclassifiable establishments	
Watkins Medical Supplies	11416 Doswell Rd	Durable goods, nec	Y
3dog Properties LLC	11428 Whitetail Dr	Nonresidential building operators	
Beechwood Trust, Inc	11429 Doswell Rd	Operative builders, nsk	
Touch Points Public Relations	11438 Doswell Rd	Public relations services, nsk	
10 Ring Properties, LLC	11454 Whitetail Dr	Nonresidential building operators	
Shooters Archery, LLC	11454 Whitetail Dr	Sporting goods and bicycle shops, nsk	
Hanover Lawn and Landscaping	11509 Doswell Rd	Landscape counseling and planning, nsk	
Hindman Enterprises LLC	11528 Doswell Rd	Landscape counseling and planning, nsk	
Cherrydale Farm	12111 Old Ridge Rd	Dairy farms, nsk	
Wound Care Systems Inc	12226 Darbys Rd	Medical and hospital equipment, nsk	Y
Stevens Farm	12262 Welling Hall Rd	General farms, primarily crop	
The Ashland Garden Club	12278 New Market Mill Rd	Membership sports and recreation clubs	
Virginia Computer Forms and Products Inc	12341 New Market Mill Rd	Stationery and office supplies	
Haiti Outreach Ministries	12364 New Market Mill Rd	Religious organizations	Y
Hunt Bullfield Club LLC	12421 New Market Mill Rd	Membership sports and recreation clubs	
Anchors Down Farm Inc	12426 Noel Rd	General farms, primarily crop	
Jessi's Pocket Money LLC	12426 Noel Rd	Business services, nec, nsk	
Top of The Line Custom Interiors and Painting, LLC	12427 Verdon Rd	Painting and paper hanging	
Renaissance Center Associates Inc	12440 Little Bridge Dr	Management consulting services	
Market Methodology Inc	12449 Newfound Falls Ln	Grocery stores, nsk	
Alvin Lee Walsh Masonry	12456 Tower Rd	Masonry and other stonework	
Dcd General Contractors, LLC	12470 Newfound Falls Ln	Special trade contractors, nec, nsk	
CM Green Pastures LLC	12475 Old Ridge Rd	Business services, nec, nsk	
Episcopal Diocese of VA	12566 Old Ridge Rd	Religious organizations	Y
Doswell Roofing - Roofing Contractor	12602 Old Ridge Rd	Roofing, siding, and sheetmetal work, nsk	
Newton Ja Building Contra	12602 Old Ridge Rd	Special trade contractors, nec, nsk	
Ashland Berry Farm, Inc	12607 Old Ridge Rd	Berry crops	
Kabloom LLC	12607 Old Ridge Rd	Nonclassifiable establishments	
Mount Carmel Baptist Church	12607 Verdon Rd	Religious organizations	Y
Ctes, LLC	12664 Old Ridge Rd	Business services, nec, nsk	

Sim Net Inc	12664 Old Ridge Rd	X-ray apparatus and tubes, nsk	
The Best Little Hare House In Hanover LLC	12738 Old Ridge Rd	Building maintenance services, nec, nsk	
Triple J Enterprises	12955 Sweet Gum St	Data processing and preparation	
Jam Consulting LLC	12958 Sweet Gum St	Business consulting, nec, nsk	
Gifted Time Books LLC	13028 Old Ridge Rd	Books, periodicals, and newspapers	Y
Woodside III, L.L.C.	13033b Old Ridge Rd	Nonclassifiable establishments	
Brown's Bakery, LLC	13038 Old Ridge Rd	Retail bakeries	
John Durose	13093 Old Ridge Rd	Nonclassifiable establishments	
Tigerseal Products, LLC	13093 Old Ridge Rd	Paper; coated and laminated, nec	
Beaverdam Youth League	13099 Old Ridge Rd	Individual and family services, nsk	
Noel Oaks Enterprises, LLC	13109 Verdon Rd	Lawn and garden services	
A&S Vending Service of VA LLC	13189 Old Ridge Rd	Merchandising machine operators, nsk	
Integris Trailer Repair LLC	13222 Old Ridge Rd	Automotive repair shops, nec	
Ds Borkey Masonry LLC	14672 Blunts Bridge Rd	Masonry and other stonework	
Amcan Solutions, Inc.	14685 Blunts Bridge Rd	Engineering services, nsk	
Keaton Technologies, Lc	14685 Blunts Bridge Rd	Business services, nec, nsk	
Lavinder Corp	14728 Blunts Bridge Rd	Hotels and motels, nsk	
Virginia Industrial Products Incorporated	15042 New Found Rd	Repair services, nec, nsk	
Springwood Station	15400 Blunts Bridge Rd	Racing, including track operation, nsk	
Dw Downsizing LLC	16060 Academy Farm Ln	Nonclassifiable establishments	
Ss Asllc Units, LLC	16080 Academy Farm Ln	Nonclassifiable establishments	
Crystal Davis-Garthaffner Da	16166 Winding Trl	Nonclassifiable establishments	
Rosehaven Cleaning	16166 Winding Trl	Building maintenance services, nec, nsk	
R.A.J. Fish Corp.	16323 Rocketts Mill Rd	Nonclassifiable establishments	
Mission Critical Support, LLC	16355 Little River Dr	Social services, nec, nsk	Y
Red Thread Group, LLC	16355 Little River Dr	Piece goods and notions, nsk	
Garrison Manor Owners Association, Inc.	16368 Reed Town Ln	Civic and social associations	
Goodman Rm Builder	16368 Reed Town Ln	Single-family housing construction, nsk	
Meridian Land Company	16368 Reed Town Ln	Subdividers and developers, nec	
Tate Electrical Corporation	16369 Little River Dr	Electrical work, nsk	
Robert N Glenn PHD PC	16429 Little River Dr	Offices and clinics medical doctors,nsk	Y
Shirars Transportat Serv LLC	16501 Ryan Andrews Ave	Transportation services, nec, nsk	
The Programmers' Company Inc	16507 Paddock Run Rd	Nonclassifiable establishments	
Golden Eagle Transport LLC	17080 Whitehouse Farm Dr	Transportation services, nec, nsk	

Horse Highlights, LLC	17080 Whitehouse Farm Dr	Nonclassifiable establishments	
Fop Enterprises, LLC	17084 White Pine Rd	Sporting goods and bicycle shops, nsk	
Wooton Consulting	17145 Tulip Poplar Rd	Crude petroleum and natural gas, nsk	
C E Jones Crane & Rigging	17155 White Pine Rd	Special trade contractors, nec, nsk	
Sterling Estimating, LLC	17175 Tulip Poplar Rd	Business services, nec, nsk	
The French Boutique	17193 White Pine Rd	Nondurable goods, nec, nsk	
Jack Heidenescher	17251 Burchett Ln	Schools and educational services, nec	Y
The Opticom Group Inc	17252 Tulip Poplar Rd	Business consulting, nec, nsk	
Windborne Press LLC	17252 Tulip Poplar Rd	Miscellaneous publishing, nsk	
Word Craft LLC	17252 Tulip Poplar Rd	Advertising agencies, nsk	
Luv To Jump	17254 Burchett Ln	Nonclassifiable establishments	
Spotted Mutt Farms, LLC	17257 Tulip Poplar Rd	General farms, primarily crop	
Nicholas J Pajic	17283 Burchett Ln	Business services, nec, nsk	
Exline Consulting Services, Inc	17293 White Pine Rd	Business consulting, nec, nsk	
Gits Title LLC	17335 Tiswood Dr	Nonclassifiable establishments	
Waggies Heating and Air LLC	17383 Sleepy Hollow Ln	Plumbing, heating, air-conditioning, nsk	
Specialty Insurance	17443 Level Dr	Insurance agents,brokers,and service,nsk	
Petro Services	17511 Level Dr	Single-family housing construction, nsk	
Pleasant Level Road Association, LLC	17511 Level Dr	Membership organizations, nec, nsk	
Alphabet Creations, LLC	17615 Level Dr	Business services, nec, nsk	
Limerick's Eats & Treats, LLC	17615 Level Dr	Retail bakeries	
Capture Marine, LLC	18185 Narrow Path Trl	Business services, nec, nsk	
Castle Glen Estates Farm & Winery LLC	18185 Narrow Path Trl	Wine and distilled beverages	

County of Hanover

Public Broadband Expansion Plan Report

Initiative Overview

Hanover County comprises 471 square miles with 70% of the land area considered rural. Despite coverage maps indicating that virtually all of Hanover County has access to broadband (high speed) internet, a large portion of the County does not have adequate internet service coverage. Citizens and businesses located in the rural area have expressed significant frustration over their inability to acquire quality internet service. This lack of service affects their quality of life, their children's success at school, and their sense that Hanover County is a good place for them to continue to work and live.

Plan Purpose

This public broadband expansion plan is intended to provide a framework for implementation of adequate internet across the County focusing on those areas that have less than 25 Mbps download and 3 Mbps upload. In the absence of accurate mapping defining these areas, the County has identified five geographic areas where citizens and businesses have expressed frustration with their internet bandwidth. The County has developed a survey tool where citizens can document their internet bandwidth, so that an accurate inventory of existing conditions can be compiled. The County is pursuing all means necessary to expand broadband internet across the County, including partnerships with private internet service providers and pursuing grants.

Hanover County Digital Equity

Hanover County Schools have deployed devices to all teachers in support of on-line education. In addition, Schools are in the process of purchasing and deploying devices to students in third grade through high school. They will also deploy MiFi devices to those students with the biggest need. This has heightened the need for broadband internet access across the County.

Hanover County is a member of the Pamunkey Regional Library system. The Library has a full digital literacy program that includes providing public wireless, mobile hotspots, and other mobile services (printing, etc.). Six library branches are located in the County each with adequate internet service (40 Mbps – 100 Mbps). The Library has distributed MiFi devices for specific citizens.

Hanover County is using Cares Act funding to establish public wireless internet access at public buildings. This program includes placing wireless access points at up to 10 locations across the County with public access to internet services.

Wired and Wireless Efforts

Hanover County is primarily served by Comcast wired fiber internet. This service is generally available in the suburban area of the County. Comcast continues to work with the community to expand their services, but there remain pockets of homes that are within the Comcast service area that are not served. The County should continue to work with citizens to identify where these deficiencies exist and with Comcast to expand their internet services.

The western portion of the County is served by CenturyLink. CenturyLink provides DSL-based internet service, but is upgrading their infrastructure to a fiber-based internet service. DSL technology degrades the farther you get away from the main hub. The County should work with citizens to identify where service constraints exist.

Hanover continues to encourage other wired and wireless service providers to locate in the County, including having multiple discussions with Verizon to bring their advanced internet technology into the County.

For several years the County has tried to bring wireless internet service providers into the County. The Emergency Communications Department sent letters out to a number of wireless internet service providers and telephone companies to take advantage of the County's extensive emergency communication tower network consisting of 18 towers. A number of cellular providers have entered into tower lease agreements to co-locate on County towers with the plan to provide 4G LTE service (and potentially 5G service).

Hanover staff have also pursued wireless internet service provider partners. On July 13, 2015, County entered into a tower lease agreement with Last Mile Wireless to provide service in the Poor Farm area. Last Mile Wireless successfully brought its site online however less than a year later due to lack of subscribers in the area and other financial difficulties Last Mile defaulted on the terms of the agreement and discontinued service. In May of 2016, the County had discussions with All Points Broadband, a WISP. Ultimately, All Points made the decision not to enter into the Hanover market.

The next effort involved SCS Broadband, a WISP, and a comprehensive plan to serve most of the unserved and underserved areas of the County was developed. This plan involved the use of wireless internet technology installed on five existing Hanover communications towers (Phase 1) in far eastern and far western Hanover. Additional towers as mutually agreed upon would be added as part of Phase 2. On April 12, 2017, the Hanover Board of Supervisors approved the initial two lease agreements with SCS Broadband for access the eastern Hanover Communications towers at a greatly discounted rate, with the plan to lease an additional three towers. SCS Broadband never met any of its obligations.

Citizen Advisory Committees

In 2010 the Board of Supervisors established a high speed internet advisory committee to develop a plan to expand high speed internet access across the County. The committee drafted a report that included a number of recommendations. The County has been implementing these recommendations. However, at that time, internet service providers were not prevalent and the County was not able to generate any interest from private internet service providers to expand broadband internet service into rural areas of the County. In addition internet service technology has been greatly enhanced. In 2010 high speed internet was considered speeds greater than 4 Mbps download and 1 Mbps upload (today that is 25/3).

The High Speed Internet Committee (HSIC) reported back in 2012 with a number of recommendations for consideration by the Board, which have served as the basis for the County's broadband planning effort. A summary of their recommendations:

- Designate point person for broadband – completed
- Communication – completed (on-going)
- Pursue grant opportunities – completed (on-going)
- Map internet availability – completed (using State/Federal mapping resources and on-line surveys)
- Ensure Libraries have broadband internet service – completed
- Consider establishing special tax districts – completed (Board of Supervisors determined not to proceed with this option)

Additional activities the County has been pursuing related to broadband initiatives include:

- Permitting processes have been streamlined to promote tower expansion and additional tower capacity.
- All known Internet Service providers have been contacted by the County to encourage expansion within Hanover County. Most providers have expressed concern over their lack of opportunity to see a Return on Investment for the needed capital to provide service within less densely populated areas of the county.
- Engaged Secretary of Technology's office for assistance on identifying solutions to meet the needs of Hanover County Residents.
- Created list of providers and numbers to call that will be placed on the County website.

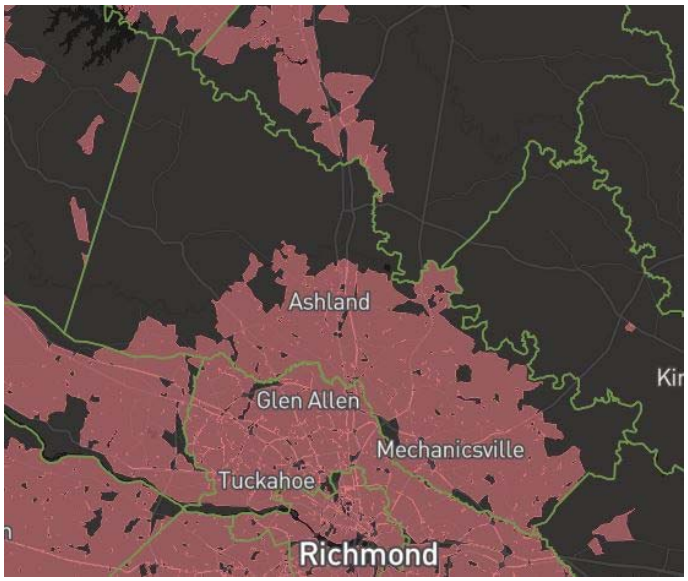
As the County has grown and technology has evolved, the reliance on adequate internet service has become a priority for citizens and businesses in the County. As such, in 2019 the Board of Supervisors established another broadband advisory committee.

This committee has been tasked with a similar goal to develop recommendations to expand broadband internet access across the County. The Committee's report is due in early 2021.

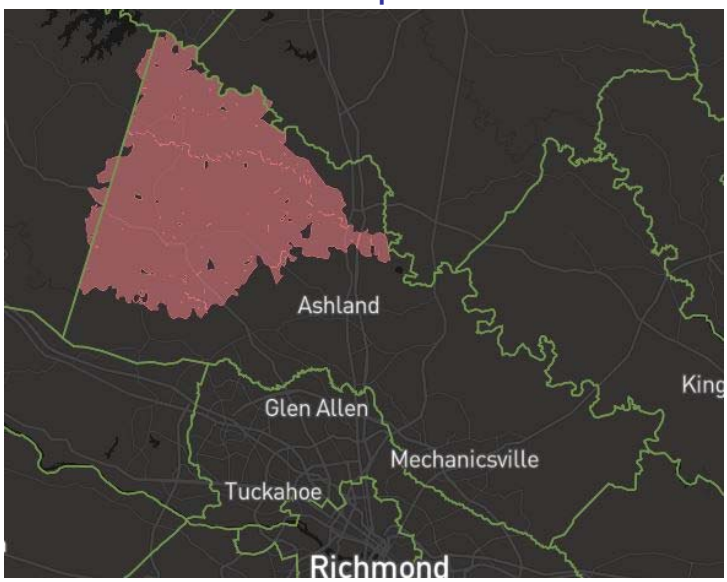
Targeted Geographic Areas

Hanover County has two major internet service providers, Comcast and CenturyLink. Comcast has established broadband service in most of the County's suburban area. CenturyLink has established some broadband service to communities in the western part of the County. CenturyLink's internet service can vary depending on how close a consumer is to where the service hub is located. Service areas for these providers is documented at https://broadband.fcc.gov as shown in the following maps. Various other internet service providers, such as Verizon, are located in the County primarily using DSL technology. Hanover is partnering with CenturyLink and Comcast on VATI broadband grant applications for 2020/2021.

Comcast Service Area



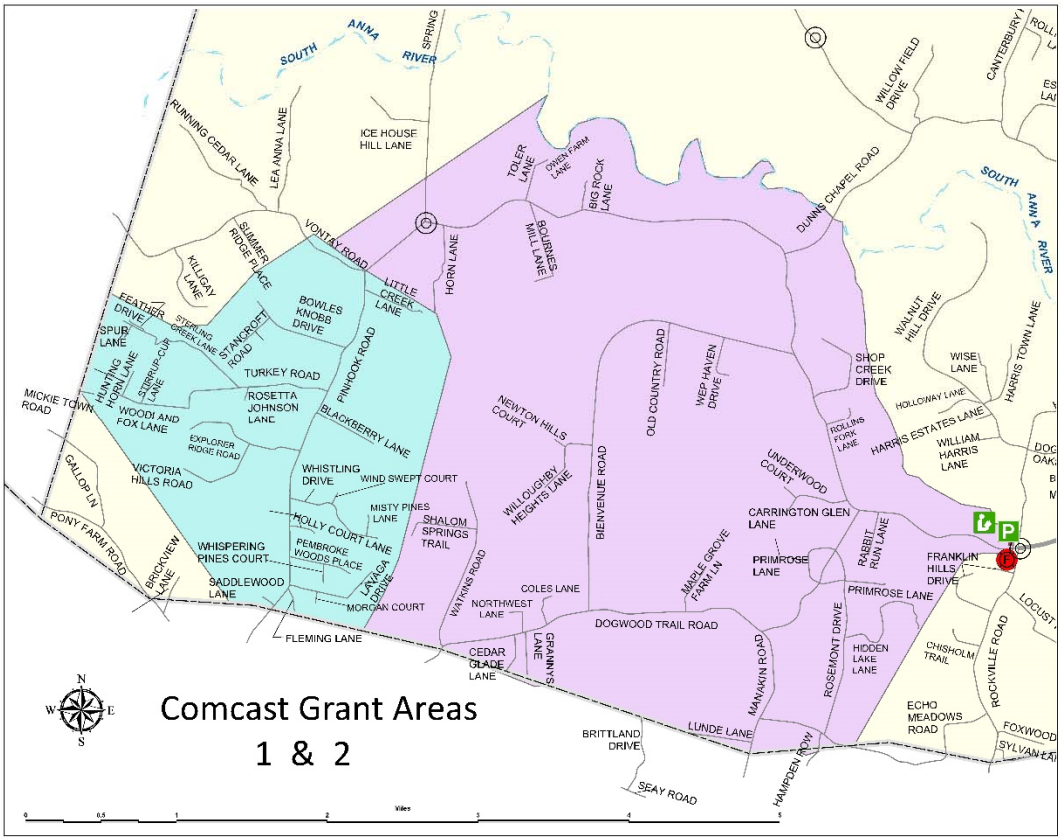
CenturyLink Service Area



The County is partnering with CenturyLink and Comcast to expand their services areas and/or service within their territories to provide broadband internet access. The County encourages any wireline or wireless internet service provider to implement internet service in the County. Based on these internet service provider territories, the County has identified five target areas that would serve the gaps between these two providers for the deployment of broadband level internet service. In general these areas are located in Gum Tree (Doswell), Rockville, Cold Harbor, and Old Church.

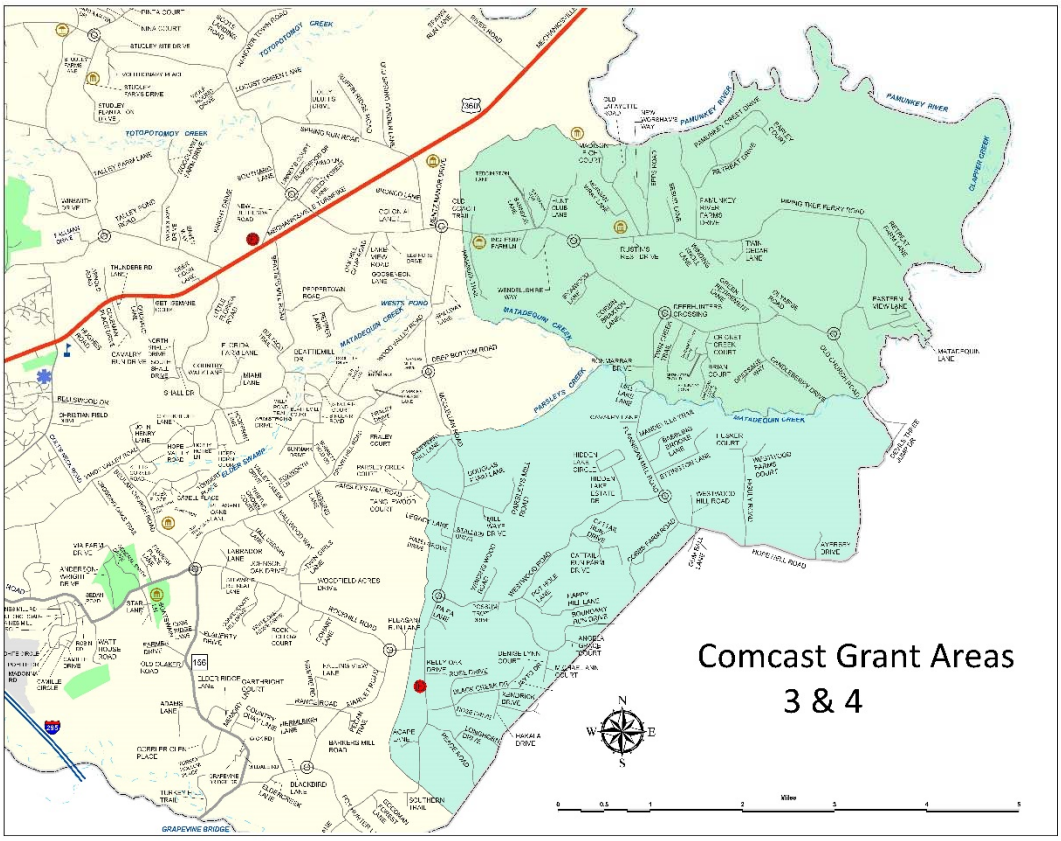
County of Hanover

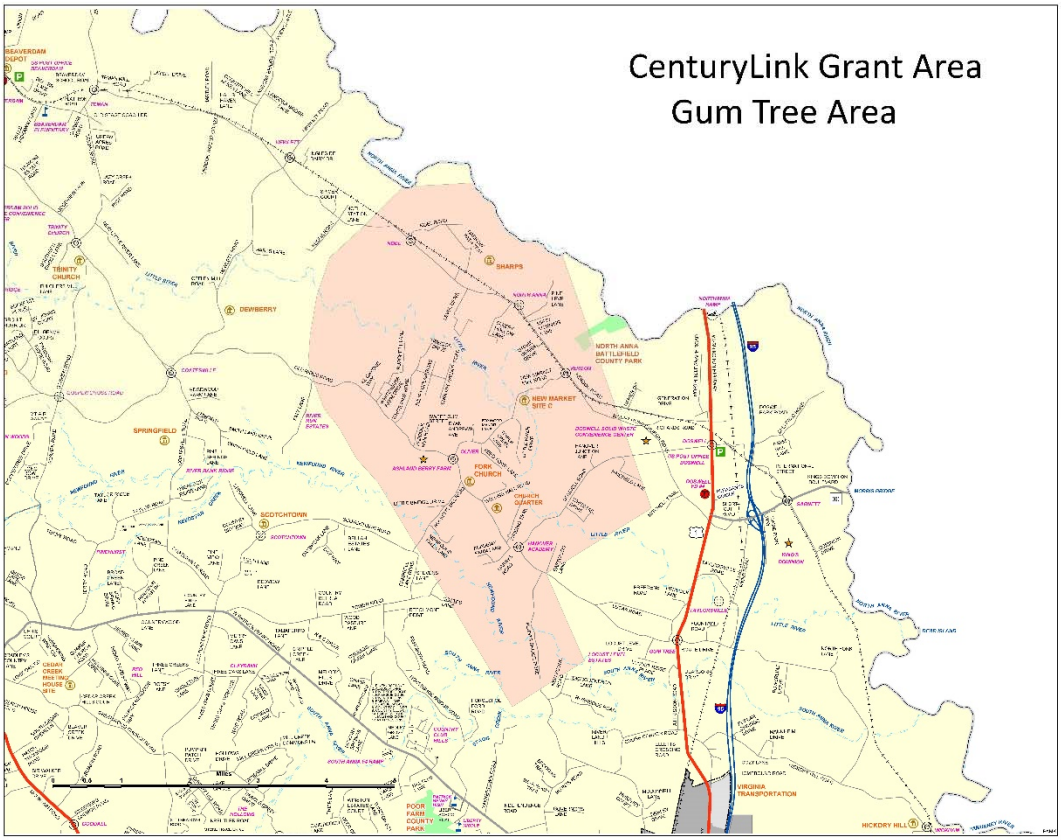
Public Broadband Expansion Plan Report



County of Hanover

Public Broadband Expansion Plan Report




CenturyLink Grant Area
Gum Tree Area

Hanover County
VATI 2021 – Gum Tree

Hanover County
& CenturyLink

Summary of Projects

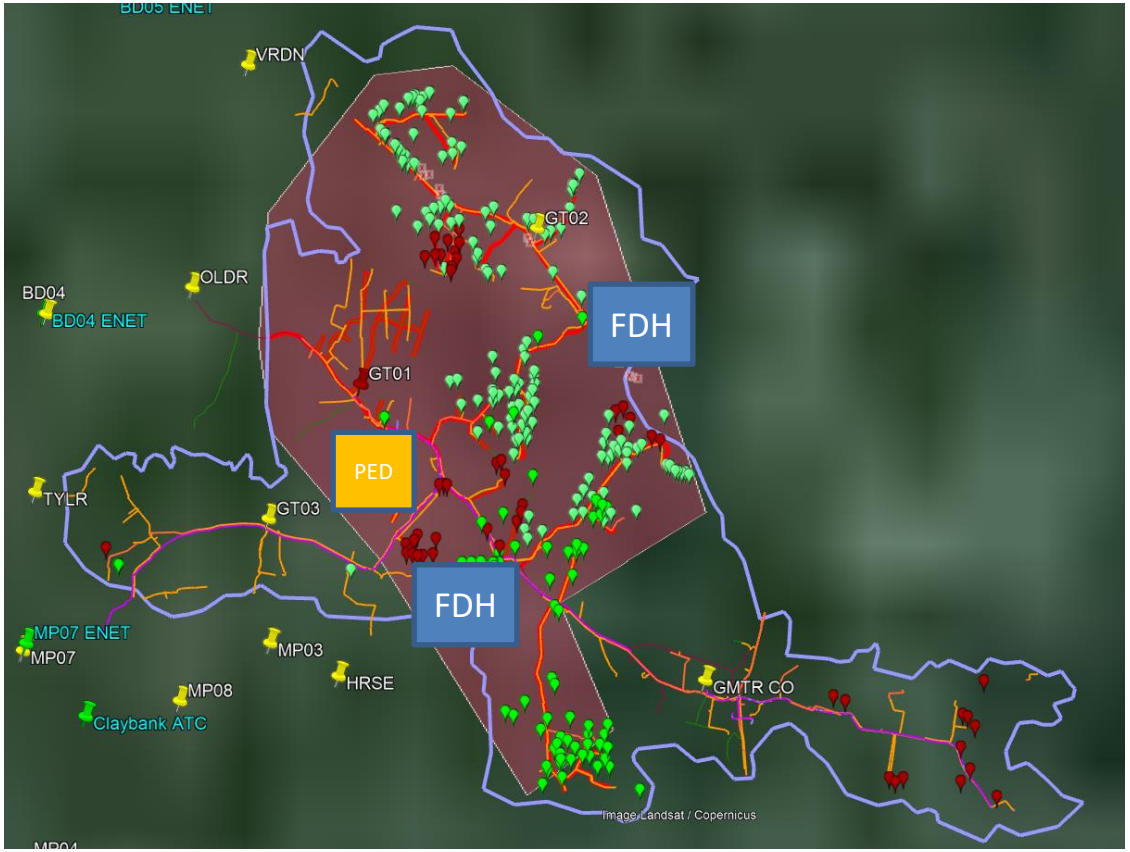
Hanover County VATI 2021												
Project			Capital Costs			Passings		VATI				
Project	Exchange	Slide	ISP	OSP	Total Construction	Living units	Cost/ Living Unit	CenturyLink Amount	Hanover County Amount	VATI Grant Amount	VATI Cost/LU	VATI Grant %
Gum Tree	Gum Tree	3	$ 35,000	$ 1,361,500	$ 1,396,500	515	$ 2,643.69	$ 356,499	$ 25,750	$1,014,251	$1,969	72.6%

Gum Tree – West of CO (FTTH)

$1,396.5K
$2,712/ 1G LU

Project includes placement of 179,000 feet of fiber

515 1G LUs



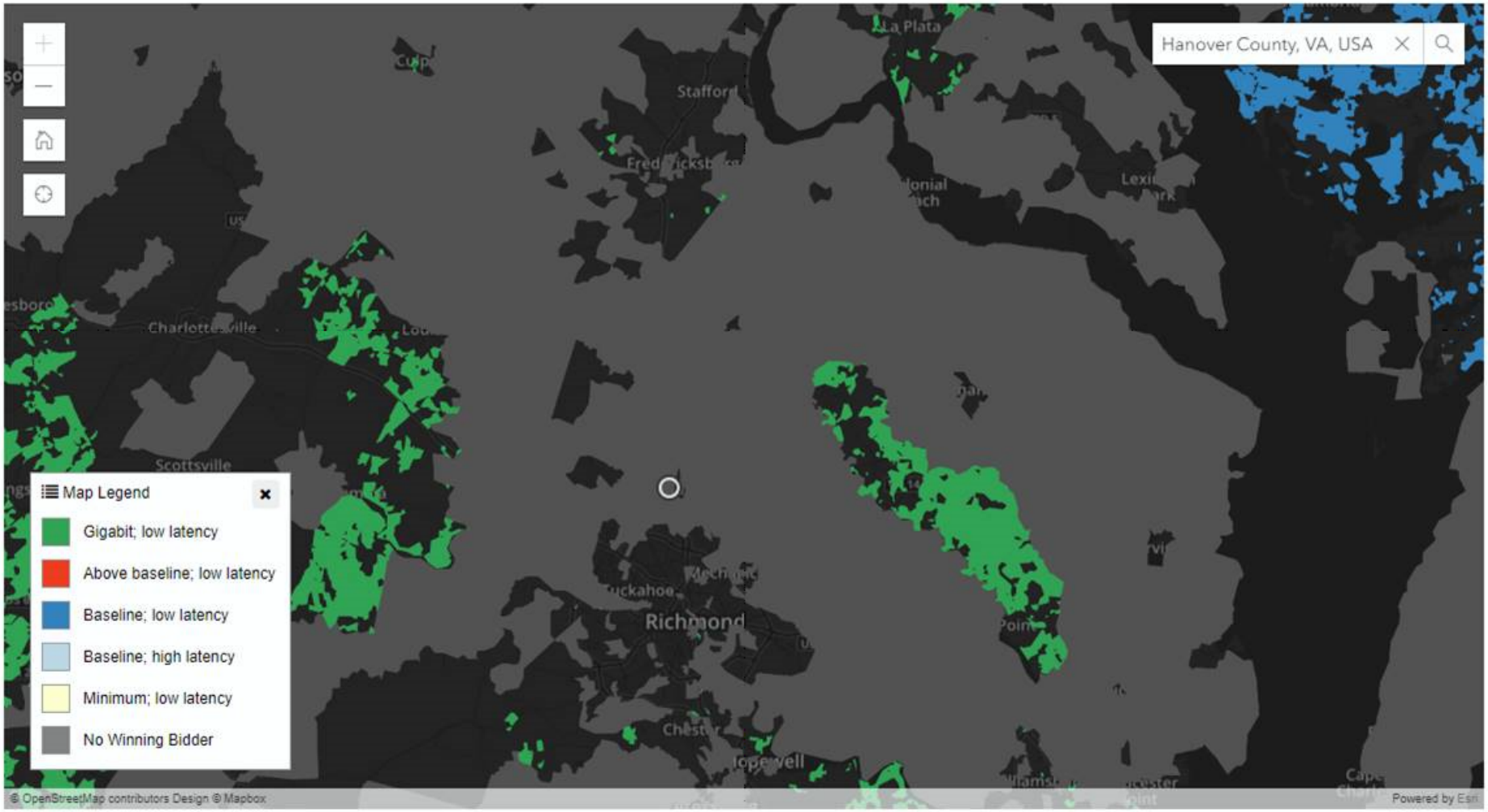
Place 2 FDHs, 1 Splitter PED & 250 MDTS, $108.5K

Add E7 GPON w/ GPON @ GT01, $35K

Federal Broadband Maps

Connect America Fund Phase II: Auction 903 Results

Data as of 4/3/19

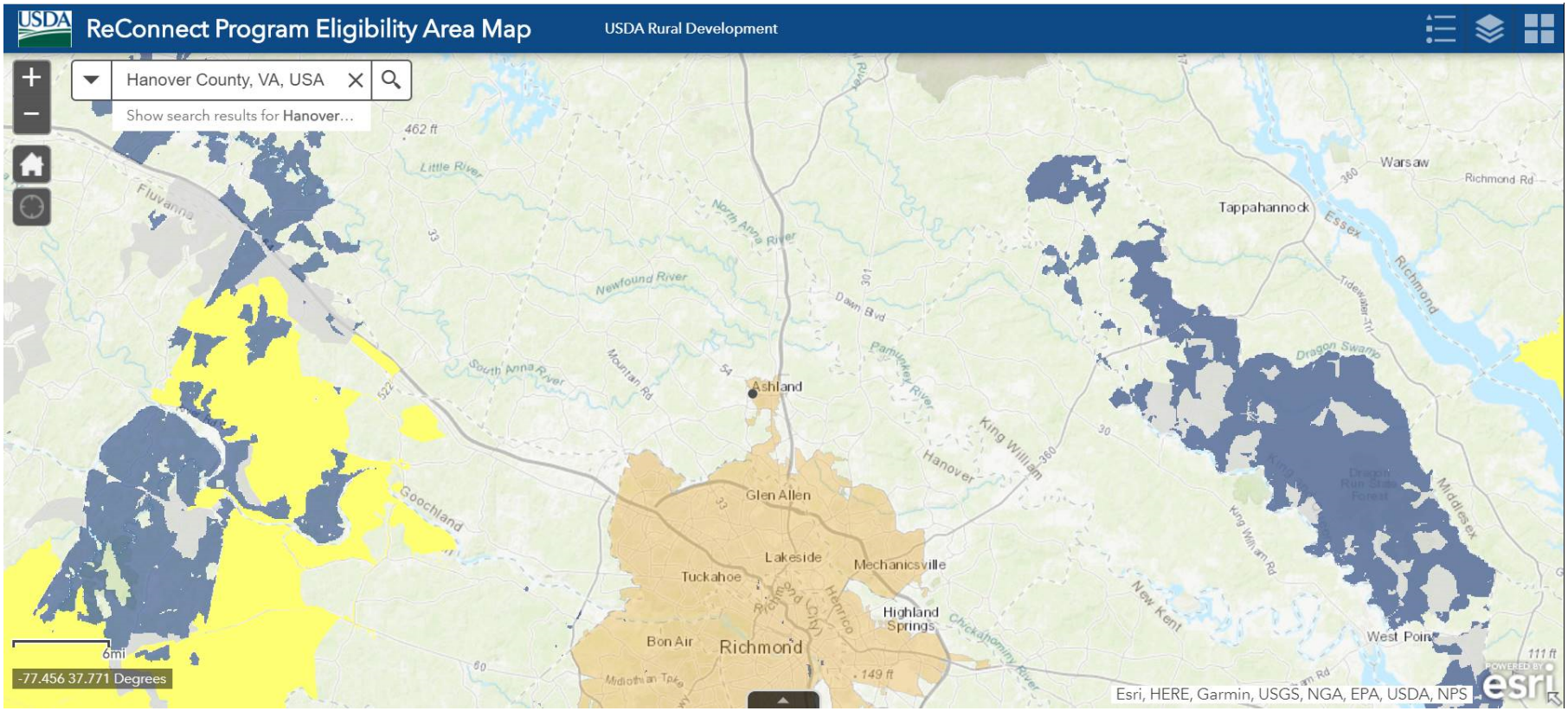


Source: https://www.fcc.gov/reports-research/maps/caf-ii-auction-results-april-2019/

USDA Broadband Map

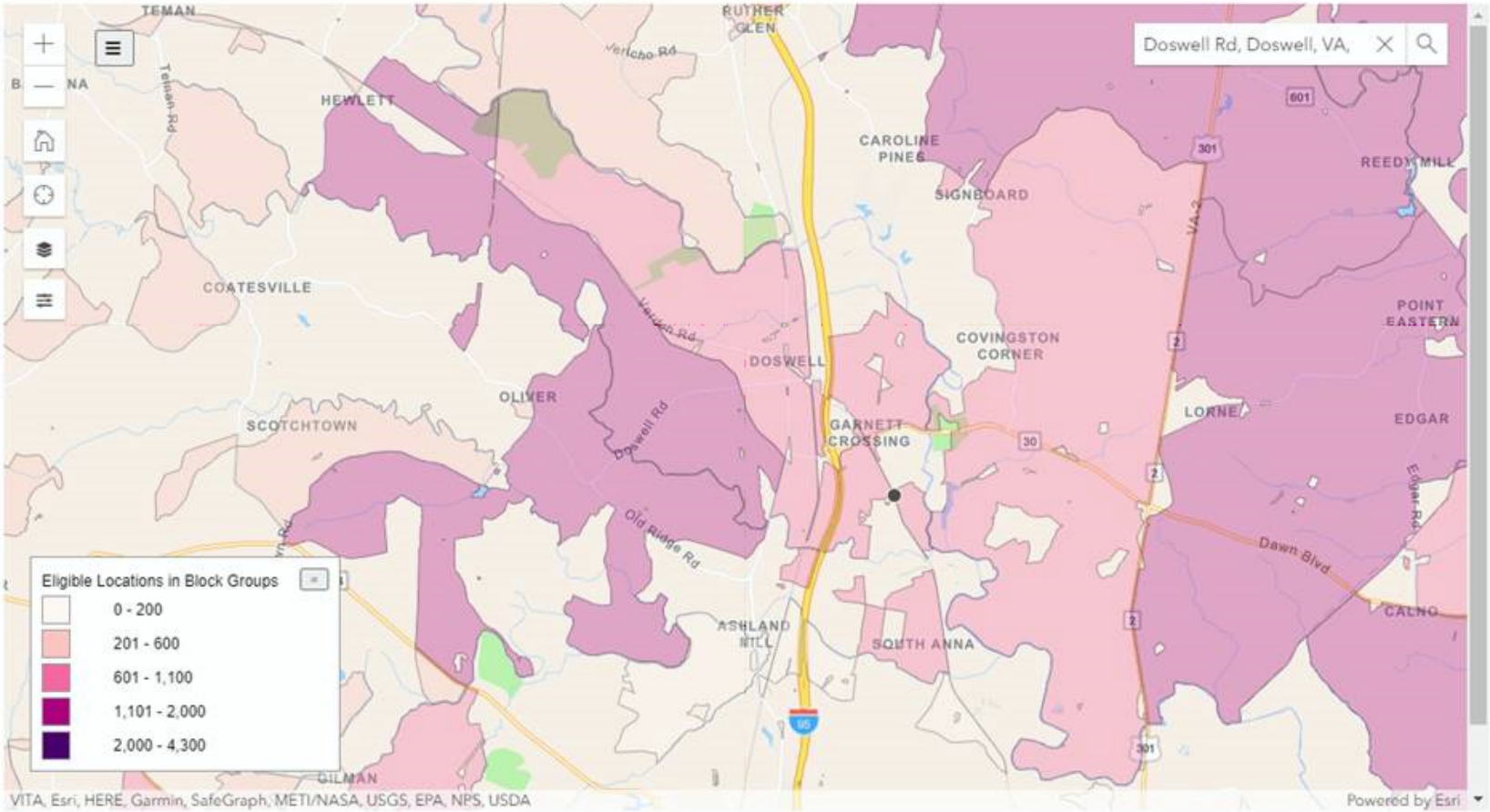
USDA Maps shows a pending application (yellow) to the west of Hanover County and a CAFII Auction winner to the east of Hanover County

Source: http://ruraldevelopment.maps.arcgis.com/apps/webappviewer/index.html?id=51bbfce8e72549dcb5374d0aa32e1736



Auction 904 Updated Eligible Areas

Published on 06/25/20



Source: https://www.fcc.gov/reports-research/maps/auction-904-updated-jun20-eligible-areas/